

Washington University in St. Louis

Washington University Open Scholarship

All Theses and Dissertations (ETDs)

Summer 8-15-2013

Brand Kerala: Commodification of Open Source Ayurveda

Chithprabha Kudlu

Washington University in St. Louis

Follow this and additional works at: <https://openscholarship.wustl.edu/etd>

Recommended Citation

Kudlu, Chithprabha, "Brand Kerala: Commodification of Open Source Ayurveda" (2013). *All Theses and Dissertations (ETDs)*. 1142.

<https://openscholarship.wustl.edu/etd/1142>

This Dissertation is brought to you for free and open access by Washington University Open Scholarship. It has been accepted for inclusion in All Theses and Dissertations (ETDs) by an authorized administrator of Washington University Open Scholarship. For more information, please contact digital@wumail.wustl.edu.

WASHINGTON UNIVERSITY IN ST. LOUIS

Department of Anthropology

Dissertation Examination Committee:

Glenn Davis Stone, Chair

Geoff Childs

Mark Nichter

Carolyn Sargent

Bradley Stoner

Gautam Yadama

Brand Kerala: Commodification of Open-Source Ayurveda

by

Chithprabha Kudlu

A dissertation presented to the
Graduate School of Arts and Sciences
of Washington University in
partial fulfillment of the
requirements for the degree
of Doctor of Philosophy

August 2013

St. Louis, Missouri

TABLE OF CONTENTS

ABBREVIATIONS.....	VI
ACKNOWLEDGMENTS	VII
ABSTRACT	ERROR! BOOKMARK NOT DEFINED.
CH 1 INTRODUCTION.....	1
1.4 EVOLUTION OF THE RESEARCH FRAMEWORK.....	9
1.5 AYURVEDA: AN INTRODUCTORY NOTE	10
1.6 A SHIFT IN THE ANALYTICAL FRAMEWORK.....	16
1.7 RESEARCH METHODOLOGY AND SAMPLE.....	17
1.8 CENTRAL ARGUMENTS AND THE ORGANIZATION OF THE DISSERTATION.....	23
PART ONE: FOCUSING ON THE DIFFERENCE: PROLOGUE	30
CH 2 OPEN-SOURCE COMMODITIES	38
2.1 CLASSICAL AYURVEDIC MEDICINE: A BARRIER TO COMMODIFICATION	41
2.2 COMMODIFICATION OF AYURVEDA IN REST OF INDIA: BREAKING BARRIERS.....	44
2.3 COMMODYING WITHOUT BREAKING BARRIERS: MANUFACTURERS FROM KERALA	50
2.4 IS BIG PHARMA TURNOVER AN ADEQUATE REPRESENTATIVE OF CLASSICAL MEDICINE CONSUMPTION?.....	55
2.5 DIVERSION OR DIVERSIFICATION? WHICH IS THE MORE APPROPRIATE TERM?.....	57
2.6 CLASSICAL PRODUCTS: A NEW LEASE OF LIFE?	58
2.7 CLASSICAL MEDICINES VS DOCTOR-MADE PROPRIETARY MEDICINES.....	59
2.8 AYURVEDIC SHOPS AND THEIR WARES: THREE PROFILES.....	62
2.9 OVER THE COUNTER BUYING OF CLASSICAL MEDICINES.....	66
2.10 THE AGENCY MODEL OF DISTRIBUTION: FEATURES AND SIGNIFICANCE	68
2.11 KERALA VS REST OF INDIA: WHY THE DIFFERENCE IN MANUFACTURING CULTURE?	74
2.12 CONCLUSION.....	81
CH 3 ROOTS OF THE DIFFERENCE.....	84
3.1 TRANSCENDING CLASS, CASTE AND RELIGION: AYURVEDA IN KERALA	85
3.2 DISCOURSE VS PRACTICE.....	88
3.3 THE BUDDHIST CONNECTION TO AYURVEDA IN KERALA	93
3.4 THE ROLE OF REGIONAL TEXTS IN DIFFUSION OF AYURVEDIC KNOWLEDGE	96
3.5 ROOTS OF THE DIFFERENCE	100
3.6 PRACTITIONER LANDSCAPE OF KERALA	106
3.7 CONCLUSION	117

PART TWO

INDUSTRIAL COMMODIFICATION OF AYURVEDIC MEDICINES

DESKILLING, ALIENATION AND RESISTANCE

PROLOGUE	121
CH 4 DESKILLING THE VAIDYAN	128
4.1 THINKING MEDICINE: ROLE OF VAIDYAN'S <i>YUKTI</i> IN MEDICINE MAKING	129
4.2 ROLE OF INDUSTRIAL COMMODIFICATION IN DESKILLING THE VAIDYAN	138
4.3 ROLE OF MODERN INSTITUTIONAL HOMOGENIZATION IN DESKILLING THE VAIDYAN	151
4.4 POST-SCRIPT	169
4.5 CONCLUSION	173
CH 5 COMMODIFICATION OF THE DECOCTION.....	175
5.1 THE UNYIELDING MALAYALEE	176
5.2 <i>BRAHMI</i> , THE MEMORY PLANT	178
5.3 IS THE CAPSULE THE SAME AS THE JUICE?	181
5.4 CLASSICAL FORMS	183
5.5 AYURVEDIC PHARMACOLOGY: A BRIEF INTRODUCTION	189
5.6 <i>KURUNTHOTI</i> : THE STAR OF DECOCTIONS	192
5.7 CENTRALITY OF THE DECOCTION IN THE KERALA PHARMACOPEIA	194
5.8 THE CURIOUS CASE OF <i>KURUNTHOTI</i> DECOCTION AND TWO CONFUSED, YOUNG, EXPECTING WOMEN	199
5.9 BREAKING BARRIERS: COMMODIFICATION OF THE DECOCTION.....	202
5.10 CONCLUSION	205
CH 6 UNPROCESSED AYURVEDA	
<i>RAW DRUG SHOP: THE KEY NODE OF PRE-INDUSTRIAL AYURVEDA.....</i>	207
6.1 KEY NODE OF AN ANCIENT COMMODITY CHAIN: A DESCRIPTIVE ACCOUNT	210
6.2 DEMANDS ON KNOWLEDGE.....	216
6.3 OLD MEDICINE IN NEW BOTTLES: TRANSITION FROM UNPROCESSED TO PROCESSED	220
6.4 FACTORS THAT DRIVE CONTINUING CONSUMPTION OF RAW DRUGS.....	226
6.5 TRADITIONAL-POPULAR FORMULATIONS: TWO EXAMPLES.....	228
6.6 CONCLUSION	236

CH7 ALIENATION AND DESKILLING IN THE SUPPLY CHAIN.....	236
7.1 UPSTREAM SUPPLY CHAIN: AN OVERVIEW.....	238
7.2 IMPLICATIONS FOR PRODUCTION	241
7.3 MEDICINAL PLANT RESOURCES IN THE FOREST: CULTURAL VS ECONOMIC STAKES.....	253
7.4 NON-FOREST MEDICINAL PLANT RESOURCES: CULTURAL STAKES.....	267
7.5 NON-FOREST MEDICINAL PLANT RESOURCES: ECONOMIC STAKES	270
7.6 MEDICINAL PLANT FARMING IN KERALA: PROBLEMS AND PROSPECTS	276
7.7 AYURVEDIC INDUSTRIAL CLUSTER: POTENTIAL TO BRIDGE THE PRODUCER-SUPPLIER GAP.....	288
7.8 CONCLUSION	289
PART THREE	
NEW WAVE OF COMMODIFICATION: PROLOGUE.....	292
CH 8 FROM ILLNESS TO WELLNESS: SERVICE COMMODIFICATION.....	295
8.1 RESORT OR HOSPITAL? CLINIC OR SPA? : NEW SPACES, NEW CONSUMERS, NEW QUESTIONS.....	296
8.2 THE RISE AND RISE OF AYURVEDIC TOURISM IN KERALA	301
8.3 PANCHAKARMA – THE NEW COMMODITY	303
8.4 NEW SPACES AND NEW STAKEHOLDERS.....	306
8.5 MARRIAGE BETWEEN THE OLD AND NEW: TRADITIONAL STAKEHOLDERS IN NON-TRADITIONAL SPACES	308
8.6 IDENTITY CRISIS AND THE MANUFACTURING OF AUTHENTICITY.....	310
8.7 NEW PRACTITIONERS: THE SPAWNING OF PARAPROFESSIONAL TRAINING INSTITUTIONS	318
8.8 NEW MODES OF COMMODIFICATION	327
8.9 GOING TO THE ROOTS OF WELLNESS COMMODIFICATION	340
8.10 DISCUSSION.....	344
8.11 CONCLUSION.....	348
CH 9: MEDICINE COMMODITIES: REINVENTION AND DIVERSIONS	350
9.1 CLASSICAL PRODUCTS IN NEW AVATARS	351
9.2 IS THE DECOCTION TABLET THE SAME AS THE DECOCTION?.....	354
9.3 PRODUCTS CAPITALIZING ON THE SERVICE MARKET	360
9.4 NEW AND CONTROVERSIAL OTC SEGMENTS.....	370
9.5 THE MEMORY MARKET: AN UNNOTICED PRE-CURSOR TO THE OTC BOOM	381
9.6 RIDING ON THE VAGUE BOUNDARIES BETWEEN FOOD AND MEDICINE.....	384
9.7 AYURVEDIC INGREDIENTS, UN-AYURVEDIC COMMODITIES	388
9.8 CONCLUSION	396

CH 10 CONCLUSION	398
APPENDICES	
APPENDIX A: SAMPLE DETAILS	407
APPENDIX B: PROFILES OF AYURVEDIC PHARMACEUTICAL AGENCIES	410
APPENDIX C: TREATMENT PROTOCOL ON CHIKUNGUNYA MANAGEMENT	411
APPENDIX D: AYURVEDIC PHARMACOLOGY: BASIC CONCEPTS	413
APPENDIX E: DIFFERENCES IN PHARMACOPEIA: NORTH INDIAN VS KERALA AYURVEDIC MANUFACTURERS.....	415
APPENDIX F: PHARMACOLOGICAL ATTRIBUTES OF INDEX HERBS	416
APPENDIX G : TRADITIONAL HEALERS CERTIFIED BY KIRTADS.....	417
APPENDIX H: KATTUPADAVALAM FARMING: THREE VIGNETTES.....	418
APPENDIX I: SAMPLE AYURVEDA WELLNESS PACKAGE	419
APPENDIX J MEDICAL INFRASTRUCTURE IN KERALA & INDIA.....	420
APPENDIX K AYURVEDIC CONFERENCES AND ASSOCIATED AYURVEDIC INDUSTRIAL EXPOSITIONS	422
BIBLIOGRAPHY	425
GLOSSARY	444

ABBREVIATIONS

AH	Ashtanga Hridayam
AMMOI	Ayurvedic Medicine Manufacturers' Association of India
AMAI	Ayurvedic Medical Association of India
ADMA	Ayurvedic Drug Manufacturers' Association
AVP	Arya Vaidya Pharmacy
AVN	Arya Vaidya Nilayam
AVS	Arya Vaidya Sala, largest manufacturer of Kerala
AYUSH	Ayurveda Unani Siddha and Homeopathy (Central government department for Indian systems of medicine)
BAMS	Bachelor of Ayurvedic Medicine and Surgery
CARe Keralam	Confederation for Ayurvedic Renaissance Keralam (Ayurvedic Industrial Cluster)
CS	Charaka Samhita
DMR	Drugs and Magic Remedies Act (1958)
DCA	Drugs and Cosmetics Act (1940)
FMC(H)G	Fast Moving Consumer/Health Goods segment
FRLHT	Foundation for Revitalization of Local Health Traditions
GSCS	Girijan Service Co operative Societies
GMP	Good Manufacturing Practices
ISM	Indian Systems of Medicine
ISMH	Indian Systems of Medicine and Homeopathy (Department of)
KAL	Kerala Ayurveda Limited
KFRI	Kerala Forest Research Institute
KIRTADS	Kerala Institute for Research Training & Development Studies of Scheduled Caste and Scheduled Tribes
MAPI	Maharishi Ayurveda Products International
MFP	Minor Forest Produce
NMPB	National Medicinal Plant Board
NREGS	National Rural Employment Guarantee Scheme
NTFP	Non timber forest produce
NWFP	Non wood forest produce
OTC	Over the Counter
SCST Federation	Schedule Caste and Scheduled Tribes Federation
SDS	Sarngadhara Samhita
SHG	Self help Group
SMPB	State Medicinal Plant Board
ST	Scheduled Tribe
VSS	Vana Samrakshana Samitis, i.e., forest protection committees

ACKNOWLEDGMENTS

I would have almost skipped this section had it not been mandatory, not because I had nothing to be grateful for, but because it is daunting to condense volumes of unstructured emotion into a few trite sounding words, and worse, having to do it without the support of a theoretical framework. If the rule was intended to ensure that nobody gets a doctorate awarded without going through a deeply humbling moment of realization, it has certainly succeeded.

Let me begin with thanking the Washington University and the Department of Anthropology for the fellowships and assistantships that made this journey feasible and additionally, for the financial support provided for pilot study and dissertation writing. I admire and appreciate the academic flexibility and rigor of the American university culture that inspired me to this outlandish proposition of coming all the way from India only to go back to study local knowledge; I have not been in the least bit disappointed in my expectations. I am guilty of commodifying traditional knowledge myself, if you will, by selling the idea to Wenner-Gren Foundation for Anthropological Research and the National Science Foundation (Dissertation Improvement Grant Id: 0752247), without whose support the extended field work that contributed to the grist to this mill of analysis would not have been possible.

The flesh and bones of this dissertation are constituted of the stories that the ayurvedic community of Kerala has generously shared with me, to whom I am most indebted to. I began the fieldwork with apprehension about the politics of intellectual property issues with regard to medicinal knowledge, but I have often been taken aback and moved at the openness with which people have shared their knowledge and experiences, the trust they have placed in me to make good use of it, and I hope I have not let them down. Unfortunately, I cannot name all the contributors; they are too numerous and also because many identities have been protected. While I am grateful to each one of them, I will name some who have shared with me significant time, information and resources.

Firstly, I want to specially acknowledge a few whose help and contribution were critical to this work: Dr. T. S. Muraleedharan, Chief Technical Services of AVS, Dr. D. Ramanathan, MD of Sitaram Pharmacy and General Secretary of Ayurvedic Medicine Manufacturers Organization of India (AMMOI), Dr. T. Sivadasan, Ayurvedic Drugs Controller, Dr. Sheela Karalam, Head of R&D of Oushadhi, Dr. Verghese Pattarumadom, Dr. Joy Verghese CEO of CARE Keralam, Shankaran Vaidyan of Urali community, Madhavan Vaidyan of Keeripattu Pharmacy, Raw drug trader seller Verghese. The others I am grateful to include, but are not restricted to, the following contributors:

State Officials, office-holders and Ayurvedic Company CEOs: Dr. Anita Jacob, Director, ISM Directorate Kerala, Dr. Mukundan, Deputy Director, ISM Directorate Kerala, Mr. Ranjit Puranik, owner-CEO of Dhootapapeshwar and General Secretary of Ayurvedic Drug Manufacturers Association (2002-2010), Dr. J. D. S. Pani, President of KIMMA, Dr. Joji Thachil and Dr. V. G. Udaykumar, General Secretaries of Ayurvedic Medical Association of India (AMAI), Dr. N. Jaya, Director of the Indian Institute of Panchakarma, Dr. P. Y. John, Drug Inspector of Ernakulam, Dr. K. Muraleedharan, Chief Physician of AVS, Dr. K. V. Gopalan, Senior Physician of AVS, Dr. K. Anil Kumar (MD, KAL), Dr. Ramesh Varier (MD, AVN), Mr. Joyachan Erinjery (MD, Everest Pharma), Dr. H. Nagesh Prabhu (MD, Oushadhi), Dr. N. K. Padmanabhan Vaidyar (MD, Nupal), Dr. K. P. Jose (MD, Kalan Pharmaceuticals), Dr. Jacob Thomas (MD, Sahyadri), Mr. (and Mrs.) Joji Thomas (MD, Sanjeevani Vaidyashala), Anil Krishna (MD, Elixir Extracts), Mr. Rajiv Vasudevan, the founder-CEO of AyurVAID, Dr. Gopi (MD, Chempenkulam), Mr. Rajesh Puri (VP, BACFO), Mr. M. Muraleedharan (Secretary, Kerala Ayurveda Samajam), Dr. K. V. Krishnan (MDm Sree Sakthi Pharma), Dr. Rudran (MD, SKVM Pharmacy) and Dr. Thambi (MD, Vindjhya Pharmacy), and Dr. Jaya Nangelil, owner and Physician, Nangelil Hospital and Pharmacy, Dr. (Sr.) Donata, Principal, PNNM, Dr. Menon, Vice Principal of PNNM and Trustee of KAS, Dr. Sartori Guido of Ayur-Point, Italy, Dr. P. P. Joy,

Associate Prof. Agronomy, Aromatic and Medicinal Plants Research Station (KAU), Mr. Pius O.L., Technical Assistant, State Medicinal Plant Board, Dr. Rajasekaran, Scientist TBGRI, anthropologists Dr. Mani Bhushan and Dr. Viswanathan Nair (ex-Director) of KIRTADS.

Managerial staff of all the 35 companies, specifically,

General Managers of Kandamuklathy (Mr. Babu Joseph) & Vaidyaraj (Mr. P. M. T. Namboodiri)

R&D Managers of AVS (Dr. T. S. Muraleedharan), Oushadhi (Dr. Sheela Karalam), AVP (Dr. Sindhu A.), Nagarjuna (Dr. M. S. Noushad), & KAL (Dr. Sarala Samuel)

Production managers of AVP (Dr. Muraleedharan) & Oushadhi (Dr. Satheeshnath)

Marketing/sales managers of Nagarjuna (Mr. Narayanan Namboodiri), SNA (Mr. A. Jayakrishnan Nambi), Vaidyaratnam (Mr. Vijayan P. N.) KAL (Mr. Nandakumar T. C.) Sitaram Pharmacy (Deepti Ramakrishnan) Oushadhi (Mr. R. Suresh Kumar), Ayu:care (Mr. A. C. Nair), AVS (Mr. K. P. Nair) & SDM Pharmacy (Mr. T. G. S. Narayanan)

Purchase managers of Oushadhi (Mr. E. Shibu), Santigiri (Mr. Raju M. T.), Vaidyaratnam (Mr. M. P. Rajan) & AVS (Mr. Ramkumar),

Others include, Dr. C. I. Jolly, scientific advisor of KAL, Pharmacognosists of Nagarjuna (Dr. Baby Joseph) and AVS (Dr. Indira Balanchandran).

Chairman and staff of SCST Federation, Trivandrum and staff of medicinal plant collection societies of Adimali, Pottomavu, Vazhathopu, Vachumaram, Munnar, Kothamagnalam, Attappady, Meppady, Kurumba, and branch offices of Kalpetta and Thrissur.

Ayurvedic Doctors/Vaidyans: Annakutty Vd., Kalari Gurus Narayanan Gurukkal and Muhammad Gurukkal, Dr. Narayanan Namboodari of Vaidyamathom, Dr. B. Rajeev, Dr. Giriraj, Dr. Mohanan, Dr. Smitha Joji, Dr. Giriraj, Dr. Shaji Varghese, Dr. Geetha Menon, Ashokan Vd., Kuttappan Vd., Madhavan Vd., Kumaran Vd., Annakutty Vd., Dr. Venugopal Sharma, Dr. Thambi, Dr. Mahesh Gupta, Lakshmi Vd., Mr. and Mrs. Phillippose Vds., Thomas Machiplav, Thankappan Vd., Musaliyar Vd., Mr. Josh Kumar, and Dr. Mahesh Babu.

KIRTADS certified (Scheduled) Tribal Vaidyans: Shankaran Vd., Muthu Vd., Eeswaran Vd, Vd. Appukuttan, Vd. Rajesh Vd., Mokshadayakan Vd., Krishnan Vd., and other respondents from Muthuvan, Kani, Mannan, Kuruchiyar, Kadar and Urali communities.

Officials/staff of Kerala Ayurvedic Drug Control Department, NGOs ESAFI, Vanamoolika and Asarikkad Co-operative Societies, Mr. P. V. Sabu of Ayurdhara Pharmaceuticals, farmers Mr Biju, Mr. Sony Chollamadam, Mr. Vidyadharan, Mr. Muthaiah, Mr. Ayyappan, ayurvedic medicine and raw drug sellers, Mr. Paul Vendoor, Mr. Johnny, Mr. Vijayan, Mr. Varghese, traders Mr. Beeran, Mr. Abdullah, Mr. Mohammad Haji, Mr. Johannan.

Besides this, I want to thank all unnamed respondents including doctors, traditional practitioners, office holders of traditional practitioner associations, staff of all the 35 ayurvedic companies, wholesale traders, medicinal plant collectors, retail sellers of raw drugs and ayurvedic medicines, farmers, medical representatives, tourist spa owners, managers and therapists, therapist training institute owners, forest department officials, martial art practitioners, officials of government departments, and consumers.

As for the advisory committee, I couldn't have asked for a better combination of people. First, my advisor Glenn Stone, who has an uncanny knack of dropping tiny bits of precious advice just at the right juncture, a few of which I am afraid were lost on me until the import of the American phrase 'strongly recommend' gradually sunk into my head. One such bit that I understood and took heed went on to become the framework on which the dissertation is built on, the theory of commodification. I am tempted to recount the numerous instances in which Glenn's inputs took me towards useful directions, but I will stop at saying that working with him has been intellectually rewarding in every way. What has been as important to me as his advice was his ability to let go of it, to entertain difference of opinion, and not mind even if I went in the opposite direction. I also had the good fortune of getting some first hand field tips, when he visited and spent some time with me in the field just when I had begun my fieldwork. I have to also specially thank him for patient and meticulous reading. Though all advisors are condemned to suffer the torture, I have tested Glenn's patience with my predilection to verbosity - what is presented here is just one-third of what he had to suffer. But for his indulgence and willingness "to read how much ever you write" as he told me, this dissertation would not have been what it is now. Finally, Glenn has perhaps no idea of the morale boosting side-effects of our discussion sessions, the role of his infectious enthusiasm in assuring me the worth of many angles of analysis that I would have otherwise dismissed as insignificant.

I got twice lucky when I got Mark Nichter (from the University of Arizona) to join the advisory committee, who is a medical anthropologist with life long expertise in the region. I am highly indebted to his advice and feedback, his approachability despite his busyness and his never-fading involvement with the subject. Though I mean every word in the previous sentence, it is exactly the kind of trite sentence I was afraid of making when I began writing this section. Let me try and better it with some explanation. After making an elaborate thesis outline post fieldwork, I grew cold feet and was planning to axe two topics; the potential length had seemed impractical. A long conversation with Nichter before the committee meeting ruled out all my hopes; those happened to be the exact topics about which he showed the most interest, local history of medicine and medicinal plants. It is in that conversation that I first realized the breadth of his knowledge in the subject. While this was unnerving at times, it was at the same time exhilarating to share the thrill of little discoveries with someone who had background knowledge. When the history theme got out of hand, it was he who rescued me from getting lost, and it was his feedback and encouragement that convinced me the worth of keeping parts of several pieces of analysis that I was uncertain about. The fact that his and my experiences were ayurveda were vastly different despite the geographical proximity often led to lengthy exchanges including some heated arguments, all which have inspired the story telling in this dissertation. His tireless involvement in the small details of this work, his passion for the pursuit of knowledge, in his words of "putting together pieces of a puzzle", have been particularly inspiring, especially so, because of their rootedness in concerns that extend beyond academics, in real life problems of health care and conservation.

I am highly indebted to all the other mentors, Geoff Childs, Brad Stoner, Carolyn Sargent and Gautam Yadama who have provided me with constant encouragement and inspiration that has helped me boost my morale from time to time. I appreciate from the bottom of my heart, the effort that each of them has spent on ploughing through unfamiliar ayurvedic jargon with meticulousness and attention to detail and the constructive feedback. I am thankful to Gayle Fritz, a former advisory committee member whose encouragement was important in maintaining index plants as part of the methodology. The interaction with every person on my committee has been also indirectly a lesson in mentorship that I hope I will be able to match if an opportunity presents. I also want to thank various faculty of Washington University from whose courses I have benefited, I want to specifically mention four faculty: Charles McManis of the school of Law for the timely education in intellectual property law, Guy Ostalono of the Department of History for insights on history and politics of science, to Gayle Fritz for a very useful introduction to ethnobotany, and to Glenn Stone again for insights into theoretical areas in ecological and economic anthropology.

Finally, family and friends have been important background players. I want to begin with the most important, Yamuna aunty, the primary influence in my life, who sacrificed much to bring me up when I was young, who provided me a dream childhood free of rules, restrictions and expectations, who is sadly no more. She also happens to be the first to introduce me to my only mention-worthy experience with formal Ayurveda before this fieldwork. I am grateful to my parents (K.T. Gatti and Yashoda Ammembala), my brother Roop (Satyajit) and sister Priya (and their families), who have also been my constant intellectual companions and sources of support. It was only incidental that I diverted into the study of formal Ayurveda which I had little inclination to begin with, though it is closely connected to my original interest in rural traditional knowledge in general, and medicinal knowledge in particular. This inspiration I owe to the Kudlu family, my father and his siblings, Sharada Mami and late Ganesha Chikka, and to my late grandmother, a medicine expert, who was the distal cause of it all. To this were added memories accumulated over years of delightful summers spent in my mothers' sister's farming families of Kurnad and Pilikoor, who I want to remember with fondness and gratitude. The undergraduate experience in SDM college, in the village of Ujire in South Kanara, added to my interest in rural non-mainstream knowledges. I am especially indebted to my teacher Niranjana Vanalli who exposed us to people in surrounding villages as part of journalism training. I was further inspired by Regi, before he took up the thankless role of my life partner, through his research interest and personal background in farming. Regi has been an important part of this journey of discovery, a project which he has wholeheartedly jumped into. He has accompanied me on several field visits, has been a constant companion in discussions, contributing useful insights and critical feedback. In fact, he got so involved with the topic that, for a long while that was all we were talking about. And at times, when I was overwhelmed with the dissertation, I had to literally plead with him not to mention a word more on the subject! Besides this, he was of much help till I got a hang of spoken Malayalam, and later in helping me get through written material faster than my reading speed would permit.

I was somewhat apprehensive of moving away from my original plan of studying my native place to an area where I had no command on the language nor social network, but Regi's Kerala connection gave me an advantage of being a part-insider. It also gave access to personal stories that would have been difficult to access if I were an outsider. I thank all of Regi's family, especially his parents (KKK Thomas and Annamma), sisters Mini chechi and Reena and their families, many members of families of my mother-in-law's brothers and sisters in Kottayam, for their hospitality and informative conversations. I am most thankful to the field work and clerical assistance provided by Neetu, Ramachandran, and Joseph, and to consultations and contacts provided by Sony Pellissery, Venugopal and Babu. I want to thank the families of Chandran, Elias and Menon for providing comfortable lodging facilities, in Idukki, Ernakulam and Thrissur respectively, and also for intentionally or unintentionally contributed data to this study. I want to specially thank my friends Bino Paul and Saritha for their companionship in some of the field trips. I am grateful to Bino's mother M. S. Eliakutty who has kindly shared her extensive knowledge of plants and medicines.

I am specially grateful to Elaine Beffa and Kathleen Cook for putting up with my unending queries with a smiling face and responding with lightning speed, helping in smooth navigation of bureaucratic processes. I cannot appreciate enough the significance of the Olin Library in contributing to this dissertation. Finally, I am thankful for the companionship and supportive atmosphere offered by the Department graduate colleagues, office staff and faculty throughout the period of graduate study that made this journey memorable. I resist the temptation to begin another list of names, but I want to specially thank three friends, Deepalakshmi, Chockalingam and Namgyal for their hospitality and support during my stay in the US. I am indebted to the companionship provided by many other friends and colleagues both here and back in India, who are too numerous to list. Some have provided me with hospitality, some have contributed their personal stories that I have taken the liberty of mercilessly converting into data, with and without permission (hope IRB is not going to go after me) and some, with the most invaluable of all support, friendship.

This Dissertation is Dedicated to Yamuna Aunty

ABSTRACT OF THE DISSERTATION

Brand Kerala: Commodification of Open-Source Ayurveda

by

Chithprabha Kudlu

Doctor of Philosophy in Anthropology

Washington University in St. Louis, 2013

Professor Glenn Davis Stone, Chairperson

This dissertation aimed to understand formal and informal ayurvedic knowledge and practice through the framework of commodification, in the context of the recent emergence of global ayurvedic tourism in Kerala, India. The objective was to understand how commodification, both old and new, have affected knowledges and livelihoods of actors constituting the ayurvedic commodity chain, with a focus on ‘social lives’ of ayurvedic pharmaceuticals and select herb-ingredients. I argue that the trajectory of commodification in Kerala provides a stark contrast to the national mainstream with its focus on classical vis-à-vis proprietary medicines. This therapy-centric business model maintained the integrity of traditional ayurvedic practice by keeping the ayurvedic doctor within the loop. I suggest that the new wave of multi-faceted tourism-inspired commodification draws on this strength. This in turn has created a paradigmatic shift in the way ayurveda is commodified locally and globally, by switching focus from ‘pharmaceuticals’ to ‘services’, and ‘illness’ to ‘wellness’.

I suggest that conceptualizing classical medicines as ‘open-source commodities’, brings attention to the significance of background knowledge processes. While distinct stakeholder characteristics and historic State patronage are significant factors, at the root of the commercial viability of open-source-ayurveda, I argue, is the continuity of a cultural practice, the robustness of it I attribute to its historical evolution in Kerala as a mass commodity in contrast to its elitist status elsewhere. However, industrialization threatens the traditional role of knowledge-intensive actors: doctors, consumers, raw drug shops and medicinal plant collectors. I argue that the industry’s role is contributory rather than causal; more significant in endangering ayurvedic metis are effects of modern institutionalization shaped by goals of homogenization and scientization. Discussing the nature of deskilling each node has undergone, I demonstrate the significance of ‘cultural stakes’ in the conservation of common property resources that are more often than not at loggerheads with ‘economic stakes’.

The arguments in this dissertation are built over and contribute to three bodies of anthropological research: economic anthropology engaged in the study of commodities and commodification processes, ecological anthropology concerned with conservation of common property resources, and medical anthropology concerned with study of medical systems and pharmaceuticals.

CH 1 INTRODUCTION

The weather was unbearably sultry and rains were continuing to play truant for the second month of the monsoon season. I was trying to locate a bench to wait for my turn to be called in, after handing over my visiting card to the attendant at the door of a government officer in Trivandrum, Kerala. Before I could find a seat, I was summoned inside. I was pleasantly surprised; I had heard some voices inside the office, and had assumed that it might take a while. Typically, waiting in government offices in India whether you come with an appointment or otherwise can take hours. “Yes! What do you want?” without asking me to sit, the official asked, looking at the visiting card rather than at me in a typical *Indian government office* style. The office was more like a large sprawling hall than a room, the space and the large table obviously designed to signify the rank of the officer and to intimidate less privileged visitors like me. Two other visitors seated in front of him stared at me curiously. Hiding my discomfort at the incivility, I hesitantly proceeded with my introduction. Hardly had I uttered the word medicinal plants, he rudely interrupted me, “You people from America come here and take our knowledge away and then patent it!” I had not seen that coming. Not someone known for my presence of mind, I was at a loss of words. Thankfully, to my relief he continued, “Anyway, let me see what I can do. Please come after half an hour, I have some work to attend at the moment”. I walked out dazed, wondering whether I should take the trouble of going back at all. Besides the fact he was rude it did not feel good to be downright implicated as being part of the international biopiracy racket. I wondered if he would react that way if I did not ‘look’ native and consequently less powerful. A small inner voice cultivated as a journalism student pulled me back, reminding me that the ‘scoop’ always lay in uncomfortable, if not dangerous corners. I should not take it personally, I told myself. On second thoughts, he was probably justified in being apprehensive, given the history of cases like *turmeric* where scientists of Indian origin were responsible for filing American patents on what is household knowledge in India. After all, wasn’t this something I was already expecting before entering the field?

This was the second month of my pilot field work in India. I was doing exploratory leg work to identify specific issues within the larger framework of indigenous knowledge of medicine and medicinal

plants. I was visiting some of the government departments connected to the Indian medicine systems, pharmacognosy, forestry and related offices in Trivandrum, the capital city of Kerala. A few months before heading to the field for my pilot study I had come across a news piece on a bizarre anecdote: a European student studying tribal medicine in Kerala had been apprehended as a foreign intelligence agent. It began with an incident of local people accusing her of stealing tribal knowledge. When officials came to investigate her belongings, they saw the CIA fact sheet on India, and lo and behold, the case was nailed! Kerala, the Marxist capital of India, obviously had to be a place hypersensitive about issues of biopiracy and especially suspicious of America, the country spearheading global capitalism. Over the last two decades, Kerala had also grown to become the global capital of Ayurveda, which had made the State hyper-aware of the revenue potential and consequently, of the vulnerability of indigenous knowledges. In fact, Kerala was the first State in India to pass an Intellectual Property Rights Bill in 2008, courting controversy for legislating on a Central subject outside its jurisdiction.

When I went back after half an hour the official was surprisingly composed; there was no trace of the previous outburst. I wondered if it was the audience that had inspired his performance. Probably the large room and table were not symbolic enough to represent his power. Its dusty, commonplace appearance might have lost its former esteem amongst the swanky interiors of today's ultra-modern offices. Hence the power had to be demonstrated in other ways. What better way than having the gumption to tell off someone coming from a superpower nation? This time, he listened patiently as I explained my intentions. What seemed to put him to total ease was the information that I was a social scientist. Poor social scientist, ignorant of the complexity of botanical and chemical knowledge that the little plants concealed in them. He had in fact plenty to say, much of it reveling in the pride of India, and especially Kerala being the sole place in the world sought out for its medicinal knowledge. "You know, people from all over the world are coming here. Why do you think? This is the only country in the world with such rich plant diversity". He was telling this to me, a representative of all outsiders purportedly in awe of Kerala's botanical wealth. In the next three years, I was to hear such statements repeated often at various meeting and public forums. Global attention had turned a self-contained

culture into a self-conscious culture. Two decades ago, Ayurveda in Kerala targeted only Keralites.¹ Everywhere the Keralites went, Kerala ayurvedic products followed them, be it Bombay or Dubai, Singapore or UK. In fact, one of the top priorities of Malayalee² associations outside the State was to run a Kerala Ayurvedic medicine outlet, invariably equipped with a Malayalee doctor. As a result, Ayurvedic products from Kerala already had a national and global presence, though the patrons until recently was mostly limited to the Kerala diaspora. In India, Keralites have been historically famous and infamous for their mobility. The story of a Keralite running a tea-shop on the moon when Neil Armstrong landed there is a household joke in India. So big is the Diaspora that expatriate remittances constitute a quarter of the state's GDP. Kerala has been historically famous for its model of development, for achieving development indicators equivalent to developed nations (Frank and Chasin 1990). But poor industrialization combined with a highly educated workforce has created an environment conducive for labor migration³. Kerala's high population density more than double the national average (819/sq.km Vs 325/sq.km), consequently high pressure on land resources, has also been an important factor in driving labor migration. Bulk of the State's manpower exports constitutes of low-skill labor to gulf countries, and nursing practitioners to Gulf and European countries⁴.

Over the past two decades, Kerala has grown to become the cynosure of global Ayurveda. For Ayurveda practitioners in Kerala and across the country, people from the powerful West with their lucrative Dollars and Euros not only promised a much needed wealth but also a prestige that was sorely lacking at home. For a medical system enervated by competition with state-sponsored biomedicine, the Kerala phenomenon was a



Aimed at the outsider: Ayurvedic tourism services, Varkala

¹ Term used to denote residents of Kerala.

² An alternative term used to denote residents of Kerala, based on the local language Malayalam.

³ Unemployment rate in Kerala 11.6% (rural), 12.2% (urban) as against India: 2.3% (rural), 5.7% (urban). Around 4 million unemployed persons registered in employment exchange, 50% of which are graduates or technically qualified.

⁴ An estimated 2.5 million in Gulf countries as at 2008. (Govind 2008).

welcome opportunity for reinvention and rejuvenation of its identity. It was after all the West that had delegitimized the system, and it was perhaps natural that people look up to the same authority to restore the lost legitimacy.

By the end of four months of pilot study in the summer of 2006, I was beginning to recognize that the concept of “Ayurveda” or “tradition” in Kerala was inconsistent with the findings of research studies in other parts of India. It was also very different from my lived experience in the States of Karnataka and Maharashtra. But I was yet to realize then, the potential significance of this perceived difference, in informing my future analysis. At the time, I was enthralled by the myriad forms of commodities and the new modes of selling emerging in the ayurvedic market. In industry-starved Kerala, Ayurveda seemed to be one of the most happening sectors next to real estate, gold and liquor. Stories on Ayurveda had become a daily feature in the newspapers. Newly booming market of health magazines were brimming with advertisements of ayurvedic products and services, creating an illusion of Ayurveda overtaking *allopathic medicine*, common Indian term for biomedicine. I am saying illusion because in terms of numbers, Ayurveda nowhere matches up with the hype. A recent survey conducted by Kerala Sasthra Sahithya Parishath (KSSP) revealed that only 6.6% of the population of Kerala opted Ayurveda, while 87% preferred allopathic treatment (Kumar, 2012). The ayurvedic industry in Kerala is a mere quarter of the allopathic market in size, but for a State known for its exemplary biomedical primary care infrastructure (Kannan 2005), this is quite significant. But I am saying illusion, because ayurvedic medicine still constitutes.

However, the post-tourist ayurvedic hype had led to many fast paced developments – the State government was in an intervention mode with policies on regulation of tourist Ayurveda, plans to augment forest collection to boost revenue, and aggressive promotion of subsidy schemes for medicinal plant farming. M.S. Swaminathan, the architect of the Indian green revolution, had called for the development of a ‘bio-valley’ in Kerala (Hindu 2009). Despite paucity of land, tropical Kerala was being seen as an ideal place to promote medicinal plant cultivation. The most picturesque of all was the tourist segment. Beaches and hill resorts were dotted with *Panchakarma* (cleansing therapy) centers, ayurvedic resorts and massage parlors. High-profile actors were entering the ayurvedic market, ranging

from some of the largest business groups in the country to high-end hospitality chains, from biomedical pharmaceutical companies to multinational consumer goods companies. It was so distracting that I didn't know where to look; the action was rapid and high-pitched. A single question kept coming back to my mind; how is all this commercialization transforming Ayurveda? What are the implications of these changes for practitioners and consumers, and to the medical system itself? Ayurvedic medicine, especially as practiced in Kerala, leans heavily on a pharmacopeia of herbs that move through varied commodity chains which too must be undergoing change. Of the several vantage points that could be used to investigate the subject, the theoretical framework of 'commodification' seemed most appropriate.

During the period of my pilot study, I traveled across ten of the fourteen districts in Kerala and met with several people including ayurvedic doctors, manufacturers, raw drug traders and medicinal plant collectors. I visited diverse sites where Ayurveda was being consumed, including raw drug shops, government and private clinics and hospitals and tourist spas. If one were to choose the subject of research based on visibility, it had to be the ayurvedic tourism segment, novel, dynamic and colorful. But to me, as an insider, it was the backdrop of Ayurveda in Kerala that was attractive. While the tourist Ayurveda was the most eye-catching, it was the sustained home consumption of ayurvedic commodities and services in Kerala that had enabled the system to survive and compete with the biomedical machinery powered by capital and the State. I was an insider in the sense that I was a native of India and a consumer of Ayurveda myself, but at the same time I was an outsider to Kerala; a native of Dakshina Kannada, a district in southern Karnataka that borders Kerala. In some ways, this region is more similar to Kerala than the rest of Karnataka, but the differences far outweighed the similarities in many cultural spheres.

The difference aroused my curiosity. Raw drug shops, a feature that could be seen only in city markets in other parts of the country, dotted Kerala's rural and urban landscape. Uncertified *vaidyans*⁵

⁵ Vaidyan is the Malayalam equivalent for Sanskrit vaidya, meaning doctor. Though this is an umbrella term for a practitioner of any system of medicine including biomedicine, it is typically used to refer to practitioners of indigenous systems of medicine. I use it here and in most of the dissertation to refer to ayurvedic doctors who are informally trained (licensed or unlicensed) in contrast with those who are institutionally trained.

of indigenous medicine and practitioners of *Kalari martial arts*⁶ and *Marma*⁷, continued to practice and struggle against the professionalized mainstream. At the same time, the burgeoning tourist industry had spawned a modern training industry that churned out three to six month diploma holding masseurs and ayurvedic nurses by the dozen. Rapid commodification seemed to hold the potential to alter the culture, and in the process perhaps jeopardize the role of certain actors, enhance the role of certain others. Between all of them, there was one thing common, ayurvedic pharmaceuticals. The consumer, the producer, the collector, all of them were linked directly or indirectly by the role they played in producing these commodities. Studying ayurvedic commodities seemed to be an appropriate technique to capture the dynamics of ayurvedic culture in Kerala. The theoretical inspiration for this methodological approach comes from Appadurai's (1986) "social lives of things". Appadurai recommends a re-orientation in the focal point of discussion on commodification towards the study of "things", that include both concrete commodities and services. He emphasizes the commodity context of things, wherein commodity is just a transient state in the life of things; a thing becomes a commodity in certain social and culturally defined situations. Approaching medicines as things with social lives would eventually lead to the understanding of the contexts that convert them into commodities, and the role of various actors in influencing this process. Though medicine commodities have not been widely studied by anthropologists, anthropology offers a rich background of research on a variety of commodities to fall back on for theoretical inspiration. Commodity studies are replete with examples of loss of identity and integrity of cultural practices when exposed to the forces of commodification. Reinventions and diversions are noted in the studies of *Soukous* music in Congo (White 2000), commodification of hunger foods into luxury commodities in Laos (Van Esterik 2006) and oriental carpets in Turkey (Spooner 1986). Western ideas of authenticity are imposed on non-western commodities (Steiner 1994, Spooner 1986). Trade-mediators are found to play an important role in shaping consumption which in turn influences production. For example, the shaping aesthetic experience and value by an elite group of standard-setters in the art market in New York (Plattner

⁶Kalaripayattu is the martial art tradition of Kerala, whose practitioners are called Kalari practitioners, referred to respectfully as *gurukkal* or *Kalari ashans*.

⁷*Marma* practitioners are those who base their practice on the theory of pressure points. It is also a branch in Ayurveda, and is of central importance in Siddha medical system. *Kalari Marma* practitioners combine the knowledge of both the systems.

2000), construction of authenticity of oriental carpets, an exotic commodity shaped by commercial interests of dealers (Spooner 1986). The paucity of genuine information and the subjectivity of ‘taste’ provide traders immense opportunity for manipulation.

Attention to commodities and commodification has been peripheral in studies on indigenous medicine systems across the world (for example, see Ernst 2002); the focus has been mostly of their marginalization by bio-medicine. In fact, what is commonly portrayed is the juxtaposition between a culturally-embedded indigenous medicine enclosed in a sacred realm and a commodity-centric biomedicine. It is important to recognize at the outset that classical medical systems have been different in their response to commodification compared to non-codified traditions, because they were already exposed to pre-industrial forms of commodification, standardization and institutionalization.

American Anthropologist Charles Leslie is credited for opening up a fresh approach to studying the complex classical medical systems of India and China. His major contribution has been his account of the evolution of ‘modern Ayurveda’ in India, that he portrays as being based in shaped by the religious revivalist ideologies closely associated with the growth of nationalist movements (Leslie 1976, 1992). At the end of his long engagement with the study of Ayurveda in India, he had begun to notice the significance of the manufacturing industry in shaping the destiny of modern Ayurveda. Drawing on observation of three companies representing different corners of the country, Leslie (1989) argued that

ayurvedic and unani drug companies enjoyed a burgeoning market based in the urban middle classes. He pointed out that it was important to pay attention to “the irrational aspects of commercialization and the central role of drug companies in sustaining the revival movement” that “implement radical breaks



***Catering to the insiders: Ayurvedic Pharmaceuticals
National Ayurvedic Industrial Exposition, Coimbatore, 2008***

with many aspects of humoral thinking and practice”. He felt it important “to understand their effect on popular health cultures, and the degree to which they irrationally distort the economy of health care” (Leslie 1989: 31).

However, pharmaceuticals and the manufacturing industry are among the least studied aspects of Ayurveda in social science literature. This is not surprising given that anthropological attention to pharmaceuticalization has been very recent (Bell and Figert 2012). Medical anthropologists had not extended the inquiry of symbolic, cultural logic to pharmaceuticals until the eighties (Whyte et al 2002, Van der Geest et al. 1996, Geest 2006). The few studies done until then were mostly on issues like the use of antibiotics, and almost none dealt with indigenous pharmaceuticals. By 1988, the term *pharmaceutical anthropology* came into vogue, and there were 16 papers on transactions and meanings of medicines in developing countries (Van der Geest and Whyte 1989) covering thirteen different countries in Asia, Africa and Latin America. Nichter and Vuckovic (1994), who studied parts of Asia and America, found medicines to be ‘vehicles of ideology’ capable of not only changing perceptions of health, but also influencing social values and relations.

Even those who study pharmaceuticals rarely include the study of manufacturers or the process of manufacturing. Whyte et al (2002) suggest reasons for this lacunae:

The near non-existence of anthropological fieldwork in the pharmaceutical industry should not come as a surprise. First, there is the reluctance of anthropologists to enter the complex and highly technical world of industrial manufacturing. Most still prefer the relatively simple and conveniently arranged local community to conduct their fieldwork....More important, however, is the refusal by manufacturers to allow social scientists in their midst, most likely because our studies do not serve the interests of the industry. In addition, anthropologists anticipate that refusal and do not even try. Industries are defensive about their commercial aims. ...If the *raison d’être* of the drug industry, profit-making, is so much in conflict with the ideal image of its products, it is indeed to wise to close its doors to inquisitive social scientists who will certainly focus their attention on what the industry is not showing to the outside world (Whyte et al 2002:138-139).

But the phenomenon of commodification has been so central to Ayurveda’s development that anthropologists and sociologists who have studied Ayurveda from various vantage points have provided some glimpses into its workings. The issues Leslie raised have influenced subsequent researchers on Ayurveda (Langford 1995, Zysk 1995, Nichter 1989, Reddy 2002, Nisula 2006, Khan 2006).

Studies have ranged from case studies of physicians (Trawick 1987, Langford 1999) to

ethnographies of pharmaceutical companies (Bright 1998, Banerjee 2002, Bode 2006). The ayurvedic market is seen as predominantly dominated by medicine substances, a process that is termed as 'pharmaceuticalization' (Nichter 1989). In the industrial era, the manufacturers emerge as the most powerful stakeholders with the power to influence the larger culture of ayurvedic practice. Researchers who have specifically focused on the study of ayurvedic pharmaceuticals, have found the production and marketing of ayurvedic medicines to be predominantly driven by commercial logic (Banerjee 2002, Bode 2006).

Meanwhile modern institutionalization and professionalization of Ayurveda was also leading to the homogenization of an otherwise diverse and regionally varied culture of indigenous medical practice. On the one hand, this process brought about a struggle between institutionally qualified practitioners and the traditionally trained practitioners. On the other hand, institutionalization and commodification appeared to be leading to various kinds of homogenization which was taking its toll on local practical knowledge or *metis* as Scott (1998) terms it. Nevertheless, modern production and consumption of medicine continues to link and utilize the traditional knowledge and skills of various actors through a complex commodity chain, despite an increasing reliance on codified ayurvedic texts and certified professionals. Reviewing literature in the field, I found that the usual focus of anthropological studies on Ayurveda were limited to visible foreground processes. I aimed to add to this knowledge by addressing on all the nodes of the ayurvedic commodity chain to get a more nuanced understanding of the effects of commodification on the various actors in terms of knowledge, livelihood and health care.

1.1 Evolution of the research framework

Four months of exploratory pilot study (June-September, 2006) supported by summer research grant from Washington University, provided data and insights that led to the development of research questions and design for the dissertation field work. It also provided preliminary contacts and potential informants for the proposed field work. A research proposal was formulated to further this objective, entitled, "Journey From Plant To Medicine: A Study Of Ayurvedic Commodity Chains In Kerala." The proposal was awarded research grants by the Wenner Gren Foundation for Anthropological Research

(2008-2009) and National Science Foundation Dissertation Improvement Grant (2008-2010). Following research questions were formulated to direct the investigation:

- *What are the roles played by the different actors in the ayurvedic commodity chain in connection to ayurvedic pharmaceuticals? Has there been a substantial transition in knowledge and skill demands and livelihood outcomes over the past decade?*
- *What is the consequence of commodification of herbs and herbal products on local practical knowledge of actors historically involved in the production and consumption of ayurvedic medicines? Does it lead to concentration of intellectual property in a few hands?*
- *How do various stakeholders influence the making and consumption of medicines?*
- *How do new developments in commodification influence the form and delivery of formal (institutionalized) and informal medicine?*

These were the questions I began the study with. But as is common with anthropological research, the fieldwork took me to many unexpected places, requiring me to ask new questions, some of which turned out to be central in shaping the final framework of analysis. Before I go further into the description of the research process, a brief introductory note on Ayurveda is in order.

1.2 Ayurveda: an introductory note

1.2.1 Brief history and current status of Ayurveda in India

Ayurveda is one among the four⁸ officially recognized as Indian Systems of Medicine (ISM). Though it had official recognition, it was only in 1995 that a separate Department (Indian Systems of Medicine and Homeopathy (ISMH) was constituted to represent their interests, under the Ministry of Health and Family Welfare. In 2003, it was renamed Department of Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy, now most commonly known by its acronym, AYUSH.

Literally translated the science of ‘life’ or ‘longevity’, Ayurveda is a classical system of medicine whose origins go back to the period of classics in ancient India. The magico-religious medicine of the Vedic ages (C.1500 BCE) underwent a transformation during early *Upanishadic* era⁹ (C. 800-600 BCE) leading to a series of medical treatises and monographs, of which little evidence is left today. Today the ayurvedic system of medicine locates its origins in the ‘Big Three’ *Samhitas* (compendiums), the *Charaka Samhita* (C. 1st BCE), the *Sushruta Samhita* (C. 500 A.D) and the *Ashtanga Hridaya Samhita* (C.7th century CE). The first specializes in internal medicine and the second in surgery, and the third is

⁸ The other three are *Unani*, *Siddha* and *Sowa-Rigpa*. *Sowa-Rigpa* or *Amchi*, practiced in the States in the Himalayan belt, recently gained official recognition and is hence not part of the acronym of AYUSH.

⁹ Era of *Upanishads*, a kind of literature that followed Vedas (800 BCE-600 BCE) that laid the basis for Indian philosophy, considered the renaissance period for ancient Indian literature, philosophy, science and religion.

a redaction and synthesis of the first two. Ayurveda appears to have attained the status of a professional medicine by the time it was taught at Takshashila University (600 BCE). Buddhist universities played an important role in systematizing Ayurvedic education in the medieval ages, the most important of which was the University of Nalanda (6th to 12th century CE). Ayurveda also had specialized branches of practice applied to animals and plants, namely, *Gaja/Hastyayurveda* (for elephants), *Asvayurveda* (for horses), and *Vrksayurveda* (for trees).

Muslim invasions, beginning sporadically in the 10th century and culminating in Persian rule in the 14th century, were the first important source of transformation in ayurvedic practice. The intermingling of Greco-Arabic medicine and Ayurveda resulted in *Unani*, today recognized as an independent system of Indian medicine. The medieval era also saw the codification of another Indian medical system called *Siddha*, based in Tamil Nadu. Despite foreign invasions, the production of texts in both Sanskrit and regional languages continued unabated, the latest of which was produced in the 18th century. Europeans colonizers since the 15th century were involved in compiling and borrowing from Indian indigenous medicinal knowledge to their pharmacopeia (Kumar 2001). But by 19th century, indigenous medicine had fallen out of favor and gradually lost official status and state patronage. The revival movement associated with nationalism in late 18th and early 19th century succeeded in creating an alternative space for Ayurveda, though biomedicine continued to be the official system of medicine post independence. Ayurveda came under centralized State regulation for the first time in 1970, with the installation of the Central Council of Indian Medicine, as an apex body to regulate the education and certification of ayurvedic practitioners in the country. A uniform curriculum was designed for the entire country and the degree of Ayurvedacharya/Bachelor of Ayurvedic Medicine and Surgery (BAMS) came to be considered the sole qualification for ayurvedic practice. Deadlines were set up for practitioners with traditional training to register, the States were given the flexibility to fix their own timeframe and specifications. Today practitioners with pre-formal institutionalized training are locally referred to as *parampariya vaidyans* (traditional practitioners). Today in India there are 4.5 mn registered practitioners of Ayurveda, and another 1.5 mn unregistered practitioners (Planning Commission of India 2000). A total of 2402 ayurvedic hospitals and 13913 dispensaries are run by the

State. Ayurvedic educational system comprising of 242 medical colleges produces 11225 undergraduates and 991 postgraduates annually.

1.2.2 Ayurveda in Kerala

Kerala, a tropical state in the southern tip of India, saw the world's highest growth rate in tourism over the past decade. Rising global tourist interest has led the state to position Ayurveda as a cornerstone of its tourism campaign. Though foreign tourists are fewer in number than domestic tourists, their spending capacity is high. Moreover, Western tourist demand has conferred a new prestige on Ayurveda. Another globalizing force is the wealthy Keralite diaspora that contributes a quarter of the State Domestic Product (Kannan and Hari 2002); it provides a new clientele and an important medium for the spread of Ayurveda. Consequently “Kerala” has emerged as a brand name for Ayurveda both within and outside the country, developing its own niche in the larger context of India's emergence as a global biomedical tourism hub.

The Kerala State government has a primary health network exclusive to Ayurveda (also for homeopathy) parallel to allopathy. The presence of *Unani* and *Siddha* in Kerala is minor¹⁰. The state's network of 126 ayurvedic hospitals and 898 dispensaries treat around 2 million patients a year. But the government system accounts for only a tenth of the total practitioners, another tenth are employed in the manufacturing sector, the rest are engaged in private practice. There are 16639 registered practitioners of Ayurveda, and an equal number of unregistered traditional practitioners (AYUSH 2011). There are an estimated 4000 private ayurvedic clinics and hospitals (Kerala State Planning Board 2006). There are around 1177 ayurvedic drug manufacturing units with a total turnover of approximately six billion rupees (\$ 120 mn)¹¹. The state has been conservative till recently in granting permission to educational institutions in the private sector and therefore has a limited number, that is, 16 colleges with an annual intake capacity of 680 graduate students and 4 postgraduate colleges with an admission capacity of 88 students.

¹⁰ *Unani* in Kerala has 64 registered practitioners, one dispensary and one manufacturing unit. *Siddha* has 1326 registered practitioners, 3 drug manufacturing units, 2 state run hospitals and 6 state run dispensaries.

¹¹ Rupee to dollar conversions are based on the value \$1= 50 Rs., a crude average of the prevalent exchange rate.

1.2.3 A brief overview of Ayurvedic theory¹²

Ayurveda is a system of health maintenance rather than disease treatment, giving equal importance to preventive and health maintaining practices. Ayurvedic medicine was conceptualized and practiced as eight major clinical subspecialties in addition to numerous adjunctive specialties. These include: 1. Internal Medicine (*Kayachikitsa*) 2. General Surgery (*Shalya Tantra*) 3. Otorhinolaryngology or ENT (*Shalakyā*) 4. Pediatrics and Obstetrics/Gynecology (*Kaumarabhrtya*) 5. Psychiatry (*Bhutavidya*) 6. Toxicology (*Agada Tantra*) 7. Nutrition, Detoxification and Rejuvenation (*Rasayana Tantra*) 8. Fertility and Virility (*Vajikarana*).

Ayurvedic cosmology evolved during the Upanishadic age of intellectual ferment (C. 800-600 BCE), a time during which the six schools of Indian philosophy (*Darshanas*) took shape. It draws its physical and metaphysical views from the school of *Nyaya-Vaisheshika* (a synthesis of the schools of logic and atomism¹³) and dialectics from the school of *Sankhya* (enumeration). Ayurvedic epistemology, is derived from *Sankhya*, is based on three *pramanas* (means of valid knowledge): direct sense perception (*pratyaksha*), inference (*anumana*¹⁴) and advice of the text or wise people (*aptopadesha*). The distinguishing feature of the *Nyaya* school of philosophy is the ‘belief in the utility of analysis’, and ‘reliability of reason’. The *Nyaya-Vaisheshika* is considered ‘realistic’ because it believes in the independent existent of the external world, in other words, inferred through senses and mind but not dependent on them. At the same time it is also ‘pluralistic’ as it holds the ultimate reality as many.

Sankhya postulates a notion of dualistic reality, wherein the cosmic world is derived from two primary principles, *Purusha* (the absolute spirit) and *Prakriti* (the primordial matter). Before creation only the *Purusha* or the Absolute exists. When desire first disrupted the Absolute, the equilibrium in *Prakriti* is disturbed and the whole universe of unlimited permutations and combinations comes into existence. When *Prakriti* became aware of its existence, it evolved into the state of cosmic intelligence/consciousness called *mahat*. This intelligence then develops an atomized form (*tanmatra* form) aware of its individuality and differentiates itself into individual bundles of ego (*aham*). Ego has

¹² Based on Kutumbiah (1962), Svoboda (1992), Wujastyk (1998).

¹³ School of thought that postulates that all objects in the physical universe are reducible to a finite number of atoms.

¹⁴ Three kinds of inferences are described: from cause to effect, effect to cause and inference from similarities.

three qualities: inertia (*tamas*), activity (*rajas*), and equilibrium (*satva*)¹⁵. From the quality of inertia evolve five subtle elements (*tanmatras*), i.e., the five objects of the senses (sound, touch, color, taste and smell). From this are derived gross elements *Panchabhutas*, i.e., “five great elements” (earth, air, fire, wind, ether) which are the basis constituents of the universe. From the quality of activity, evolve the mind (*manas*) and ten senses¹⁶. The phenomenal world is a manifestation of the various combination of these cosmic principles.

It follows from this that the body, or any other object in nature, could be seen as a microcosm constituted of the five primordial elements and different proportions of the three primordial qualities. Though there was a substantial anatomical knowledge, ayurvedic pathology is predominantly based on a functional view of the human body. The body including the mind, is constituted of the five elements, that manifest as a combination of three *doshas* (forces or humors), along with the seven *dhatu*s (tissues) and three *malas* (waste products)¹⁷. The body is constituted by the action of three forces/humors, *Vata*, *Pitta*, and *Kapha*. These are best characterized as dynamic rather than typological categories, that are in charge of circulatory, transformative and maintenance functions, respectively. Ayurvedic pathology recognizes disease as an underlying disturbance of one or more of these forces, manifested by the vitiating effect on the seven body tissues. Ayurvedic etiology is predominantly naturalistic. Charaka Samhita recognizes three causes of disease: 1. excessive, deficient or wrongful use of sense objects; 2. climatic characteristics of heat and cold; and 3. the misuse of intelligence. Sushruta Samhita classifies diseases by etiology as: 1. physical (hereditary, congenital, dosha-vitiation), 2. externally caused (weapons, wild animals) and 3. caused by acts of god or nature (seasonal, providential and natural).

The Ayurvedic diagnostic protocol is of two types: Examination of the patient (*Rogi pariksha*) and examination of the disease (*Roga pariksha*). The ten-fold diagnostic protocol (*Dasha-vidha pariksha*) recommends understanding of patient characteristics with regard to: age (*Vaya*), body constitution (*Prakriti*), pathological state (*Vikriti*), tissue vitality (*Sara*), body conformation

¹⁵ Modern scholars have equated *tamas* to potential energy and *rajas* to kinetic energy.

¹⁶ Five senses of perception: hearing, touch, sight, taste and smell; Five senses of action: organs of speech for communication, hands for all creative action, feet for locomotion, genitals for reproduction and anus for elimination.

¹⁷ An alternative view of the human body based on subtle physiology including *Marma* (pressure points), *Chakras* (energy centers) and *Nadis* (channels) is more popular in the West owing to its popularity in *Yoga* and the *Tantric* school of thought. In Kerala, practitioners of *Marma* give preeminence to this view.

(*Samhanana*), body measurement (*Pramana*), capacity for exercise (*Vyayama shakti*), adaptability (*Satmya*), psychic constitution (*Satva*), and digestive capacity (*Ahara Shakti*). The doctor is expected to elicit these parameters through interrogation (*Prasna*) and using the five senses (*Panchendriya Pariksha*). Additionally an eight-fold examination (*Ashtavidha Pariksha*) is recommended that includes investigation of pulse, tongue, voice, skin, eye, general appearance, urine and stool.

Medicine is one of the four modes of treatment, the other three being cleansing, diet and lifestyle correction. The classificatory system of ayurvedic pharmacology is based on a synthesis of the schools of *atomism* and the school of *logic*, according to which the world is made of “six objects of experience” (See Appendix D.1). Of these the most important in pharmacology are the “qualities” of matter that are perceived by the senses in the form of “tastes”. As matter and body can be reduced to the same five elements, the physician’s skill is in using the three means of valid knowledge in assessing the pathology in terms of these fundamental elements, and using the faculty of taste (*Rasa*) to assess the quality of the materia medica that can help correct the imbalance.

1.2.4 Ayurvedic pharmaceutical commodities

Manufacturing of indigenous medicines is governed by the Drugs and Cosmetics Act (DCA) of 1940 and Drug and Magic Remedies Act (DMR) of 1958. There are two broad categories of ayurvedic medicine commodities, *classical* and *proprietary*. *Classical medicines*¹⁸ are based on officially approved 56 classical texts. Such products do not require registration. They carry the name of the reference text on their labels; a single product composition can vary from text to text. Documented recipes for medicinal formulations number over 100,000 (Balachandran and Govindarajan 2007). *Proprietary medicines* are new formulations that require approval and registration in the relevant regional Drug Controlling Authority. Practitioners and manufactures are allowed the freedom of creating formulations that are typically improvisations or modifications of classical formulations, restricted to the use of the pharmacopeia mentioned in approved texts. Around 1500 classical formulations and 30,000 proprietary ayurvedic formulations are found in the Indian market (Sharma 2008). As at 2011 total of 7699 ayurvedic manufacturing units manufacture ayurvedic medicines worth around ₹100 billion (US \$ 2

¹⁸ These products have been referred to as ‘traditional’ products by some researchers (for example, Bode 2006).

billion) annually.

Another class of medicine commodities that are part of ayurvedic health care are raw drugs, though they do not have a distinctive identity, as they can be used by any system of medicine. Across India, these are predominantly secondary commodities, that is, raw material that manufacturers and practitioners use in making medicines. Hence, shops selling such merchandise are located in specialized market centers and in large cities and towns. In Kerala, given the high prevalence of household involvement in medicine making, the raw drug retail node has been a key node of pre-industrial ayurvedic consumption. Raw drug shop is therefore a ubiquitous feature in both the urban and rural landscape of Kerala.

1.3 A shift in the analytical framework

During the pilot study and much of the fieldwork period I was preoccupied with the various ramifications of industrial commodification, which was based in the framework of a commodity chain - a chain of relations that itself was a product of one century of industrial commodification of Ayurveda. As I gathered more intimate knowledge of the various nodes beginning from medicine collectors to raw drug sellers, manufacturers to practitioners, I began comparing my findings to that of other researchers. It was during this process that analysis took a different turn; the originally intended parameters of analysis began to pale in comparison as issues of greater theoretical salience and practical importance began to emerge. I realized that if I restricted myself to the analytical structure that I began with, I would miss the central story, a story that has either remained unstudied or unnoticed or perhaps ignored as an exception because it does not fall into the expected pattern. What appeared most interesting was *not* that the expected process of centralization had come about, but that, much of what had occurred elsewhere in India during the process of industrialization *had not occurred* in Kerala. I argue that '*what had not occurred*' has shaped the current and perhaps the future pattern of commodification of Ayurveda in the State. If this story were to be told two decades ago, it would have appeared as nothing more than an interesting, but isolated case with limited generalizability. But today this story has a special significance because it is this Kerala model of Ayurveda that eventually turned out to be the motive force behind the new spate of commodification

of Ayurveda both at national and global levels. In order to address this story, during the last phase of the field work, I added new questions, which to a certain extent modified and reoriented the focus of the research study:

- *What are the features of Kerala pattern of industrial commodification of Ayurveda? How is it related to the other facets of ayurvedic practice in Kerala?*
- *How is it similar and how is it different from Ayurveda in rest of the country, and what are the reasons and implications of this difference?*
- *How can the understanding of this difference contribute to commodification theory and inform the study of comparable commodities?*

1.4 Research methodology and sample

The research design involved two components: the first and the central part was ethnographic study of actors at different nodes of the ayurvedic commodity chain. This was aimed at collecting information on the role played by each set of actors, demands on knowledge and skills, relationships of stakeholders with each other, and with the commodities with respect to both historical and ongoing changes in the patterns of production, practice and consumption. The second part of the research design centered around the study of "social lives" (Appadurai 1986) of plants that go into the production of ayurvedic medicine. This aimed at the construction of "commodity careers" of selected plants, i.e., accounts of the changes in states and uses at each stage of their commodity chains. Since both components were complementary and overlapping, data collection was more often than not combined. Biographies of plants provided insight into roles played by and knowledge demand made on actors at each node and changes that have taken place in their roles in the context of industrialized commodification. Understanding of the social lives of plants was especially useful in providing insights into the upstream supply chain and to a certain extent on the nature of household herbal/medicinal knowledge and consumption. However, social lives of individuals plants did not lead to other facets of ayurvedic practice, production and consumption. Ayurvedic medicines are predominantly polyherbal formulations; individual identities of plants are subsumed under the class of raw drugs and are invisible after they enter the factory. Therefore, the study of commodity careers of plants was helpful, but less central than what was proposed prior to fieldwork.

Seven nodes of the ayurvedic commodity chain were identified during the four month pilot

study conducted in the summer of 2006 including: 1. Medicinal plant collectors/farmers 2. Raw drug retail shops 3. Raw drug wholesalers 4. Ayurvedic manufacturers 5. Ayurvedic retail medicine stores 6. Practitioners/clinics/tourist spas/hospitals and 7. Consumers. Detailed attention was paid to actors at all nodes except for raw drug wholesalers and hospitals. Among the rest, greatest importance was given to three set of actors: raw drug shops, practitioners and manufacturers. At each node, semi-structured in-depth interviews and participant observation methods were used to collect data. Field study was conducted for a period of 33 months between March 2008 and Nov 2010. A brief three week field visit was made in February-March 2012.

Index plants and location-specificity of three of the nodes (manufacturing, forest collection and tourism) set the geographical limit within which sample for the other nodes were selected. Raw-drug shops and pharmaceutical agencies were selected from three towns and three villages that were in proximity to the manufacturing and forest collection nodes. Within the region, universal sampling method was used; all practitioners and all retail shops available in these regions were selected for primary visit. Those who were willing to be interviewed were pursued for more in-depth interviews. Raw drug shop keepers in these regions were asked to name the vaidyans in the region, because unlike formally qualified doctors who were visible and accessible in their clinics and hospitals in the town, they practiced from their homes located in interior villages.

Around one-third of the sample of small manufacturers and practitioners were based on contacts made in conference and workshops. Around half the consumer informants were approached through personal contacts and the other half were selected based on references provided by informants at various nodes, mainly raw drug shops and practitioners.

Knowledge demands vary from plant to plant, depending on the part harvested, seasonality, perishability, and nature of processing required. Five index herbs were selected to represent the local commodity chain were: *Brahmi (Bacopa monnieri)*, *Kurunthoti (Sida rhombifolia spp. retusa)*, *Koovalam (Aegle marmelos)*, *Kattupadavalam (Trichosanthes cucumerina/doica/lobata)* and *Njavara (Oriza sativa spp.)*. These were chosen to represent mainly two criteria,

1. Diversity of habitat - forest/commons/cultivation and consequently, diversity of sources i.e., forest collectors/forest cultivation/commons collectors/farmers/raw drug market.

2. Botanical diversity (herb/shrub/tree/creeper/grass) and diversity of plant part used in medicine production (whole herb/shrub root/tree root/fruit).

Of the herbs sourced locally, three were selected as index plants, from among the most commonly used raw drugs in ayurvedic medicine production in the Kerala industry.

- *Koovalam* represents the tree root class of drugs that are among the most endangered and also provides illustration to the practice of acceptable and unacceptable substitution in ayurvedic medicine production.
- *Kurunthoti*, an abundantly available and hardy plant to throws light on issues related to large scale extraction from the commons.
- *Brahmi* represented issues of concern to a highly perishable class of fresh herbs.

Three plants were chosen to represent two distinct and recent phenomena.

- *Kattupadavalam* represents a forest plant that has entered into cultivation recently.
- *Njavara* is a medicinal variety of rice that leads us outside the pharmaceutical commodity chain to the ayurvedic therapy segment. It has entered into a new commodity chain post-tourist commodification, by virtue of its being one of the few star medicinal herbs commonly used in therapeutic massages. Unlike the other four, it is not commonly used as a pharmaceutical ingredient.
- Besides being a common ayurvedic herb, *Brahmi* is distinct from the others by virtue of its individual identity built over its traditional reputation as memory enhancer. Its distinct commodity career helps in providing insights into various newly emerging commodity forms.

Of the 36 co-operative societies under the Kerala Scheduled Caste/Scheduled Tribe¹⁹ Federation (Hereinafter SCST Federation) that hold the monopoly for minor forest produce collection, nine were selected to represent the four branches of the Federation. Further, five of them were selected to represent two of the index plants that were being sourced from the forest commodity chain (*kurunthoti* and *kattupadavalam*). Idukki district was selected as one of the principal field sites to follow up the commodity chain of *kattupadavalam*; the sample in the district included 4 collection societies and 5 collection agents. The total sample in the forest supply chain consisted of 6 community elders and 8 medical practitioners representing 6 of the 35 Scheduled Tribe (ST) communities of Kerala, viz., Muthuvan, Kani, Mannan, Kuruchiyar, Kadar, and Urali.

¹⁹ Scheduled Caste and Tribes are designated communities as per the Constitution of India Article 366 (25), who are protected with policies of positive discrimination as they are considered historically marginalized. While there is some overlap, typically scheduled caste members are untouchable communities within the Hindu fold, whereas Scheduled Tribe members are those who were historically secluded from the mainstream, and mainly lived in endogamous groups in hilly regions and forests.

Two other field sites were selected in Ernakulam and Thrissur (Trichur) districts keeping in mind the manufacturing and trading node. Thrissur district in Central Kerala, considered the cultural capital of the State, has the largest raw drug market and is the hub of ayurvedic manufacturing in Kerala. The adjacent district Ernakulam was selected because it borders Thrissur on one side and Idukki on the other. But also because being the financial capital of Kerala, it is also a vibrant site of ayurvedic manufacturing and wholesale raw drug trade.



The initial plan to do an in-depth study of a small sample of manufacturers, was abandoned in favor of an extensive sample. In terms of turnover size, the sample included six large, seven medium large, six medium, eight small, two mini and six micro level manufacturers, that is a total of 35 manufacturers.²⁰ Not all manufacturers were given equal attention²¹. All five of the largest manufacturers of Kerala were part of the sample. Since two of them were located in Thrissur and one in Idukki, the rest of the industry sample was selected from these two districts and also from Ernakulam district bordering Thrissur (total of 13 from Thrissur, 8 from Ernakulam and 6 from Idukki). Six medium and medium large companies were selected from other districts mainly through contacts made during industrial expositions. Five each of medium large and medium sized companies were selected from the above three districts purposively, to include the most reputed. The intention was to understand the predominant characteristics of successful manufacturers, organizational history, market

²⁰ Large: 300 million (\$6 million) and above; Medium large: 100-300 million (\$20-60 million); Medium: 50-100 million (\$10-20 million); Small: 10-50 million (\$2-10 million); Mini: 1-10 million (0.2 to 2 million); Micro: Below one million.

²¹ Interviews were conducted with MDs and other staff of 22 companies, tier one management and other staff of 7 companies, tier two managerial staff of 4 companies and secretarial staff of 2 medium sized companies. Some were single-session interviews, while some other interviews went over multiple sessions and involved factory tours. Four of the interviews did not involve site visits, as they were conducted with one or two of the managerial staff at the site of industrial expositions.

outlook and product strategy. It was expected that the largest and most reputed in the State would provide a representative big picture of the Kerala manufacturing industry. Attempt was also made to represent variety in focus and organizational history (See Appendix A.1). Small, mini and micro companies were selected through references given by sampled raw drug shops and others through contacts made during visits to the three national ayurvedic industrial expositions held during the period of my field work.²² The Director of the ayurvedic industrial cluster of Kerala, State Ayurvedic Drugs Controller and Drugs Inspectors, General Secretaries of the State and national manufacturers' associations, were other informants who provided insights relevant to the manufacturing node. The industry sample also included a herbal extract industry from Kerala and three non-Kerala ayurvedic manufactures, a small manufacturer from Karnataka, a medium sized company owner from Delhi, and the CEO-owner of one of the top ten companies, based in Maharashtra.

I visited two large and two small raw drug markets, and three fresh herb markets in Kerala.²³ But as this was not a node of focus, the final sample was restricted to one large and one small raw drug wholesaler in Thrissur, one large and one small fresh herb trader in Malappuram district, and a fresh herb trader from Kozhijampara. Smaller traders included one fresh herb agent in Idukki, a farmers' co-operative society and a voluntary organization who are into fresh herb supply. Ten medicinal plant collectors who supplied to these markets or/and to manufacturers were interviewed.

Data for the tourist node was collected through brief single-session interviews with owners or managers of 19 tourist ayurvedic Centers and six therapists. Though no systematic effort was made during sample selection to account for diversity of institutions, analysis showed they represented a variety of stakeholders and were chosen from four of the most important tourist locations of Kerala²⁴. (See Appendix A.5 for stakeholder and regional break up). Data was also collected from eight therapist training institutes of which three were briefly interviewed.

The rest of the sample including raw drug shops, retail ayurvedic agencies, farmers, consumers and practitioners were selected mainly from the districts of Thrissur, Idukki and Ernakulam in locations

²² in Coimbatore (Aug. 2008), Jaipur (Dec. 2008) and Thrissur, Kerala (2009). Each attracted 50-80 manufactures from across the country; the Thrissur exposition was dominated by manufacturers from Kerala.

²³ large markets in Thrissur and Kochi and minor markets in Moovattupuzah and Kottayam, the fresh herb market in Wadakara in North Kerala and Kozhijampara bordering Tamil Nadu, and the Kani tribal market in Trivandrum.

²⁴ Varkala and Kovalam beaches in Trivandrum, Thekkady and Munnar hill resorts, backwaters in Kumarakom, and the historical city of Fort Kochi in Ernakulam

adjacent to sampled manufactures to optimize travel time. A few informants from other districts were drawn from contacts made during visits to forest collection sites in Wayanad, raw drug market and tourist centers in Kottayam, government offices in Trivandrum and manufacturers in Palakkad district. The sample of retail shops included 18 raw drug shops and 15 exclusive pharmaceutical company agencies (See Appendix A.2 for district-wise breakup). Three retail outlets from the neighboring state of Karnataka were included, out of which two were agencies of Kerala manufacturers. Informants also included two wholesale distributors of ayurvedic medicines (one from Thrissur and one from Idukki) and four medical representatives. Practitioner sample included 17 traditional practitioners, 16 degree holding practitioners, 12 practitioners from outside Kerala and nine tribal medical practitioners. As for traditional practitioners, effort was made to include practitioners from various specializations. (See Appendix A. 3 for detailed breakup). Besides clinics, dispensaries and hospitals that overlap with the practitioners' sample, three other hospitals were also part of the sample. Except for one hospital where participant observation was conducted, all other interactions were interview-based.

The sample of farmers included four subsidy farmers, two fresh herb trader-farmers, two home gardeners, two farmers' collectives, two monocroppers, four farmers from Scheduled Tribe (ST) communities, and several practitioners and manufacturers with medicinal farms. The sample was mainly selected from the list of suppliers provided by the State manufacturer Oushadhi and the subsidy farmers list provided by the State Medicinal Plant Board.

A total of fifty consumers were either interviewed or observed during the process of consultation²⁵. Other miscellaneous informants included seven street vendors, two medicinal plant nursery owners, five college teachers and thirteen students (see Appendix A.4). Several government, quasi-government officials and office holders of various professional associations were also part of the sample (see Appendix A.6). Data was also collected from participant observation and interactions at six national/international conferences and various other workshops and meetings (see Appendix A.7).

Note: In some cases, locations and identities of respondents have been protected, either by restricting to initials or by using pseudonyms. Pseudonyms have been coined to maintain the gender and community affiliations of the original name, and they are italicized to distinguish from real names.

²⁵ Selection of consumers was mainly based on encounters in other nodes, i.e., practitioners, retail raw drug and Ayurvedic medicine shops, clinics, hospitals, tourist centers or from chance encounters in other public spaces.

1.5 Central Arguments and the organization of the dissertation

Commodification of Ayurveda in Kerala remained distinct from the rest of India by focusing on ‘classical medicines’, that I refer to as ‘open-source commodities’ because they are based on published classical texts. Open-source production provides for transparency and distributed innovation. Though the way open-source works may be different from domain to domain, there are certain general features that are common to open-source knowledge based production. “Open source production is characterized by transparency, exploitation of peer review and feedback loops, low cost and ease of engagement, and a mixture of formal and informal governance mechanisms built around a shared set of technical goals” (Hope : 2008 15-16).

Unlike ayurvedic industry in the rest of India that focused on proprietary medicines and sidelined the ayurvedic doctor, this model of commodification kept the integrity of ayurvedic practice by maintaining the doctor’s role as the mediator. This culture of integrated practice went on to provide the foundation for the new era of commodification, primarily triggered by western tourist interest. “Panchakarma” (a set of cleansing therapies), a classical tradition of Ayurveda preserved in Kerala has become the selling point of this new era of commodification²⁶. This eventually led to a radical change in the commodification of Ayurveda not only in Kerala, but in rest of India. This shift can be called paradigmatic because the focus of commodification shifted not only from *pharmaceuticals* to *services*, but also from *illness* to *wellness*. At the same time, as envisaged during the pilot study industrialization in Kerala did lead to the loss of knowledge at various nodes of the commodity chain resulting in deskilling and alienation among various actors. Though this is similar to what happened elsewhere in the country, the nature of change and its consequences in Kerala are different because of the intensity of household involvement in medicine making.

The dissertation elaborates each of these arguments in three parts. I will present here a brief description of the main arguments in each part. The theoretical and conceptual background of the argument will be presented in the prologue that precedes each part.

²⁶ However, in practice, what gets sold are preparatory procedures of *Panchakarma* (i.e., *Poorvakarma*) of sweating and oleation including massages. In Kerala, these procedures have an independent standing as therapeutical procedures.

1.5.1 Part 1: Uniqueness of Commodification of Ayurveda in Kerala

Despite the similarities shared with rest of India in the modernization process, the trajectory of ayurvedic commodification in Kerala has remained distinct. I demonstrate this based on a comparison of ethnographic data on the manufacturing sector in Kerala with secondary data and research findings from other parts of India. Unlike the proprietary-product centric business model of ayurvedic industry in rest of India, the Kerala model is based on *open-source knowledge*, in other words, classical medicines based on ayurvedic texts. To apply the framework of commodification theory (Marx 1876), industrialization of ayurvedic medicine production in rest of India led to *accumulation of capital which in turn sought to remove the conventional barriers to commodification*. The ‘classical medicine category’ was a barrier to commodification, because it required the ayurvedic physician to mediate consumption and therefore limited the circulation potential of the medicine commodities.

Manufacturers outside Kerala used two strategies to create *diversion in the path of these commodities* to remove them out of the *commodity context* (Appadurai 1986) of therapeutic Ayurveda. By selling OTC products to consumers and prescription products through allopathic physicians they bypassed the ayurvedic physician and created a radical break with the humoral tradition. The Kerala model of commodification on the other hand was loyal to the classical ayurvedic therapeutic context and kept the ayurvedic practitioner within the commodity chain. Because of the continued involvement of the practitioner, the system of medicine remained integrated; diet-related advices and therapies like Panchakarma, remained part of mainstream ayurvedic practice. Consequently, Kerala did not undergo the kind of *pharmaceuticalization* that characterized Ayurveda in the rest of India. The contrast between Kerala and rest of India in the commodification of pharmaceuticals is brought out in Chapter two.

Closer analysis of the Kerala distinction reveals the role of stakeholder-characteristics in differentially affecting trajectories of commodification. Though historical socio-cultural processes are primarily responsible for producing different stakeholder configurations, in this paper I limit the discussion to a proximal and visible variable, ‘manufacturer characteristic’. Unlike the business-professional led mainstream ayurvedic industry, Kerala industry is dominated by practitioner-

manufacturers, who combine within them the roles of both commodifiers and gatekeepers. Unlike the pharmaceutical-focused mainstream, Kerala manufacturers have been heavily invested in therapeutic services both at personal and institutional levels.

I argue that the agency model of distribution used by Kerala manufacturers played a significant role in making this mode commercially viable. By providing an exclusive channel for the flow of ayurvedic classical commodities combined with consultation services, it helped in maintaining them within the therapeutic context. I further argue that such a model emerged and continued to be viable because of the availability of a wide pool of practitioners who shared a common pharmacopeia. Over generations of practice, they had established a mass consumer base familiar with the classical mode of medicine consumption. The popularity of classical Ayurveda among the masses and the presence of a wide pool of practitioners, I argue, is rooted in the unique sociology of ayurvedic practice in Kerala that has made the classical tradition diffuse across all castes and religions. I identify and briefly discuss two factors as being formative: the social reform movements of the 18th-19th century and the role of pre-colonial and postcolonial state in popularizing and providing patronage to indigenous education. Discussion of the sociology of practice and the contributing historical factors is presented in Chapter 3.

1.5.2 Part 2: Industrial production of medicines: Deskilling and alienation

Though Kerala managed to maintain the overall integrity of ayurvedic practice, industrial commodification did have the expected effect in terms of deskilling actors at various nodes. Those directly affected are practitioners and consumers who were alienated from medicine making. Of the indirectly affected, the most notable are retail raw drug shop sellers, traders and collectors. I use Scott's conceptual framework of *metis* (local practical knowledge), and his discussion of the struggle between *science* and *metis*, to elaborate on the impact of homogenization on innovation and transmission of ayurvedic knowledge. The concepts of alienation (Marx 1876) and deskilling (Stone 2007) provide a framework for analysis of knowledge and skill loss at both foreground and background nodes of the ayurvedic commodity chain.

Prima facie, industrialization appears to take away only a part of doctor's role, that too the lower order skill of medicine-making. However, I argue that, this seemingly lower order knowledge is

vital to the cognitive processes involved in diagnosis and treatment, and is critical in maintaining the link between clinical practice and innovation. The nature of knowledge and consequences of deskilling of the practitioner is the subject of discussion of Chapter four. While alienating the practitioner from medicine-making was an obvious and common impact, what was unique to Kerala was the involvement of people in medicine making. Chapter five presents ethnographic evidence for this involvement and discusses the consequences of deskilling. I argue that given the centrality of the polyherbal decoction in Kerala pharmacopeia, commodification of the decoction is the most important milestone in the industrialization of ayurvedic medicine production in Kerala. Consumers' involvement in medicine making has two important consequences. Firstly, consumers alienated from medicine making can force doctors to switch their prescription habits in favor of industrially produced standardized formulations. Secondly, alienation from medicine-making distances people from the knowledge of medicinal plant resources which has an adverse effect on active and passive conservation of resources in homegardens and commons.

The retail raw drug shop, the key node of ayurvedic consumption in the pre-industrial era is the most affected by industrialized production. Chapter six provides a glimpse into the nature of knowledge involved in transactions at this node and presents a discussion on the consequences of deskilling. The subject of Chapter seven is the upstream supply chain. Increasing distance between manufacturers and raw material makes room for several problems – raw material quality, exploitation of medicinal plant collectors and unsustainable harvesting of resources. The nature and consequences of alienation and deskilling are different for the forest and non-forest supply chains, each of which is described in detail. This chapter also includes a brief discussion on the nascent area of medicinal plant farming. On the whole, though industrial commodification appears to lead to deskilling, vice versa is also true. Deskilling is caused by various macro socio-economic changes unrelated to industrialized production. Such deskilling provides a conducive environment for commodification, making actors at each node vulnerable to further deskilling. I contend that weakening of the skilling process has made the practitioner vulnerable to the deskilling effects of industrialization. The modern revivalist-led homogenization of Ayurveda as a monolithic 'science' led to the institutionalization of education in a

form inimical to the transmission of metis. This led to the gradual replacement of the traditional medical practitioner with institutionally trained practitioners that contributed to switching in prescription habits towards standardized formulations. This in turn affected both the consumers and the raw drug shops. But this is not a one-way cause-effect relationship. Deskilling at the consumer level is also caused by other macro-economic changes. Processes of urbanization and modernization and resultant changes in occupational profiles and cropping pattern also contributed deskilling. At the same time, it should be noted that there is significant resistance to deskilling; attempts are made by actors at all nodes to adapt or to counter the effects of alienation. A few examples for such resistance are discussed in chapters 5 and 6.

1.5.3 Part 3: Dissolving Boundaries: New Wave of Commodification

Post-tourist commodification of Ayurveda focused on the commodification of services, especially those focused on wellness. In Kerala, this led to the expansion of a seasonal wellness therapy (*Karkidaka Sukha Chikitsa*) from an elite practice into a mass commodity. But in the rest of India, that had no history of such practice, Panchakarma centers spread like wild fire, creating new categories of wellness clinics and wellness consumers. In the process, Kerala evolved as a new inspirational core for Ayurveda in India, leading to the emergence of a “Kerala brand” in Ayurveda. The new market built around *Kerala Ayurveda* attracted new non-ayurvedic stakeholders who have created new spaces, new modes and new commodities, unfettered by traditional barriers, stretching the meaning of the term “Ayurvedic” in innovative and often controversial ways. This on one hand had a positive impact by bringing back into focus non-medicinal aspects of Ayurveda that had escaped commodification in the first place. On the other hand, it gave rise to allegations of misinterpretation, overuse and misuse of various Ayurvedic services. The new market created a “diversion” from its regular “path”, and created a new “commodity context” for the selling of therapies outside its traditional context, the doctor’s clinic. Menu and package model of therapy vending have been among the most visible of diversions.

Characteristics considered the inherent strength and foundation of Ayurveda like for instance, the principle of individualization, ironically, were the most amenable for commodification. Preventive and wellness treatments also provide infinite potential for commodification because the hospital is no

more limited by the relatively narrow context of disease and illness. The “holism” of Ayurveda that includes diet, lifestyle modification and cleansing opens up several opportunities for commodification. Chapter 8 is devoted to the discussion of the commodification of services. The chapter includes a brief account of ramifications of tourist selling in Kerala and its effect on the domestic market in other parts of India. New developments in the commodification of ayurvedic medicine commodities are discussed in chapter 9. The discussion covers a gamut of new commodities ranging from form-changes of classical medicines to commodities that co-evolved with the commodification of services.

PART ONE
FOCUSING ON THE DIFFERENCE

PROLOGUE

By the end of his long engagement as an anthropologist researching Ayurveda in India, Charles Leslie had begun to realize the significance of paying attention to the commercial production of indigenous pharmaceuticals and the role of the industry in shaping medical practice.

If I were planning today another conference on the comparative study of humoral traditions in Asia, I would include researchers who have studied the commercial production of traditional Chinese and Kanpo health care products, which are manufactured for regional and international markets. We should compare the history and role of this traditional medicine industry in Asia with allopathic companies. They implement radical breaks with many aspects of humoral thinking and practice in these societies. We need to understand their effect on popular health cultures, and the degree to which they irrationally distort the economy of health care (Leslie 1989: 30).

Though insights into some aspects of commodification was provided by researchers studying various other facets of Ayurveda, only three studies have paid close attention to ayurvedic manufacturers and pharmaceuticals. These are: Banerjee's (2002) study of market strategies of Dabur, the largest ayurvedic company in India, Bode's (2008) study of five large indigenous pharmaceutical firms, and Harilal's (2010) study of ayurvedic manufacturing industry in Kerala.

Banerjee (2002) elaborates on the phenomenon of pharmaceuticalization of Ayurveda based on the analysis of marketing strategies of Dabur from their beginnings in early 1900 until today. She identifies three stages and four strategies in the industrial production of ayurvedic medicines.

The first step was to produce quality medicine in original forms, but with better packaging, a strategy adopted by most late 19th century firms. They basically wanted to make ayurvedic medicines as 'readily available' as allopathic medicines, a *moment of confrontation* with allopathy. This failed mainly because the pharmacopeia was too large, too expensive to make, and not a profitable venture. This was also a time when there was stiff competition from allopathic antiseptics and antidotes.

As a consequence, there was a *moment of withdrawal* in the 1940s-50s, characterized by the admission of the superiority of allopathy and acceptance of the terms of discourse set up by allopathy, which altered the course of modern Ayurveda irrevocably. *The second step was to cast old formulations in modern forms, tablets, capsules, accompanied by focus on cosmetics like hair oil, dental products.* This phase also saw the entry of new firms like Himalaya, which focused on this strategy.

And then followed was a *moment of diversion* in the 60s-70s, which occurred in the ideological background of alternative movement towards holism and return to nature. Ayurvedic industry reworked its profile to target this niche market. *The third step was to make new formulations on the basis of old knowledge of medicinal properties confirmed by modern research, including cosmetics.*

The fourth strategy, yet to take shape, is to create a new category of products, *neutraceuticals.* (Banerjee 2002: 441)

The third strategy shifts the focus from mass market to niche consumers, though it is not clear how this strategy shaped the nature of products. She argues that ayurvedic industry aimed at the moneyed class, departing from its traditional reputation of accessibility to the lower income and rural segment. Consumers did not benefit from economies of scale. Instead, ayurvedic medicines went on to become higher priced than allopathic, due to transition towards mechanization of production. As primary patrons, the higher income group played a key role in transforming medicines by imposing their expectations carried over from their experience with allopathic medicine. A consensus had developed regarding the place of Ayurveda vis-à-vis allopathy. Allopathy was considered the first resort for minor infections, serious diseases like TB and cholera, and for emergency interventions and surgery. Ayurveda was considered good for minor problems such as cough and cold, to maintain health like digestives, and to address chronic problems like asthma and arthritis. With this differentiation achieving the status of common sense logic, ayurvedic medicine got downgraded in the hierarchy. She concludes that Ayurveda was successful in commercializing its marketable aspects at the cost of losing its integrity; it moved away from medicine to FMCG, from drugs to candy. She conjectures that because of the high investment requirement, only commercially successful products like vitality medicines and cosmetics might remain and the rest could fade away.

Though the business has been profitable to Dabur, it is questionable whether this is a success story for Ayurveda...off the shelf ayurvedic medicine has taken place at the expense of the ayurvedic drugs being prepared and dispensed by the vaidyan. As the price of success, Ayurveda had cast itself in the mould of modern medicine. Attempts to commercialize mass-produced ayurvedic medicines affected the internal order of the ayurvedic knowledge system (Banerjee 2002: 464).

Bode's study (2008) is particularly relevant because he approaches the subject from the perspective of the theoretical framework of commodification. He analyses marketing strategies of five of the largest manufacturers, four ayurvedic and one Unani. He finds that the product profile has been reworked to suit a commercial logic, and like Banerjee (2002), he finds the market skewed towards branded products. Branded medicines constitute an average of 90% of the revenue, of which 75% are OTCs and 15% ethical (prescription products). He finds that not only is the market skewed towards branded products as a category, it is skewed towards a handful of superstar products, promoted by extensive ad campaigns. Like Banerjee, Bode notes that the branded products cater to and are

advertised to modern educated urban-middle-class consumers. Profusion of these brands at the expense of cheaper indigenous medicine deprives poorer sections from affordable ayurvedic products.

Against the portrayal of ayurvedic production being dominated by a commercial logic, the distinctiveness of the Kerala industry does get noted but gets only perfunctory mention. Leslie (1989) makes a brief note on Arya Vaidya Sala (AVS), the largest of the Kerala ayurvedic manufacturers, but he uses it as an example to illustrate pharmaceutical firms becoming centers of power, accumulating social capital by running educational institutions. Bode (2008) whose five larger manufacturer sample includes AVS, notes it as being an exception to the commercial logic. He notes that it has no branded products, and consequently the revenue is meager; its profits are diffused across 500 odd products, with three top selling products accounting for 20% of the sales. Harilal (2010) does a fairly comprehensive analysis of the ayurvedic industry in Kerala based on a sample of 9 large and medium large manufacturers. His analysis is primarily quantitative, he assesses the rate of growth and the potential and production efficiency based on various indicators like sales turnover, assets and profit margins, and so on. Noting the preponderance of what he calls 'pure' ayurvedic medicines of AVS he states, "Though ayurveda in Kerala is modernized, it is not commercialized (Harilal 2010: 128)".

Neither Bode nor Harilal take their analysis beyond observing the preponderance of classical medicines. Bode's analysis focused on deriving a common and overarching national trend; examining AVS closely to understand the nature and cause of the exception was evidently outside the scope of his study. Naturally he did not realize it was not just an exception by itself, but a representative of the manufacturing culture in Kerala. If he did, he would have been puzzled to find a model inconsistent with the 'commercial logic' that he had found dominating the indigenous medicine manufacturing industry in the national scene. Harilal on the other hand, perceives Kerala as merely being a little slower on the path of commercialization. "Thus though in many parts of India, commercialization is in full swing, Kerala is still in the final stages of the process of commercializing its sector. Increasing expenditure in packing and advertisement is a sign of increasing commercialization of the Kerala ayurvedic industry (Harilal 2010:128)". Citing the example of Pankajakasthuri Herbals, a proprietary-focused company as reflective of the growing trend, he concludes:

A major concern is the change in product pattern and importance given by most of the firms towards nutraceuticals and cosmetics, and the failure of regulation systems, which may hamper the spread of ayurvedic therapeutic tradition and its clinical value in future. Conscious efforts are, therefore, required to promote the therapeutic aspects of ayurveda as a system (Harilal 2009:51).

I argue that, while it is true that industrial commodification in Kerala does share many similarities with that of rest of India, to focus on them would be to miss the more important story, i.e., *the difference*. The focus of analysis in Part 1 is this difference, the concrete manifestation of which as reflected in the pharmacopeia will be the focus of analysis in Chapter Two. This difference has its roots in the larger climate of ayurvedic practice in Kerala.

A distinct culture of practice

December, 27, 2008. International conference of Ayurveda has been in session for the second day in the campus of the National Institute of Ayurveda, in the city of Jaipur. The evening plenary session has gathered in the main conference hall to discuss the status of ayurvedic education in the country and to propose curricular reforms. Some of the notable people in the field of ayurvedic education, representing the government and the premier national research institutes are on the stage. The audience include conference participants from all over the country and a large collection of students, most of them from the host institution. The key note speaker, decides to wrap up his speech with a piece of advice to the medical students in the audience.

I know that all of you, once you finish your education, will be practicing mostly allopathy. Many of you will end up working in allopathic establishments. But I request you, contribute something to your profession. Practice at least some Ayurveda!

While the larger audience received this message in silence, from one corner of the hall a lone hand pops up in defiance. A middle-aged man gets up and declares,

I am a professor from a government college in Kerala. I would like to tell you that not a single of my student nor any other student from any other institution in Kerala would practice even an iota of allopathy, I can vouch for that.

The speaker accepting the correction, apologized for the generalization, but justified his remark.

I have visited Kerala and I do have a fair idea of your culture of practice, although I admit I did not know it was so genuine all over the State. I am very pleased to hear that. But anyway I was not even thinking of Kerala when I was talking because it is after all a minority exception²⁷. I was basically addressing the students gathered here, most of whom belong to this institution.

²⁷ Kerala has only 16 of the 215 Ayurvedic medical colleges and 15,068 practitioners, a small number compared to large North Indian States (For example, 132,981 in Bihar, 61,240 in Uttar Pradesh, 63,030 in Maharashtra and 47,602 in Madhya Pradesh).

The clarification drew a huge murmur from the audience. Overhearing bits and pieces from the hushed discussion, I gathered that most of the audience, predominantly North Indian, were unaware of the Kerala exception to the rule, and were finding it difficult to digest the piece of information. During the rest of the conference I met a number of North Indian doctors most of whom were unaware of the Kerala ayurvedic practice culture. The typical reaction was of disbelief. How is it possible to practice pure Ayurveda? It was clearly beyond imagination. A practitioner who had gone for advanced training in Kerala enjoyed becoming the center of attention, regaling other practitioners with exotic stories of this remote location that sounded like a pipe dream of an ayurvedic practitioner. It also slowly dawned on me that what I thought was *behind the door practice* had in fact become so run of the mill that it was perfectly acceptable to bring it up in full limelight on the podium of a national forum, in the campus of a premier national institute of Ayurveda.

The term *Ayurallopathy* or *Ayuropathy*, commonly used by practitioners in Kerala (for example, Muarleedharan 2006a) best describes contemporary practice of Ayurveda in most of India. A series of anthropological surveys of indigenous medicine practice in the mid-60s and early 70s were the first to note this trend. An extensive survey of indigenous practitioners represents trends in both North and South India. It showed that over 80% indigenous practitioners in Mysore, and 82% in Punjab prescribed allopathic medicines. Powerful antibiotics labeled in English were often misinterpreted by the indigenous practitioners. In Mysore, 50% of the patients were getting injections of penicillin (Taylor 1976). Burghart (1988) has written in detail on the use of injections by ayurvedic practitioners, and the manner in which penicillin injection was integrated by vaidyans into the ayurvedic framework claiming indigenous origins. A survey of a Tamilnadu town in 1968-69 found that two-thirds of the practitioners mixed various traditions (Montgomery 1976).

The seeds of discontent were sown in the formative years of institutionalization of Ayurveda that began in West Bengal in early 19th century. The Sanskrit College started under British patronage in 1824 in Calcutta was the first to incorporate parallel instruction in allopathy and ayurveda. Macaulay's infamous educational policy of 1835 proved to be the watershed moment for indigenous education, including medicine. The teaching of Ayurveda was abolished from the Sanskrit college. Subsequently

well-funded allopathic medical schools began to attract talented students including heirs of ayurvedic practitioner families. Formal schools across the country had begun to provide ayurvedic students exposure to modern medicine and biology. Students of Ayurveda were attracted towards the more prestigious allopathy and were giving less attention to classical Ayurveda (Gupta 1976). Given this scenario, the expectation was that the indigenous medical systems in India would be eventually phased out (For example, Dunn 1976, Taylor 1976). Though nothing of that sort occurred, colleges of indigenous medicine ended up being “backdoors” to allopathic practice of allopathy, for those who could not get entry into the allopathic system (Leslie 1976, Bode 2008).

But the situation in Kerala does not conform to this pattern. In two other conferences I attended in 2009 and 2010, I heard the same sentiments repeated over and over again. I met many North Indian doctors who were envious about their counterparts in Kerala. It sounded as if they were responding to societal expectations than had willingly perpetuated such a culture of practice.

Practitioners in Kerala talk about a period where the boundaries between allopathy and ayurveda were permeable. Just as Europeans were borrowing from the Indian pharmacopeias, indigenous practitioners were experimenting with European drugs and extracts. In fact, the early ayurvedic degree was conceived as an integrated degree, a generation of practitioners emerged with integrated training. At some point of time, there emerged a gradual consensus among ayurvedic practitioners in Kerala to keep away from allopathic medicines and procedures. It is not clear when and how this took place. There are conflicting discourses as to when and who is responsible for such a strict compartmentalization to evolve. Investigating them and getting at the bottom of this phenomena would be an interesting research project to follow up. Among the others, an important factor to investigate would be the significance of allopathic professionalization practices in influencing ayurvedic practice. The allopathic practitioners’ body in Kerala is known to be particularly vocal in its opposition to cross-over practices. This could be due to the widespread of Ayurveda in Kerala creating a competitive atmosphere between the two professions. Additionally, Kerala does not have a substantial health care access problem, a factor that promotes the advocacy for indigenous practitioners’ rights to practice emergency medicine elsewhere in India.

The consumer culture prevalent in rest of India is characterized by a lack of familiarity with classical Ayurveda leading people to approach Ayurveda with biomedical lenses. It has led to and is further shaped by OTC culture of Ayurveda, where the ayurvedic doctor has very little role to play. Nisula's (2006) study in the city of Mysore in Karnataka State shows how patients impose their expectations on ayurvedic doctors drawn from their experience with allopathic medicine and diagnosis. She found that, but for a section of people historically exposed to Ayurveda, typically from the elite castes, people in general were unfamiliar with Ayurveda. People's knowledge of Ayurvedic medicines was limited to one or two products of leading companies, which she finds contradictory with Trawick's (1992) finding of the widespread popular knowledge of basic Ayurvedic concepts (in South India).

Many of the non-Keralite doctors I spoke to expressed unhappiness about being relegated to the margins. One said he would have to shut shop if they were to practice pure Ayurveda. But they also mentioned of a minority of "pure Ayurveda" practitioners who catered to a discriminating audience from among the elite. Less educated masses who had little historical knowledge of Ayurveda were said to be attracted towards the prestigious allopathy. A particularly candid practitioner in Southern Karnataka, *Dr. Shastri*, told me that people preferred to come to him even for allopathic medicines because they found allopathic doctors to be intimidating and dismissive of their preferences. Unlike allopathic doctors he was open to patients negotiating diagnosis and prescriptions. Though initially he was against many popular "superstitions" (for example, tying a talisman), he soon found it was beneficial for his practice to let them stick to their beliefs. He spoke of the existence of a small set of 'pure' practitioners in the region, listing a couple of names of such doctors in neighboring towns. Such practice, he said "is only possible if you are treating upper class and educated, who are usually discerning, and are by tradition familiar with Ayurveda".

The consumer culture in Kerala is different. Though allopathy is the official and the dominant system of medicine, Ayurveda and homeopathy have their own niches. By and large, patients tend to choose each system of medicine for specific reasons, based on their historic experience of efficacy. Cross-over practice is considered quackery simply because of people's familiarity with each system that leads them to have system-specific expectations. Besides this, unlike in rest of India, Ayurvedic

practice and consumption in Kerala cut across all socio-economic barriers. None of the interviewed Ayurvedic practitioners in Kerala found distinctness in patient profiles in terms of education, class, caste, religion, or region. What was special about Kerala? After all, it was the regions skirting the Himalayan belt and the Gangetic plain in the North that were the ancient centers of codification of the formal ayurvedic system of medicine. How did the southernmost state of Kerala become a stronghold of this medical tradition? In chapter 3 I present ethnographic evidence on practitioner landscape of Kerala along with a brief historical analysis that throws some light on the distinctness of the ayurvedic culture in Kerala.

CH 2 OPEN-SOURCE COMMODITIES

Things resist the process of commodification either owing to inherent physical limitations or due to a variety of formal and informal socio-cultural barriers. Unlike art and fashion commodities that are a common focus of ethnographic research, medicine is characterized by specific need-driven consumption, arising out of circumstances of an illness condition. This limits its consumption to a narrow and limited context. The process of 'commodification' is nothing but extension of the commodity form to new spheres. Kloppenburg (2004) points out that capitalism constantly pushes against the barriers posed by the commodity in order to expand it to new commodity spheres, a process termed by Marx (1876) as 'primitive accumulation'. In the context of capitalist extension into farming, Kloppenburg shows how the *seed* was turned into a commodity by breaking existing barriers, a process facilitated by advances in science and technology. The biological barrier of its inherent replicability was broken with hybrid technology; the institutional barriers of public sector breeding was broken through political strategies that included policy making.

Medicine, being more in the expert realm than farming, is even more susceptible to primitive accumulation through advances in science and technology. Biomedical pharmaceutical manufacturers use various strategies to lower both technical and social barriers to expand the commodity context. One way is attempt at extension of medical jurisdiction or expansion of medical boundaries, commonly referred to as 'medicalization' (Conrad and Leiter 2004). This is often done in by redefining categories of health and disease either by narrowing the definition of health so that normal experiences get labeled as pathologic or by expanding the definition of disease (Woloshin and Schwartz 2006). Pharmaceutical industry is considered the prime stakeholder that attempts to influence this process, what Moynihan and Henry (2006) term 'disease mongering'.

But classical medical systems are inherently less vulnerable to commodification because the knowledge that goes into the making of medicines is not entirely produced and owned by centralized institutions. There is a large component of knowledge that can be considered 'open-source', that is knowledge based in documents that are open to all for use and experimentation. Though biomedicine also derives much from open-source knowledge, the nature of the commodity and the political

economy of the system is such that the products tend to be inherently conducive to intellectual property ownership. Certain inherent features of ayurvedic classical medicines make them less amenable to 'primitive accumulation' (Section 2.1). Firstly, being *open-source* there is no scope for intellectual property exclusivity. Secondly, *the humoral context* limits their circulation to doctor mediated ayurvedic contexts.

In most commodities, traders, markets and middlemen play an important role in the fashioning of taste and creating demand (Appelbaum 2005). But the peculiarity of the medicine commodity is that its consumption is mediated by an expert, the doctor, whose mediation is mandatory for prescription products. Unlike standard setters of luxury commodities, doctor mediators are in charge of commodities meant for solving a practical problem that is often life-critical. The biggest barriers for commodification of pharmaceutical commodities or service in any system of medicine is therefore the doctor. As long as the doctors are rooted strongly in practitioner ethos, they can be a serious barrier for pharmaceutical producers. Paradoxically, they also hold the potential to become the most conducive vehicles for medicine commodities. If capital has to get more hold on medicine, it has to either circumvent or co-opt this barrier. Ayurvedic industry in rest of India broke the barriers of the classical commodity to expand its market and make it more profitable using two strategies. First was to target the consumer by focusing on OTC products both by selling of traditional OTCs and diversion of classical products to OTC segments. This is also a common strategy employed in the biomedical pharmaceutical market (Cohen et al 2004). Second was to target proprietary therapeutic products, referred to as 'ethical products' using the allopathic doctor as the mediator. Strategies used by large scale ayurvedic manufacturers are analyzed in detail with the help of secondary data in Section 2.3. To use Appadurai's (1986) conceptual framework, the former strategy can be called a 'diversion' from the established path, whereas the latter strategy is an attempt to "enclave" open-source products as proprietary. Both these strategies sidelined the ayurvedic doctor as the expert mediator and diverted ayurvedic products out of their humoral context.

In direct contrast with the proprietary-medicine focus of ayurvedic industry in rest of India, manufacturing industry in Kerala has maintained a distinct culture of commodification surrounding

“open-source” commodities, i.e., classical medicines. Section 2.4.1 brings evidence from field work to substantiate. Section 2.4.2 shows how proprietary focused manufacturers who diverted from this trend were also heavily invested in the classical market. In Section 2.4.3, I briefly point out changing trends in the Kerala Ayurveda market, proliferation of blockbuster OTC products and changing consumer preferences to palatable and convenient products.

In section 2.5 I question the representativeness of turnover as an index for classical medicine consumption. In Section 2.6 I suggest that Kerala ayurvedic manufacturers foray in new segments like cosmetics can be considered more as a ‘diversification’ than ‘diversion’. I argue that neither OTCs nor cosmetics have the potential to displace classical medicines and that the greatest threat is posed by the ethical/prescription product segment. In Section 2.7 I suggest that though the status of classical medicine may appear pale amidst the clamor of new commodities, a potential of revival cannot be ruled out. Proliferation of “brand Kerala” across the country and expansion in the therapy segment in the post-tourist era could be contributing factors.

In contrast with rest of India, in Kerala ayurvedic classical products are sold through a network of exclusive pharmaceutical agencies most of which are equipped with doctors. Section 2.9 provides a brief ethnographic description of the ayurvedic retail segment in three locations in Kerala. Section 2.9.1 provides a break up of OTC consumption in the ayurvedic agencies. In Section 2.9.2, I argue that the agency distribution model is indispensable for making classical product marketing a viable proposition. In section 2.10, I argue that ayurvedic manufacturing in Kerala remains distinct because it is rooted in practitioner ethos. The continued involvement of proprietor-managers of ayurvedic companies in clinical practice at both personal and institutional levels makes them natural stakeholders in therapeutic Ayurveda in contrast to manufacturers outside Kerala whose identity is limited to being sellers of ayurvedic pharmaceutical commodities.

2.1 Classical ayurvedic medicine: a barrier to commodification

2.1.1 The open-source barrier

Classical medicines can be best characterized as ‘open-source commodities’ that are based on the collective knowledge of the community expressed in various classical texts. In many respects they are similar to biomedical generics²⁸. Technically, they are based on formulations provided in the 56 texts approved by the 1940 Drugs and Cosmetics Act, the legislation that governs manufacturing and distribution of medicines. But practically, in Kerala, they also include formulations based in popular oral traditional knowledge or regional texts that do not figure in the official list.²⁹ Manufacturers have no choice but to register such medicines as proprietary.

Classical medicines have inherent features that make them recalcitrant to commodification beyond simple scaling up of production. Both medical formulations and categories of diseases are derived from an already existing historical textual framework, neither of them shaped by market forces. As will be discussed in detail in Part 2, ayurvedic knowledge production is historically decentralized. Unlike biomedicine, products and information do not flow from laboratories to practitioners. Also because they are open-source, manufacturers have no product exclusivity, and this works advantageous to customers. Accessibility is high; consumers are free to pick a brand of their choice, and competition between manufacturers keeps prices in check.

2.1.2 The humoral barrier

Classical products pose significant barrier to unlimited commodification because they are embedded in a humoral context. The primary target consumers are ayurvedic physicians who acts as expert mediators in their end consumption. These medicines are not only unintelligible to common people, in their original form they remain outside the purview of practitioners of other medical systems. The formulations are invariably polyherbal, containing an average of 10-30 herbs, some of them going above 100. The combinations are based on a complex ayurvedic pharmacological logic (See Section 5.5). Compared to biomedicine that defines and measures diseases by concrete parameters and treats

²⁸ The term generic is often used to refer to classical products, but Bode (2008) points out it is incorrect because the term suggests uniformity, while Ayurvedic compositions vary. I prefer to avoid the term because generics in biomedicine are products that move out of the patent regime, which is not so in Ayurveda.

²⁹ Some popular texts that are not part of the official list include Chikitsamanjari, Yogamritham, Vaidyamritham and Jyotsnika.

with one or two molecules, Ayurveda looks at disease as a complex of symptoms that have systemic and individually variable causes. Hence, the treatment protocol is complex and unpredictable. For instance, classical Ayurveda recognizes 20 types of diabetes, each of which demands a different protocol (Agnivesh 2008). Though most practitioners might depend on the blood sugar count for diagnosis, treatment prescribed varies depending on their diagnosis of humoral factors involved. Due to this complexity, the average patient has no clue as to the action of a particular medicine and doctors do not go out of their way to explain unless they find the patient curious or knowledgeable, not different from biomedical practice. However, over long term use, patients do associate certain medicines with certain conditions, a knowledge that they use to self-medicate.

The names of ayurvedic classical poly-herbal formulations are not designed for lay people. They typically begin with the name of the medicinal herb which is considered the primary ingredient (E.g., in *Patoladi* decoction, where the herb *patola* is primary and the *adi* suffix means “and so on”) or by the names of groups of drugs (*Dashamoolarishtam*, vine of ten-roots, a class of drugs), or after the scholar-sage who is the formulator

(*Agastyarasayanam* after sage *Agastya*). Very rarely do medicine names refer directly to a disease. For example, though many regular users may be aware that the ayurvedic decoction *Nishakathakadi*, is used for diabetic treatment, there is nothing in its name to indicate that. On the other hand, almost every proprietary product begins with the name of



Vaidyan-owner of an ayurvedic classical medicine agency

the disease condition, either the English name Dia, (E.g. *Diarid*, *Diabecon*) or with the Sanskrit word *Madhumeha* or *Prameha* (for example, *Pramehoushadhi*). Like biomedicine, these medicines are disease-centric than patient-centric and are therefore amenable to self-prescription.

The ingredient list on the classical product is aimed at physicians rather than the end user. Each herb is aimed at a specific pharmacological function, the significance of which only a physician

would be able to comprehend. Consumers are unlikely to buy a product because it contains a particular herb or set of herbs. Many proprietary drugs on the other hand aim at 'star herbs' as a selling point, cashing on people's familiarity with herbs. For example, one of the best selling proprietary medicines in Kerala is a cough syrup based on the sacred herb *tulasi*, which is also a commonly known home remedy used to treat coughs and colds. Another good example is the commodification of the index herb *brahmi*'s popular image, of being a memory enhancer (See Section 9.5).

2.1.3 Commodifiable features of classical medicine

Though classical medicines are resistant to some facets of commodification, they are susceptible to two of the tactics regularly applied to push medicine consumption: over-emphasis on medicines in comparison to non-medicine methods of treatment and over-prescription (prescribing excessive number of medicines). Both of these are probable, when a practitioner profits from the sale of medicines. Though most ayurvedic doctors working in agencies are paid on a retainership basis, it is common for the agency owners to give additional commission on medicine sales. Though not a common practice, one manufacturer known for their aggressive marketing practices was reportedly providing incentives to doctors in the form of providing "one medicine free for one sold". It is difficult to investigate the extent of such practices without a detailed study of prescription patterns. Based on observations of clinical encounters and conversations with consumers in Kerala, I conjecture that three factors act as a check to such practices.

1. Peoples' traditional familiarity with treatment process provides a check against over prescription.

In Kerala, it is common to hear complaints regarding commercial mentality of doctors over-prescription of laboratory tests, allopathic medicines and surgical procedures. This concern extends to practitioners of other systems. By habitual consumption people tend to have an estimate how much a treatment episode should cost. For example, *Sajikumar*, a Malayalee resident of Mumbai went to the agency of a reputed Kerala manufacturer to consult a doctor for his persisting cold. He was prescribed a course of medicine that cost him ₹ 500 (\$10), way beyond his estimated cost. Though the money was not a drain on his upper middle class pocket, he felt so upset on being taken for a ride that he swore he would never visit that agency again. A doctor who makes it a practice of overprescribing is in danger of losing

customers in the long run. An average customer may not be able to discern this, but a few informed customers are sufficient to spread the word. Raw drug shop dealers and experienced retail ayurvedic shop keepers can recognize anomalies in practice and pass on their observations to regular customers.

Here is an example from the field to illustrate.

A rural middle class patient went to buy medicines from a raw drug shop with the local government ayurvedic doctor's prescription which listed three classical decoctions and one proprietary medicine. The raw drug shop keeper who knew her well, made an oblique comment on the increasing fashion of prescribing expensive proprietary medicines, stating that he did not prefer to stock such medicines. "Customers who come to me typically cannot afford such pricey medicines" he said. The patient got the message. She decided to stick to the classical protocol and ignore the proprietary medicine³⁰.

2. *Ayurvedic doctors who have a traditionalist service ethic opposed to commercialization provide a standard of comparison for the consumers.* As patients in Kerala are prone to cross-consultation they are highly likely to compare doctors on different parameters including expenses.

Sarala, a Malayalee working woman who lives in Mumbai had consulted several doctors in Kerala for a complicated health problem. She had plenty to say about each experience, both ayurvedic and biomedical. On one extreme was a traditional vaidyan family owned hospital in her native place in Thrissur that made her undergo "unnecessary" therapies. On the other extreme was an average ayurvedic doctor in her town who strictly told her he could treat her only if she could come in every 4th day to give feedback so he could tweak the medicines. Since this was not practically feasible for her, she consulted another reputed traditional family elsewhere in Kerala, which despite its 'staunchness' and 'non-commercial' approach was open to remote treatment.

Sarala had developed her own critique of the medical system, both allopathic and ayurvedic, especially about who was money-minded and who was not. Over a life time, patients accumulate this wisdom not only from personal experiences but also from socially acquired knowledge.

3. *Doctors who have commercial inclinations are likely to focus on more lucrative options, propriety medicine prescription or/and over-prescription of services (see Section 8.10).*

2.2 Commodification of Ayurveda in rest of India: Breaking barriers

As manufacturers evolved from traditional vaidyan families to large business houses, controlled more by business interests than professional ethos, they began to be disinterested in low-margin classical medicines. Some of the major ayurvedic manufacturers were associated with the manufacture of allopathic medicines from their early days. They brought their experiences with allopathic

³⁰ She did not tell this to the doctor, as it is a common practice for patients to ignore one or two medicines that did not confirm to their expectations.

proprietary products and expectation of high profit margins to the ayurvedic market. Two different strategies emerged that enabled them to break the biggest barrier that classical medicines posed to commodification - the ayurvedic doctor. To use Appadurai's (1986) concept, diversions were created from established paths of medicine commodities to expand their market.

1. To focus on OTC products targeting segments of popular demand. These products could be sold to consumers without the barrier of the physician.
2. Targeting prescription products to the allopathic physician circumventing the ayurvedic physician.

The account here is based on secondary sources like brochures, published company financial accounts, company websites, business reports in the media, and press releases.

2.2.1 OTC product focus

In Ayurveda, there is no official demarcation between OTC and prescription products; categorization is left to the discretion of the individual manufacturer. It was Dabur which took the initiative in developing the ayurvedic OTC segment. The founder's son, a business graduate of Harvard, is credited with the new business strategy that shifted its original classical focus to OTC products. The OTC segment that includes nine products with annual turnover of a billion rupee (\$20 mn) each, brought in 80% of Dabur's ₹ 20 billion (\$40 mn) revenue in 2007. The marketing of Dabur is now done through a gigantic network of 50 C & F agents, 5000 distributors and 2.8 mn retail outlets spread across India (Dabur 2010). Distribution of OTCs 'diverted' from its original 'path' (Appadurai 1986). The retail outlets that sell these medicines range from large biomedical stores to tiny general stores, from supermarkets to *paan-beeda* (mouth-freshener cum digestive) stalls. Zandu Pharmaceuticals followed suit. The company is now most known to Indians by its flagship product, *Zandu Balm*³¹, a pain balm. From just 70 odd distributors in 1976, Zandu has grown to 1500 distributors supplying through over one million retail outlets across India. The turnover of the company touched ₹ 1.5 billion (\$30 mn) in 2008, with OTC products accounting to 90% of the turnover; 4-5 OTC products contribute to 60% of its total sales in the year 2003 (Financial Express 2003). Baidyanath, a company from Eastern India also followed this model marketing its OTC products through 10,000 distributors and over 100,000 retail outlets in

³¹ With 25% of market share in the pain balm segment, the product is so popular that it has become synonymous to pain balm. In Sep. 2010 the name of the product was used in a figurative sense in a Bollywood chartbuster, leading to legal action from the company for infringement of trademark, that was rescinded later after the company realized its publicity value.

addition to 3500 odd exclusive showrooms (Baidyanath 2012).

The OTC class of products can be classified into five types.

1. Traditional OTC segment: Most ayurvedic OTC products are those they naturally belong in that class; there is no product diversion or breaking of traditional barriers. Common categories are digestives, carminatives, pain balms, topical applications for skin problems, and expectorants.

2. FMC(H)G (Fast moving consumer/health goods) segment: A new trend emerged in late 90s when all OTC focusing companies expanded their range to include FMCG, comprising mainly of ayurvedic cosmetics like soaps, toothpastes, hair conditioners, skin creams and a few common medicine products like digestives, cough and cold relievers, oral health and baby care products. This segment grew large enough to be newly designated as FMHG (fast moving health goods). The trend setter in the segment is again Dabur, the 4th largest FMCG manufacturer in India. Himalaya entered the OTC-FMHG market only in 1999, with a launch of its 'Personal Care' range. On the occasion of the release the CEO pointed out that while for medical problems consumers prefer quick-relief to Ayurveda which is "perceived to be long drawn out cure", "in the FMHG and Personal Care segment..is a much greater acceptance of ayurvedic products" (Business India 2004). Baidyanath made its foray into the FMCG industry in 2002 with its new subsidiary (Ayurvedanta Pvt. Ltd.), (Chatterjee 2002). Ethical product-focused Charak Pharma too entered the OTC segment in 2000, after forging a joint venture with Nicholas Piramal, a biomedical pharmaceutical company (Jagdale 2007).

3. Diverted classical products: Some classical products are marketed as OTC, an example of a 'diversion'. For example, though classical, *Chyawanaprash*, the largest selling classical ayurvedic medicine, is heavily advertized to consumers as a health supplement tonic. Dabur which popularized the product accounts for over 65% of the product's market share (Dabur 2010). Most large manufacturers except those in Kerala have followed in the footsteps of Dabur. From the perspective of classical tradition, selling a classical prescription medicine as OTC, even if it is traditionally considered a tonic, is unacceptable. Manufacturers outside Kerala conveniently overlook this distinction in the desire for expanding the market. Over time, such diversions from classical to OTC appear to have achieved a status of common sense logic. Take for example, the statement made by the proprietor-MD

of Baidyanath in a recent television interview. When asked if it was appropriate to self-medicate, the MD said nonchalantly “In Ayurveda you can *completely* self medicate. Just don’t overdo it, but you can *completely* self-medicate”. He lauded the popular use of *Chyawanaprash*, and went on to add, “certain fermented preparations like *Arjunarishta* are excellent heart tonics”. He said it was safe to self-medicate “because ayurvedic medicines have no side effects.” (NDTV 2010). The “no-side effect status” of ayurvedic medicines has achieved a level of convenient common sense among manufacturers and sellers of ayurvedic medicine.

4. New segments of consumption created: As discussed earlier, classical medicines do not yield for easy commodification because the categories are based in a therapeutic context uninfluenced by commodity pressures. Branded commodities provide the flexibility to create new categories. The discussion in Chapter 9 will show how non-traditional stakeholders use this flexibility to create new segments, that include memory enhancers, aphrodisiacs, anti-obesity and anti-stress medications.

5. Commodifying single herb identities: Himalaya initiated another trend, of selling single herb capsules, which perhaps evolved out of their focus on global market. Beginning with 12 herbs in 2002, the company now makes 27 single herb capsules of herbs like Tulasi and Neem. Of late, many manufacturers have begun to imitate the trend. Only one of the big five manufacturers of Kerala, (Nagarjuna Herbal Concentrates Ltd.) sports single herb products that find mention only in its export portfolio. Such products usually ride on the prevalent popular knowledge of herbs and their medicinal properties - *brahmi* for enhancing memory, ginger as a digestive, garlic as hypolipidemic, *Tulsi* as an antioxidant, *Asvagandha* to promote vitality, and so on. The others are lesser known but potent medicines that target high-prevalence disease categories, for example, *Arjuna* as cardiac support.

2.2.2 Ethical/Prescription product focus

Humoral diagnostic thinking of the ayurvedic physician was a barrier to selling products by biomedical disease categories. Himalaya Drug Company pioneered in breaking this barrier in another innovative way, by focusing on prescription products at the biomedical market, a strategy that Bode (2008) terms “biomedical enclaving”. It was a German consultant who turned the focus of the company towards allopathic physicians, in the mid-60s. It made market sense to target a large and lucrative

market that drew crowds rather than depend on a effeminate ayurvedic system. One of Himalaya's early prescription products launched in 1955, a hepato-protective syrup known as Liv 52 went on to become a blockbuster drug, featuring among the top 15 Pharma products (including biomedical). The turnover of Liv-52 as reported in July 2010 was ₹ 1.2 billion (\$24 mn), higher than the total turnover of the largest manufacturer of Kerala. Today Himalaya has a pharmaceutical range of 40 products mainly aimed at biomedical physicians (Himalaya 2012).



Himalaya's eye-catching stall at an ayurvedic industrial exposition

OTC-focused companies like Dabur and Zandu are not highly invested in the prescription product segment³². Large companies with a strong prescription product focus are Charak Pharma (estb. 1947, turnover: \$22 million in 2006) and SDL (Estb. 1853, turnover: \$20 million in 2005). Charak's 99% sales is from the prescription segment (1% from OTC)³³. In a media interview, the MD of Charak said,

Sixty years ago, information related to ayurveda was available in a generic form.... Initially we had to work hard to change the identity of ayurvedic medicines, which were tagged as a crude form of medicines. However, we managed to turn them into an acceptable form having a scientific base (Jagdale 2007).

Despite being strongly rooted in the ethos of a vaidyan family, SDL's product strategy of the company is not different from the other large manufacturers. Though the company launched its ethical segment in 1975, it is only after forging their joint venture with Nicholas Piramal that there was a serious shift in focus. Because "the needs of the consumer changed from the traditional products to branded products... Ethical marketing became the forte of the company." Later in 1998 it spun off its ethical division as a separate company.³⁴

³² Dabur's attention to this market is recent, with the establishment of Dabur Ayurvedic Specialties in 1995. The division has only 9 medicines that brings in 15% of the turnover. The ethical division of Zandu started in 1978 nets in 10% of the sales. The highest selling ethical drug categories are arthritis, gynecological problems and nervous disorders.

³³ This includes 42 products sold to allopathic doctors through 500 medical representatives, 1500 stockists and 100,000 chemists. Besides general physicians, their main catchment comes from gynecologists and GE specialists (IIFL 2004).

³⁴ Shree Dhootapapeshwar India Limited, e-brochure. www.sdlindia.com

2.2.3 Classical segment

Baidyanath, a ₹ 350 mn (\$7 mn) turnover company based in Calcutta, founded in 1917 by an ayurvedic vaidyan, is perhaps the single large manufacturer outside Kerala who has close links to classical Ayurveda. Though their turnover comes mainly from OTC products, they have a large range of 700 products most of which are classical (NDTV 2010). But for Himalaya and Maharishi, other manufacturers maintained their core range of classical products³⁵, though the share in turnover is insignificant, that is less than 10%. In 2008, Dabur's ayurvedic division with 350 classical products brought only 7% of the total revenue, so negligible that it is almost equal to their revenue from a single blockbuster OTC product. The only two classical products of Himalaya are *Chyawanaprash* and *Triphala* that are as good as OTC outside the Kerala market. Some of their prescription products are based on classical (for example, *Geriforte*, a geriatric rejuvenative based on *Chyawanaprash*), but its classical identity plays no role in the marketing of the product.

2.2.4 Global focus

Though Himalaya has a considerable global focus and orientation, the pioneer in the field is MAPI (Maharishi Ayurveda Products International), for whom the primary market is the western market. Export market accounts for 50-60% of their 2 billion rupee turnover. MAPI is the pharmaceutical wing of the organization founded by Maharishi Mahesh Yogi, founder of the Transcendental Meditation movement in 1985. He created an almost parallel version of Ayurveda that came to be known as *Maharishi Ayur-Ved*, and was instrumental in popularizing Ayurveda in the West. Jeannotat (2008) calls it the first attempt at globalization of Ayurveda. Naturally, the product portfolio had to be modified. Firstly, medicines had to be packaged as herbal supplements (for example, BP support, cardio-balance). Secondly, they had to fit into categories that western consumers were more tuned to, like herbal teas and cosmetics. Some of their best selling products are, *Deep Rest*, *Blissful sleep*, *Stress free mind*. Another significant departure is that the formulations sold in the West include local non-Indian herbs.

³⁵ Zandu makes around 300 classical products, SDL makes around 130, Charak has a narrow range of 80 products.

2.2.5 Ayurvedic cosmetics

A few large cosmetic companies like Emami and Aimil are known for their historic focus on herbal commodities. Their ayurvedic connection is too tenuous to designate them as ayurvedic manufacturers. Until the recently acquired international prestige of brand 'Ayurveda', very few cosmetic manufacturers targeted the ayurvedic market. Products in the ayurvedic segment were limited to a few famous products like a skin cream (*Vicco turmeric ayurvedic cream*) and a toothpaste (*Dabur Lal Dant Manjan*). Several small companies were locally marketing traditional tooth care powders and hair oils, though they were rarely marketed as 'Ayurvedic'. Kerala was the only State that had an Ayurvedic soap segment initiated and dominated by *Chandrika* since 1940. In the past decade, the rising prestige of Ayurveda has caused many cosmetic manufacturers to label their products *Ayurvedic* (for example, Shahnaz Herbals). Historically, registration as *Ayurvedic proprietary medicine* was a strategy used for getting into a lower tax bracket (4% instead of the regular 11% on cosmetics). Of late, however the cosmetics trend has caught on with most of the large ayurvedic manufacturers³⁶.

2.3 Commodifying without breaking barriers: Manufacturers from Kerala

In complete contrast to the proprietary-medicine focused ayurvedic industry in other parts of India, manufacturers in Kerala have been heavily dependent on the classical market for their bread and butter. The 1.3 billion rupee (\$20 mn) annual turnover (2007-8) of Arya Vaidya Sala (AVS) from Kerala (one of the top ten, the largest in South India), is spread over 550 classical products. For more than a century, the company had no proprietary product. The next four companies from Kerala (annual turnover of ₹ 300-500 mn/\$6-10 mn) are also classical-focused.

- Vaidyaratnam Oushadhashala has a narrow range of around 20 proprietary products. Around 400 classical products constitute 80-85% of the market share.
- Arya Vaidya Pharmacy (AVP) in Coimbatore derives around 80% of their revenue from 450 classical medicines, despite a repertoire of 50 proprietary medicines.
- *Oushadhi*, the state-owned pharmacy that mainly supplies to the government system makes around 400 classical medicines that contribute to 90% of its turnover.
- Nagarjuna Herbal Concentrates Ltd. (here onwards Nagarjuna) established in 1999, stands apart from the others. Started by entrepreneurs from a non-ayurvedic background, it has a corporate identity and a local reputation for relative aggressiveness to marketing. Despite this, 75% of their turnover comes from around 350 classical medicines, 15% from 35 ethical/prescription products and 10% from 18 OTC products.

³⁶ Himalaya launched *Ayurvedic Concepts*, a range of personal care products in 1999 that grew to account for 40% of sales within 3 years (Himalaya 2012). In 2002, Baidyanath acquired Puma, an export company, to enter the skin and hair care segment (Chatterjee 2002). SDL entered the health care product market with its product range *Aashwamedh*, to market single herb tablets, herbal oils, teas and cosmetics. In mid-2008, Zandu was acquired by Emami Ltd., a Kolkata-based six billion rupee (\$ 120 million) herbal cosmetics company, severing it from its traditional vaidya family roots (Financial Express 2008).

All of the small and micro manufacturers interviewed except one, reported that they were heavily dependent on classical medicines for their survival. Of the three medium large companies, classical products constitute 80-90% of the turnover of the SNA Oushadhashala (SNA) and Sitaram Ayurveda Pharmacy, both based in Thrissur. The third, KAL (Kerala Ayurveda Limited) based in Ernakulam has shifted more towards branded medicine following its recent acquisition by a non-traditional stakeholder. It still derives most of its bread and butter from classical, but is relatively proprietary-focused, with 50 products accounting for 40% of its annual turnover of around ₹ 180 mn (\$30.6 mn) in 2009.

There is an uncanny parallel between the ayurvedic and the movie industries of North Versus Kerala. The nine OTC products of Dabur grossing a billion rupee turnover each are akin to Bollywood blockbusters, both making money by selling fantasies. The average Bollywood blockbuster showcases protagonists from upper middle class who live in sprawling urban apartments driving imported cars and dining in five star hotels. In contrast, box office hits in Kerala are low budget Malayalam movies grounded in daily life dealing with subjects of concern to the middle class and the working class. In a somewhat similar vein, Ayurvedic manufacturers of Kerala sell plain classical products to meet everyday therapeutic needs. It is the demand that drives the ayurvedic industry in Kerala. Dabur and the other North Indian companies on the other hand, are heavily depend on blockbusters that are meant to cater to the moneyed class. They splurge millions on product advertising (i.e., 15% of the turnover (Dabur 2010)) and are also heavily dependent on celebrity endorsements. The advertizing techniques and images used by them have been subject to detailed analysis (for example Nichter 1989, Bode 2008). AVS does not advertize products, neither do most of the large manufacturers. It spends little over 2% of its revenue on advertising. The most non-traditional of the large manufacturers, Nagarjuna spends 10% of its sales value, KAL 5% (Harilal 2010). Bode reports AVS's justification against advertising ayurvedic formulas to the public, quoting the Marketing Manager,

When you advertise products to consumers you have to give general indications for us which they can understand. This is contradictory to ayurveda where medicines have many uses depending upon the humoral characteristics of patients, ailments and environments. (Bode 2008: 126)

Most classical focused manufacturers focus on promoting the brand rather than products. The usual

advertisement is a reminder of the legacy of the establishment, its traditional reputation in therapy and quality of medicine production. An innovative AVS advertisement in a recent Malayalam health magazine *Mathrubhumi Arogyam*, simply attempts to remind the fast modernizing Malayalee the significance of a popular cultural therapeutic practice of *Ennnathechukuli* (Malayalam term for applying medicated oil before bath), touting it as “the ayurvedic secret” for promoting “youthfulness”.

Kerala Ayurveda Samajam’s full page ad with institutional profile and history

Brand advertisement of Vaidyaratnam Oushadhashala

There was an ascendance of proprietary focused companies in Kerala in late 80s-early 90s. Some like Nupal were classical product companies that evolved a proprietary focus. Companies like Kandamkulathy Vaidyasala and Pankajakasthuri began with proprietary and built their empires over the success of one or two products, but eventually expanded to include the full range of classical products.

Kandamkulathy Vaidyasala is a classic case of an entrepreneur son capitalizing on the family vaidyan tradition. The founder K. P. Pathrose belonged to a Catholic family of *Kandamkulathy* in interior Ernakulam. The vaidyan in his life time had expanded practice to three locations in the neighborhood towns and had acquired a local reputation. In the early 80s, after his passing away, his son took reins of his small *vaidyashala* (pharmacy). In 1988, he took up *Eladi Lehyam*, an expectorant which was part of their family medical kit, and launched it in the market as an OTC product. He conceptualized it to be sold in sizes and prices that suited people’s pockets. This strategy went on to be a great success. Now it is their flagship product bringing in 50% of the company’s annual revenue. Though the product has many competitors now, *Eladi* still enjoys much of the market share. Two large Kerala based companies and even Dabur which has a reputed product in the segment in the North failed in their efforts to market a competing product. All proprietary products put together account for around 60% of their total turnover of the company that approached ₹ 70 mn (\$1.4 mn) in 2008-9. Despite the aggressive OTC model, 40% of the revenue comes from classical products sold through 68

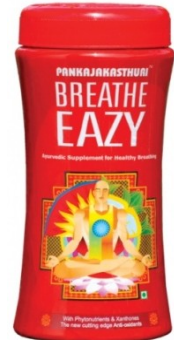


Eladi lehyam

exclusive agencies concentrated in Central Kerala. In 2002, they launched the brand of *Ayursoukhyam*, short listing some of the agencies to provide treatment facilities. The company is also an active participant in the tourist market³⁷.

Pankajakasthuri Herbals India, a multi-million dollar company started with a single product in 1988.

The founder Dr. Harindran Nair is a modern ayurvedic practitioner-entrepreneur. He began as an ordinary ayurvedic doctor who designed a medicine for respiratory illness. Confident of its efficacy, he attempted to sell it personally to doctors going around on a motorbike. Finding the going slow, he decided to switch to aggressive ad-based selling. Today the flagship product, *Pankajakasthuri Breathe Eazy* contributes 70% of the total turnover of ₹ 220 mn (\$4.4 mn) (2008-9). In contrast to classical-based companies, it spends 25% of its turnover in advertisement. However, despite the initial focus on a single product, the company has evolved into a full-fledged ayurvedic manufacturing company. Its ethical division has 13 products and classical division has around 440 products. Medicines are sold through franchisees branded *Pankajakasthuri Jeevanam*. (from various Press Releases, Pankajakasthuri, n.d.)



Despite the fact that their revenue is earned by a single product, both take the trouble of manufacturing a large classical pharmacopeia, opening exclusive agencies to distribute and provide consultation. In the Kerala market, growing from rags to riches with a few branded products does not earn respect. To be considered at par with the established manufacturers, it is imperative to get into the full range of activities connected to what is considered 'serious Ayurveda'³⁸. Manufacturers based in the classical tradition that dominate the Kerala Ayurveda scene sneer at those who make quick money with a few products. Companies that make money by selling cosmetics like soaps get even scantier respect. Commitment to serious medicine making on the other hand commands high esteem, irrespective of its profit potential. However, it should be noted that though identity does matter in influencing market strategy, the driving factor as of today is the market. The two cases discussed above show that classical market continues to make business sense in Kerala; identity as of now is more a by product than a causal factor. However, there is some change in the Kerala manufacturing scenario in the past half a decade. A distinct breed of ayurvedic companies has come up. These have opened up new market segments, the most popular being cosmetics, anti-obesity drugs, and aphrodisiacs. Many traditional stakeholders who shied of cosmetics are now making ayurvedic soaps, opening up new divisions to handle marketing or forging strategic alliances with non-ayurvedic companies. They are

³⁷ Source: Mr. Babu Joseph, General Manager, Kandamkulathy Vaidyasala.

³⁸ This is not a consciously expressed sentiment, but a deduction I have made based on various statements made by interviewed manufacturers, retail medicine sellers and practitioners.

also reluctantly shifting towards more convenient forms of medicine like decoction tablets to suit the convenience of new customers (For detailed discussion, see Chapter 9).

A change in practitioner and consumer culture forced AVS to give up its century old resistance to the proprietary. It rolled out its first batch of 20 proprietary products in early 2010, produced from a separate factory in Nanjangud, Karnataka. For the first time in a century, suit and tie-wielding executives have begun to step out of this classical traditional establishment, a development that is bound to be a trifle too unsettling to the conservative practitioners, manufacturers and consumers of Kerala. Here again, the growth trajectory is strikingly comparable with the transition in the Malayalam movie industry, that over the past decade, has been seeing a noticeable shift towards high budget movies. In terms of themes, extravagancy of sets and costumes, new box office hits have begun to resemble Hindi and



Banner at AVS stall announcing the recently launched proprietary range, Ayurvedic Industrial Exposition, Trivandrum, 2012

Tamil movies. The earlier generation character actors have turned superheroes, moving from realism to high drama. The traditional slow and melodious songs based on classical ragas are replaced with fast paced music and dance sequences, often mixed with western music and English lyrics. Older generation producers, directors, actors and movie connoisseurs of yester years complain about this corrupting trend, lamenting the loss of realism, art and character acting. New producers justify the shift as an inevitable strategy adapted to meet competition from Tamil movies. Movie directors bend backwards to accommodate tastes of youngsters who are now distanced from rural realities and have got accustomed to the flashy Hindi and Tamil movies surrounding campus love stories.

But it is too early to say whether the move towards branded medicine is just a temporary phase or a trend that is here to stay. In 2005, on the occasion of introducing a new classical drug, Vaidyaratnam Oushadhashala announced its desire to continue with its tradition of manufacturing

classical drugs instead of shifting focus to OTC products (Hindu 2005). In the 2010 celebration of their 90th year of founding, SNA released “Unni Mooss Series” introducing 12 classical products into the market (*see image below*). AVS, despite its entry into the new line of proprietary products continue its loyalty to the classical market. Though the viability of around 70% of their products is low they have not had to cut down on their products. Post the tourist popularization of Kerala Ayurveda, they see a potential to expand their classical product catchment to other parts of the country. Many

manufacturers including AVS are conducting training programs that are in demand from ayurvedic doctors across the country interested in gaining exposure to Kerala Ayurveda. This provides them opportunity to expand their market by educating doctors outside Kerala about Kerala Ayurvedic products. For example, a group of Ayurvedic doctors from Maharashtra attending a pre-conference pharmaceutical workshop organized by one of the largest manufacturers of Kerala, were found to be keen on



Unni Mooss Series: Classical series introduced by SNA Oushadhashala in 2010

experimenting with decoction and oil based products. They were already familiar with the products from their ayurvedic textual knowledge, but for some reason, certain classes of products like decoctions and oils were hardly in use, possibly due to the dominance of herbo-mineral preparations in their pharmacopeia.

2.4 Is big Pharma turnover an adequate representative of classical medicine consumption?

Focused on the study of large pharmaceutical manufacturers, researchers have confirmed Leslie’s (1989:30) suspicion of their role in “irrationally distorting the economy of health care” They have noted that the ayurvedic companies target middle class consumers based on analysis of marketing strategies of large manufacturers (For example, Bode 2008, Banerjee 2002). Pharmaceutical turnover is a fairly good indicator of medicine consumption trends, but how representative is it of overall consumption patterns? Would it be appropriate to gauge ayurvedic consumption merely in terms of the turnovers of these large manufacturers? Bode (2008) provides a more incisive analysis, he estimates the

classical market as constituting a turnover of \$ 62.5 mn, which is 10% of the market³⁹. But classical medicines, historically, were never made by manufacturers. They were mostly made by practitioners. Practitioners outside Kerala often make their own medicines because of lack of availability of classical medicines in the market, a point also noted by Bode (2008). There are also innumerable practitioners who are unregistered micro manufacturers; an ayurvedic doctor is not required to obtain manufacturing license unless he plans to distribute it in the retail market. There are around 1.5 mn unregistered practitioners of indigenous medicine in the country (Planning Commission of India 2000).

It appears that it is this unexploited niche in rest of India that has been targeted by Yoga guru Baba Ramdev's Divya pharmacy that has seen an unprecedented expansion in the past couple of years. Since 2008-2009, riding on the popularity of his yoga fame, Baba Ramdev has expanded franchisees across the country, growing to a total of 1049 and an additional 794 treatment centers within 3-4 years. Most of his products are classical and traditional, priced at highly competitive rates. The products also include semi-processed medicines like decoction mixes. An informant knowledgeable about the North Indian market reported that sales of small manufacturers across North India has dropped by 50% in the past two years due to Ramdev's expansion.

In addition to this, a bulk of ayurvedic consumption is home based. A recent survey showed that rural households consumed 86,000 MT of botanical raw drugs, accounting to 27% of the total estimated consumption of herbal raw drugs in the country (Ved and Goraya 2007). The estimation of ayurvedic market shifting towards branded products or moving away from the rural poor class cannot be supported by merely looking at shares of turnover of manufacturers. It is also important to take into account the classical medicine consumption of the unorganized market comprising of practitioner made and home processed medicines. The difficulty of investigating the unorganized sector is noted by a researcher who has extensively studied ayurvedic industry in Kerala.

Unregistered units are believed to be large number in Kerala and the estimation of its contribution relative to the factory sectors is impossible. This is mainly because the household vaidyans still forms a major part of the ayurvedic sector, and generally they are not officially registered. Our analysis is confined to the organized licensed manufacturing units of Kerala..... since the efforts to collect the data regarding the first category turned futile (Harilal 2010: 44).

³⁹ As at 2010, the market is around \$1.2 billion. If the growth is proportionate, classical would be around \$100 million.

2.5 Diversion or diversification? which is the more appropriate term?

The commercial logic that governs production of ayurvedic pharmaceuticals has been feared to affect the integrity of the medical system (Bode 2008). The commercializing trend that Banerjee (2002) sees as affecting the internal order of the ayurvedic knowledge system in large scale ayurvedic manufacturing in India, has been perceived to be affecting the manufacturing industry in Kerala (Harilal 2009, 2010).

A major concern is the change in product pattern and importance given by most of the firms towards nutraceuticals and cosmetics, and the failure of regulation systems, which may hamper the spread of ayurvedic therapeutic tradition and its clinical value in future (Harilal 2009: 51).

But there is little hard evidence to conclude that such trends would displace classical consumption. In fact, prima facie they appear to be far less threatening than ethical proprietary products; cosmetics and soaps expand the catchment of manufacturers to new segments of consumption, whereas the latter directly compete with classical products. The only inference one can logically draw on the basis of marketing strategies and turnovers of large manufacturers, is about the shift in focus of the large manufacturer. But a manufacturer can theoretically focus on one segment without affecting another, because these are not competing segments. Turnover comparison that show OTC as surpassing the classical, is often taken to gauge the market as being overly commercialized and inimical to classical medicines. But none of the OTC products are serious competitors to a classical ayurvedic product. By definition, these are meant for minor ailments that traditionally people were most unlikely to have been going to a doctor for redress. If factory-made OTCs are displacing a traditional practice, they are most likely substituting the use of home remedies. These customers are most likely to be those already distanced from such uses and are most likely to be those who are looking around for quick fixes for daily annoyances like cough, cold and indigestion. In the absence of easily available ayurvedic products, such customers could be easily lured by biomedical products. For example, an urban middle class professional might substitute the use of *Dabur digestive* for an antacid, an ayurvedic cough syrup for a biomedical cough syrup, an ayurvedic eczema ointment to a biomedical one. A study shows that indigenous medicines constitute 27.3% of the OTC segment in India, compared to a 16.7% in Europe and 5.3% in the US (Paninchukunnath 2007).

Even if large manufacturers shy away from the classical market, this need not necessarily be a drawback; it would allow room for other minor stakeholders in the segment. In fact, the lesser manufacturer focus and market availability of classical products, higher is the chance that doctors make their own medicines⁴⁰. Paradoxically, the Kerala industry, by standardizing classical distribution through agency format, pose a greater threat to doctors' practice of making medicines.

On the other hand, branded ethical/prescription products could pose a serious threat because they directly substitute classical products for many important therapeutic categories. For example, let us take arthritis. Here are two samples of medicine protocols for arthritis I encountered in Kerala contrasted with a patient's prescription from Bangalore.

Patient 1, Idukki, Kerala: Four classical medicines: *Pinda Tailam* for topical application, *Bala Hathadi Tailam* for application on head, *Gandharva Hastadi Kashayam* and *Punarnava Asavam* for internal consumption, *Orthocure* (proprietary medicine) for internal consumption, a herb infusion for bath made of four herbs (*avanakku*, *puli*, *karinochi*, *erikku*) and a herb infusion of the leaves of *thazhuthama* and dried *njerinjil* to be boiled and substituted for drinking water.

Patient 2, Thrissur Kerala: *Rasnerandadi Kashayam*, *Triphala Churnam*, *Vaishvanara Churnam*, *Dashamoola Haritaki Lehyam*, and a *Kuzhambu* for topical application.

Arthritic patient, Bangalore: *Rumalaya tablets* for internal consumption and *Rumalaya gel* for topical application, both proprietary products of Himalaya Pharma.

Though ethical products are expected to be mediated by doctors, Bode (2008) notes that 2/3rd of ethical product purchase is over the counter. It is not understood as to what extent these replace classical consumption, because the champions of this strategy, Himalaya and Charak have been mainly targeting allopathic doctors.⁴¹

2.6 Classical products: a new lease of life?

A decade ago, it would have appeared as if the march of the branded medicine to the detriment of classical medicine was inevitable. Though it does not match the branded product in terms of growth rates, classical medicine continues to hold forte and may be even undergoing a gradual revival. In Chapter one I argued that the new wave of post-tourist commodification of services led to

⁴⁰ Most of his products are classical and traditional, priced at highly competitive rates. The products also include semi-processed medicines like decoction mixes. An informant who was knowledgeable about the North Indian market reported that sales of small manufacturers across North India has dropped by 50% in the past two years due to Ramdev's expansion.

⁴¹ If their threat to classical products have to be estimated, historic prescription patterns will have to be taken into account. This will require historic product wise sales data, but it will have to be controlled for periodic rise and fall in disease prevalence. Another confounding factor is the trajectory of competition from biomedical products.

the emergence of Brand Kerala in Ayurveda. This went on to influence the practice of Ayurveda in the rest of the country. While on one hand it might have led to diversions considered unacceptable by the traditional stakeholders of Ayurveda, it also appears to have expanded a market for therapeutic Ayurveda. This trend also seems to be leading to a renewed interest in classical medicines, most likely influenced by the Kerala model. Many manufacturers of Kerala have begun to expand their reach to other parts of India. While marketing attention to classical medicines is rare, a recent study (Singh 2011) that does a SWOT analysis of classical and branded products has some interesting observations to make. In fact, the choice of the subject itself indicates a upsurge in interest in classical. Singh notes that low price, low expenditure on R&D and marketing are strengths of classical; weaknesses include consumer's problem in remembering names and hesitance in prescribing and using because of the complexity involved. He observes a gradual switch over in prescribing habits of ayurvedic physicians as well as purchasing habits of patients, and notes that generic ayurvedic medicines are rapidly emerging as alternative to branded medicines.

Addressing shareholders, a large North Indian company based in a vaidyan family portends a change in the mindset of ayurvedic physicians.

OTC and FMCG have been some of the marketing paths adopted in most ayurvedic companies. Rx products for the discerning but fast accepting modern science physicians, has also been a key focus area. But imagine Ayurveda accepted in toto by the ayurvedic physicians, in its true sense...what this opportunity means. It is like Hindi accepted by Indians as their main language of communication. Can you hear the roar of 100 crore (one billion) Indians being serviced by over 600,000 ayurvedic Physicians. The day is not far and frankly - we do not need 100% subscription to show exponential surge in volumes. Your company has seen the emergence of this wave at its inception (SDL 2004).

In a personal interview, Mr. Ranjit Puranik, owner-CEO of Dhootapapeshwar, General Secretary of Ayurvedic Drug Manufacturers Association (2002-2010), admitted that his optimistic expectations were not met and that the classical market was pretty much stagnant.

2.7 Classical medicines Vs doctor-made proprietary medicines

Not just in manufacturing, even in clinical practice there appears to be difference between practitioners in Kerala and outside in terms of their approach to medicine making. It is common to come across practitioners in cities like Pune and Bangalore making their own medicines in a small scale, usually in a large kitchen attached to the clinic. According to one version, this is because of the

problem of unavailability of classical medicines in market. One doctor in Pune whom I was personally consulting, saved on labor cost by taking advantage of training requirements of interns. Another doctor in Bangalore had a range of branded proprietary medicines that she sold in a pharmacy counter attached to her clinic, though they were not registered. Higher profit margins is another motive attributed. I asked the owner-CEO of a large manufacturing company in Central India who had several years of experience in selling medicines to doctors in the region, if such an allegation was really true. He rolled his eyes surprised I was asking for evidence for a more than obvious phenomena and exclaimed, “of course, 1000%!” referring to the profit margins involved. (One more instance of the anthropologist sheepishly looking for third party verbal evidence for a palpable phenomenon, with an inherent danger of being considered as ‘lacking in commonsense’).

Such doctor-made medicines tend to be proprietary in nature⁴². They are either labeled with proprietary names or are handed out without names. In either case, patients are left in the dark; unlike registered proprietary medicines they do not list ingredients. Such practice has two main drawbacks. Firstly, it makes the treatment process non-transparent. Secondly, it does not build a relationship between patients and medicines. It is as if the doctor wants to prevent such a relationship, thereby retaining greater authority on the patient. Because the patients do not know names of classical medicines these practices do not create a market for repeat prescription or help in contributing to cultural knowledge of classical medical names.

An important attribute of an open-system is ‘transparency’. Classical medicine based prescriptions on the other hand provide for *transparency of the treatment process*. This provides patients the flexibility to switch doctors, which is especially useful for people who are mobile or those who travel to distant places to consult expert doctors. Ayurvedic doctors in Kerala seldom maintain patient records. Besides symptoms, an important source of information about the past diagnostic process, is the prescription record. Even with their own patients, doctors frequently ask the prescription history, especially when they return after long intervals. This helps them remind of their own diagnostic framework and treatment strategy. If the patient is new to them, the prescription helps

⁴² Based on personal experience of consultations, reports from eight patient-customers and interviews of two doctors from Pune and suburban Bombay. Though this appears to be the dominant pattern, two patients also had experience with doctors who prescribed a combination of classical and proprietary medicines.

them gauge the treatment logic used by the other doctor. Added to this, information on the patient's response to these medicines provides with valuable data.

Despite widespread availability of classical medicines, it is common for doctors in Kerala to make medicines, most often driven by their personal perceptions of authenticity that may or may not be combined with desire for additional profit. But in Kerala doctor-made medicines at the micro-level tend to be classical rather than proprietary. Occasionally, one does come across a shrewd doctor who has figured out ways of tweaking classical practice to make it more profitable. Some manufacturers add the term 'special' to the classical name, to distinguish medicines tweaked according to the doctor's logic and experience. For example, SNA Oushadhashala makes around 50 special proprietary formulations that are modifications in classical formulations made by the *Ashtavaidyans* (an elite group of Brahmin practitioner families) over their generations of family practice. However, this tactic is also sometimes used as a commercial strategy for stopping patients from buying from competitors. A doctor from central Kerala boasted about his clever business trick. He made minor modification in the names of classical medicines, making it difficult for the consumers to find them elsewhere in the market. In fact, the names sound so similar to classical that unsuspecting patients try to procure it from local agencies often leading to confusion among retail sellers. Two of his long distance patients complained that they were forced to travel all the way to his clinic for medicines, even the prescription was just a continuation of the earlier one.

This is not to say that doctor-made medicines are not legitimate practice or less-effective. After all, practitioners were expected to make their own medicines in the pre-industrial era. In fact, many patients consider doctor-made medicines to be authentic in contrast to mass produced factory medicines of unknown quality, a perception also shared by doctors who are unwilling to trust market medicines. However, the point I am making here is that classical and proprietary medicines have different long-term implications for the ayurvedic market. Doctor-made medicines unlabeled medicines create an exclusive and closed commodity market, whereas classical medicines help creating an open market and a transparent consultation process. This brings us to a classic difference between open-source and proprietary products in general. The latter is limiting in terms of profitability as seen from a

conventional business perspective, but the former gives more control and bargaining power to the consumer.

2.8 Ayurvedic shops and their wares: three profiles

For those unfamiliar with Kerala, the manner in which ayurvedic medicines is sold might itself appear strange. Outside Kerala, ayurvedic medicines are mostly sold in multi-branded medical stores that tend to be concentrated in towns and cities. In Kerala, multi-brand shops are rare to find, the default mode of selling is through manufacturers' agencies. An average town in Kerala, has anywhere from 3 to 10 such agencies, often exceeding the number of grocery shops; village junctions have 1 to 3 depending on the size of the village⁴³. I have been often taken aback by surprise on seeing ayurvedic agencies in some of the remotest villages. Three descriptive profiles will illustrate the nature and spread of the ayurvedic retail segment in Kerala.



*Multi-brand Ayurvedic Shop, Dakshina
Kannada, Karnataka*

2.8.1 RS, a large town in Ernakulam district

RS is a bustling town in Central Kerala, with a density of population nearing around 1300 per sq. km. Like most towns in Kerala, this has emerged from an unplanned organic agglomeration of shops and market areas. In historic Kerala, towns were concentrated near sea ports and inland waterways. Today they are mostly located at hubs of roads or railways. RS is located at one such important junction in central Kerala, at the intersection of a national highway and one of the busiest state highways. Two important neighboring towns of historic significance add to the importance of the town. The main town area stretches from the center to around a kilometer into each of the three main roads that branch off from the town junction, and also into three to four minor roads, a couple of parallel roads and connecting lanes. The shops and commercial establishments in the town cater to not only the inhabitants of the town but also to the surrounding villages.

⁴³ Based on observation during my field work in four districts.

In the RS town, the most visible commercial establishment is a towering 800-bedded multi-storey building of a multi-specialty Hospital that caters to around 1500 outpatients daily. There is also a district government hospital and two small 10-20 bedded private hospitals within 4 sq. kms. of the town. Like the typical Kerala scenario, there are no independent doctors' clinics in the town⁴⁴. Half a dozen hospital employees, who live in the town region engage in private practice in clinics attached to their homes. While the hospital has its own pharmacy to distribute medicines, there are around 15-20 medical stores in the town that sell allopathic medicines. They do stock a small number of ayurvedic medicines that include mostly OTC medicines⁴⁵, ethical products and fortified food products. These include products of a few reputed Kerala companies⁴⁶ and a few from small unheard of companies in Kerala that specialize in a narrow range of proprietary products⁴⁷.

Classical ayurvedic products are sold in exclusive retail shops. There are ten such shops in this town, all but one of which are equipped with qualified ayurvedic doctors for consultation. Seven of these shops are agencies of ayurvedic pharmaceutical companies. Of these, four belong to the largest of the Kerala manufacturers and three to medium scale manufactures. Five of the



Ayurvedic Agency ensconced in a commercial complex (Extreme left, first floor), Thrissur Dt.

pharmaceutical agencies are run by small businessmen where ayurvedic doctors work as part-time consultants, one agency is owned by a doctor, and one agency is part of a raw drug shop. Three ayurvedic retail shops belong to doctor-manufacturers with a history of practice. While these doctors make medicines mainly for their patients, they take advantage of their road-front shops to tap into the retail market. There are six raw drug shops. As is common in most of the towns, all are located in the

⁴⁴ In other regions in India where I have lived, i.e., in the States of Karnataka and Maharashtra, patients most commonly consult doctors practicing in independent clinics, hospitals being the last resort.

⁴⁵ OTC products mainly include proprietary products of a small segment of local medium sized manufacturers. Some of the often seen products are hair oils, sexual health and general health enhancement tonics, liver supplements, memory enhancement tonics aimed at school children, and digestives.

⁴⁶ The most common being Nagarjuna, KAL, Pankajakasthuri, Nupal and Bipha Labs. The ethical product segment is dominated by North Indian companies like Himalaya, medium level companies like Charak, and a few products of lesser known medium sized companies based in western India like Ban Labs and Ayurchem.

⁴⁷ For example, Ulset for acidity and stomach ulcers by Shankar Pharmacy.

core market region where daily items from dry fish to vegetables, agricultural implements to grocery items, are sold in small shops huddled in narrow crowded alleys. Two of them do not sell much finished medicine, three others stock medicines of multiple brands, while one combines a franchise of a medium level manufacturer along with his raw drug business. Brief profiles of three agencies representative of three common categories from the town is provided in Appendix B.

2.8.2 PS, a small village in Ernakulam district

PS is an interior village located at a distance of 6 kms. from RS town. Historically an important and busy junction, the PS village junction has been sidelined by urban growth shifting towards the AN junction in the South-East where a highway had come up eight years ago. The buildings in the village junction are old, most of them still sporting hand-painted boards, unlike the highway part of the village that sports modern colorful flex boards, now a commonplace sight in Kerala. It makes sense to look at both the junctions as they are just a mile apart from each other and serve almost the same population. PS village stretches between these town junctions, densely packed with standalone homesteads with 10-20 cents of land, and small farm houses with an acre or two of farmland, a habitat structure characteristic of much of Kerala. Though the population density and consequent accessibility to services makes it appear urban, people in the region are rooted in rural ethos, a close knit-community based in a traditional, predominantly agrarian culture. However, much of the farmland has vanished, the land prices have skyrocketed, with a single cent of land⁴⁸ averaging ₹ 250,000 (\$5000). In fact, the source of wealth that is exuded by many of the ultra-luxury houses can be traced to income from sales of inherited land. The price of land combined with high daily wages⁴⁹ has made farming an unviable proposition. A few die-hard farmers driven by traditionally cultivated passion continue to do

⁴⁸ Cent = 1/100th of an acre.

⁴⁹ Ranging from ₹ 150 (\$3) a day for unskilled worker to ₹ 300-500 (\$6-10) for skilled workers.

group farming (*koottu krishi*) of paddy. The only serious farming effort goes into rubber plantations and occasional coconut groves. A large section of the population are service workers, office workers, teachers, nurses and factory workers who work in nearby cities. Because of the proximity of RS, there are no allopathic clinics or hospitals in the old town. The South Eastern junction has a small allopathic hospital, a diagnostic lab, two allopathic who offer an hour or two of clinical practice in their homes, and three homeopathic practitioners. But there is no dearth of ayurvedic establishments. In the AN junction, there are three agencies of one large, and two medium sized manufacturers (See Appendix B.1 for profiles of two pharmacies).

In the interior town junction, there is a government ayurvedic dispensary, a raw drug shop, and three ayurvedic retail shops. One of these is an agency of a large non-local manufacturer, one of a local micro-manufacturer, and the third is a shady outlet that sells ayurvedic wines as a disguise to sell illicit liquor. The people in this village also have access to two more agencies in the neighboring village junction, just a mile away. These include an agency of a large manufacturer, and an outlet of a local doctor-manufacturer. There is only one raw drug shop in the inner layer of the older town, the rest prefer to go to RS. There are around 5-6 doctors within 20 sq. km. But for the local doctor with his pharmacy, the rest are part-time consultants in the pharmacies. There is an



Doctor-owned Ayurvedic Medicine Agency, Cochin City

ayurvedic clinic run by a doctor from a local vaidyan family located three kilometers away on the highway between their village and the next large town. The clinic has recently expanded to a ten bedded hospital. Eight kilometers to the South, there is another large town, that has many ayurvedic establishments including two large private ayurvedic hospitals. Residents from this village travel there for work and other requirements. The connectivity between all these regions is very good, there is a bus every 5 minutes on the highway that connects the two large towns through the village junction. The maximum distance people living in the interior village have to walk to the bus stop, is a kilometer.

2.8.3 KN, a small town in Thrissur district

KN is a small town located on a busy intersection of two major roads that link a large city and a coastal town touching the national highway. It is one-tenth the size of the large town described above. An old center of commerce, it appears to have far outgrown its capacity; roads are narrow and cramped, shops are almost on the road and there is hardly any space for a pedestrian walk. The town has a theater, three small restaurants, four tea shops, two juice shops, two banks, an ATM, two offset presses, two cyber cafes, four textile shops, a couple of hardware shops, a dozen grocery shops and four vegetable and fruit sellers. But for shopkeepers, and employees of banks and local government offices, the town has little reason to attract people. Those who come here are either non-local passers-by making use of the bus junction or people from neighboring villages who come to shop for commodities and services. There is one homeopathic clinic, and seven allopathic shops and seven ayurvedic agencies in the town including a co-operative fair price(*neethi*) medical store. The town has ayurvedic agencies of all the five largest manufacturers of Kerala, one of a medium manufacturer (*Santigiri*) and a small local pharmacy. Two agencies provide part time ayurvedic doctors for consultation. The local pharmacy, specializing in pediatrics, is run by a formally trained heir of a traditional pediatrician. Besides these, there is also an independent practitioner, a retired ayurvedic college professor who in the words of another agency owners, is the “catchment⁵⁰” for the agency of AVP, a large manufacturer. Around 1.5 Km. from this town there is a government ayurvedic dispensary and three ayurvedic agencies. All together there are around 10 doctors located within 3 km. radius of KN town. There is no raw drug shop in the town, but two are located 3 km. down the road in the next junction which by its location located in an ancient boat landing was a historic center of commerce.

2.9 Over the counter buying of classical medicines

Agencies report that 30-50% of medicines are sold⁵¹ without prescription. Over the counter medicines contribute to some part of the non-prescription sales. Most of the OTCs tend to be low-

⁵⁰ The English word catchment is widely used in Malayalam, deriving from the usage in the context of dams.

⁵¹ From reports of agencies, see Appendix 3.12

priced small items for common ailments, a few of them are high priced items⁵². Most of these items are heavily advertised in print and electronic media. Five common types of non-prescription purchase of classical products can be identified⁵³.

A large proportion of repeat prescriptions: These are patients who on the reoccurrence of the condition resort to an earlier prescribed medicine. The repetition can be immediate. For example, an arthritic patient on pain medication for a month, continues it for another month without consulting the doctor. Repeat use can also be episodic. For example, a patient prescribed *Abhayarishtam* for indigestion and has found it efficacious might take it again in the next episode (or for another family member) without consulting the doctor again. Some of such repetitions may last for life, or might also spread to other family members and friends. Such practices work typically only when a single medicine for a single identifiable condition is involved.

Classical products that are part of collective knowledge because of widespread traditional use have acquired an automatic OTC status. Some common examples are, digestive and general tonics like *Dashamoolarishtam* and *Chyavanaprasha*, *Triphala* for digestive complaints and *Dhanwantaram* decoction for cough and. Bode (2008) points out that the first three constitute 20% of AVS sales and are frequently brought without physician consultation. In central Kerala that has a strong tradition of classical practice, people have acquired familiarity with many classical medicines over generations of use, similar to long term users of allopathic medicines. *Achyutan*, an agency owner in a rural town in Thrissur who does not hire a doctor sells more than 50% of medicines without prescription. Do you really have to 'prescribe' medicines to people of Thrissur?(*Thrissurkarkku Marunnu kurichittu karyam undo?*).

Medicines meant for post-delivery care are very rarely sold on prescription. Though some of the post-delivery tonics are also classical ayurvedic medicines, for most consumers these are part of a routine protocol that they are traditionally familiar with.

Buying medicines based on others' experience or advice is a fairly common practice both in allopathic

⁵² Examples for low-priced items that are sold heavily are expectorants like *Eladi Lehyam* (₹10/\$0.2 for 25 gm.), *Tulsi cough syrup* (₹19/\$0.38 for a 100 gm. bottle), pain balms (₹ 10/\$0.2 in 10-25 gm.). Some high priced items are *Breathe Eazy* for respiratory problems (60 tablets for ₹ 200/\$4), *Santosh brahmi granules* for memory enhancement (450 gm. for ₹ 160/\$3.2).

⁵³ I have not done a quantitative study, this is based on observations and interviews.

and ayurvedic medicine. For example, *Ameena*, a school teacher in her mid-40s, on hearing that fomentation with a combination of two medicinal oils (*Rasnerandadi* and *Dhanwantaram*) was alleviating her sister's arthritic joint inflammation, promptly bought the oils for herself. *Vinayak*, a 30 year old bank employee who wanted to increase his weight, learnt from a colleague that *Narasimha Rasayana* was an ideal supplement. But this typically works only for simple medicine protocols; most of the classical prescriptions are individually tailored complex protocols that are not easily transferable from one patient to the other. Though there is no particular advantage in circumventing a physician because consultation is more often than not free of charge, there are other reasons. It could be a simple reason of saving traveling time; the patient does not have to personally go for buying medicines. Or it could be a more complex reason like reluctance to submit to the doctor's authority, of having to subject oneself to diet and life style recommendations. Diet prescription is considered the single largest deterrent that makes people shy away from ayurveda.

Prescriptions can be invisible. This happens when patients do not carry the prescription note to the pharmacy because they are already familiar with the names of medicine.

Doctors differ in their attitude towards OTC consumption of classical medicines. The concern is not about episodic consumption, but about long-term self-prescription. This concern stems from the ayurvedic approach to pathology; whereby the nature, stage and intensity of disease are expected to vary from time to time, and may require variation in treatment. An ex-ayurvedic Drugs Controller showed strict disapproval, saying "there is no OTC category in Ayurveda, even the hair oil is medicinal and should not be consumed without prescription". On the other hand, a vice-chairman of an ayurvedic college, declared that "People of Kerala don't have to be always told by a doctor. Every expecting woman knows that she has to take *Dhanwantaram* decoction".

2.10 The agency model of distribution: features and significance

An overview of the ayurvedic retail market in Kerala shows that but for a small proportion of proprietary medicines sold in allopathic shops, ayurvedic retail selling is mainly done through exclusive manufacturers' agencies. These agencies stock 50-70% of the pharmacopeia of the manufacturers; other medicines are supplied on request. This provides the essential range of ready pharmacopeia for

doctors working within a classical therapeutic framework, a facility doctors in other parts of India outside large cities lack⁵⁴. The agencies get a commission of 20-30% on medicine sales. All agencies, except those of the largest manufacturer AVS, have the liberty to stock non-competitive products of other manufacturers. Obtaining agencies of large manufacturers, especially in high density areas is not easy. Large manufacturers like AVS and Vaidyaratnam Oushadhashala have a large number of applicants on the waiting list. But small manufacturers often go searching for people to open agencies, established raw drug shops being an ideal target.

I prefer to use the term agencies instead of franchisees as these are not run in the ‘modern professional’ franchisee format. Manufacturers have not formalized rules regarding product stocking, arrangement, designing of space, etc. The shops are however required to display a uniformly designed board that makes it possible to easily identify the manufacturer. Elegantly designed shop boards, usually a combination of bands of one or bright colors⁵⁵, matched by labels in bottles sitting in neat rows on shelves, make ayurvedic agencies a colorful and attractive sight, in stark contrast to the messy appearance of raw drug shops.



Agency of Deseeya Ayurvedic Pharmacy, Wayanad

Over the counter buying is the most common mode of ayurvedic consumption outside Kerala. Besides legitimate OTC products that form the bulk of consumption, these also include buying prescription medicines by consulting the pharmacist. This practice is common across urban and rural India in the context of biomedicine (Nichter 1989, Kamat and Nichter 1998). This practice does not work well in most of the agencies in Kerala, because agencies are either owned by doctors or hire doctors to provide part-time consultation. Consultations are free, so patients have very less reason to avoid doctors and to purchase

⁵⁴Based on interviews with Ayurvedic doctors from Maharashtra and Rajasthan. Also, Bode (2008) notes practitioners' complaints of unavailability of classical medicines in the market.

⁵⁵ For example, blue & white for AVS, green & white for Vaidyaratnam, red & yellow for Kandamkulathy.

directly from the pharmacist. Since medicine and consultation are so conveniently packaged together in one place, patients do not even have to make an effort to go to two different places. Though pharmacy owners do not hesitate to give medicines for customers who ask for them without prescription, anyone asking for medicine advice is directed to the doctor. Salespersons are usually uncomfortable in using their judgment in giving medicines when they have a doctor present. I got a first hand experience of this when I attempted to buy medicines directly without consulting doctors for Chikungunya⁵⁶. The tendency of Kerala consumers to consult doctors rather than self-medicate is not limited to Ayurveda. A recent study found that only 18% of antibiotics consumed in Kerala was obtained without prescription (Saradamma et al. 2000).

On the other hand, pharmacies without doctors tend to be more liberal in proffering advice, especially if they have substantial experience to fall back on. Joseph, who has been running the shop in rural interior Thrissur for several years, often recommends medicines to patients based on his knowledge. If he does not have a particular medicine requested by a customer, he sometimes tries to push equivalent medicines. He has to be aggressive in doing this because he has no doctor to provide consultation; if he pushes the consumer to the doctor, the patient is least likely to get back to him to buy medicines⁵⁷. He complains that not having a doctor is definitely disadvantageous for sales. This is the reason why some of the manufacturers take active interest in helping agencies locate doctors. In some of the regions they send their branch doctors to spend a couple of hours once in a week in agencies that cannot afford to hire doctors.

The distribution of shops in all the three locations is also to be seen from the point of view of the settlement pattern. Kerala has a distributed settlement pattern wherein each house is located within a homestead unlike most of India where people live in hamlets, i.e., agglomeration of houses surrounded by farms. This makes a big difference in terms of service distribution. Hamlet pattern has been the most conducive for services of all nature because it provides for viability of scale and

⁵⁶ The previous year Kerala was rocked by the dreaded epidemic that was so devastating that it almost crippled the economy of the state. Despite Ayurveda's reputation in addressing the problem, there was no proprietary product in the market. I inquired in eight pharmacies. Six refused to name any medicine. Their typical response was, "we can't say, why don't you consult the doctor, the doctor will be here at such and such a time". The response of the other two who named the most commonly medicines but insisted that, "it depends on the case, you will have to consult the doctor". Later on I learnt that practitioners in Kerala had made a systematic effort to develop a protocol (See Appendix B), which provides a glimpse into the complexity of Ayurvedic approach to treatment that resists simple commodification.

⁵⁷ It is rare to find independent doctors who are not attached to agencies.

proximity of access even in low-population conditions. In a distributed settlement pattern, service accessibility is unviable without a higher density. Since population density in Kerala is extraordinarily high⁵⁸, it provides for a higher viability of scale even in the remotest of the villages. Population is spread out rather than being not concentrated in large cities. Consequently, even interior villages have accessibility to services and facilities equivalent to urban regions elsewhere, a reason why Kerala has been called an urban-rural continuum (Sreekumar 1993).

In attributing the density of ayurvedic shops to popularity of Ayurveda in Kerala, the confounding factor is population density. Comparison with MT village in South Kanara district in Karnataka State will help because this district in Karnataka bordering Kerala, has the same settlement pattern, but a population density half that of Kerala (averaging 399/sq.km.). Though MT is a village, it has lately grown into a busy town, owing to the growth of private educational institutions. There is one undergraduate and two professional colleges in the village. Recently a small supermarket has opened in the town. There are five allopathic shops all of which sell proprietary ayurvedic medicines. There are three retail ayurvedic shops, two of them less than a decade old. Only one of them is exclusive, which is the agency of a large manufacturer from Kerala, run by a person of Kerala origin. There is only one ayurvedic doctor with a 5-bedded clinic 2 kms. from the town. A town of this size in Kerala would have at least 5-6 agencies, 2-3 raw drug shops and 3-4 ayurvedic doctors. But there is one more confounding factor. Shops in South Kanara and rest of India are multi-brand like allopathic shops. In Kerala, they are agencies of individual manufacturers. In the past decade, there has been an unprecedented expansion in the number of agencies. Manufacturers see it in their interest to expand to more and more towns. The quantum of ayurvedic shops versus allopathic shops do not necessarily signify greater business for the former. In fact, it is usually the other way round. Increasing number of agencies, and dropping levels of profit are a common grouse among retail agency owners.

Ten years back when Achyutan opened the agency of Oushadhi, the State-owned ayurvedic manufacturer, there were only two other agencies, and an outlet of a traditional micro-pharmacy. Today six more have opened within 20 sq. km. area. Though a part of the growth can be attributed to a natural increase in demand in proportion to growth in population, ten is too much of a crowd for this small business, Achyutan complains. Of course they continue to do just

⁵⁸ The average density of Kerala State is 819/sq. km., but this figure is skewed because of low density in the hill districts. In the coastal districts the density ranges around 1000. Densities in the districts that I did field work in are as follows: Ernakulam: 1050, Thrissur: 981, Idukki: 252, Kottayam: 722 and Trivandrum: 1476.

enough business to keep them afloat, but it does considerably eat into their profit margins.

Two features of ayurvedic retail selling makes them attractive to small entrepreneurs looking for a stable and safe business to invest their little capital. Firstly, the agency model makes no demand on knowledge and skill, either of inventory management or of technical know-how. Secondly, there is no requirement as yet for any qualification or special license to run an ayurvedic shop compared to allopathic or homeopathic shops. While private doctors and retired government doctors are an important clientele, agencies are run by a variety of people, ranging from gulf-repatriates looking for a leisurely business to retired service people investing their gratuity funds. Hence, from the distribution pattern itself, no definite statement can be made about the quantum of demand. Macro level numbers are a better measure. Today there are an estimated number of 20-25,000 ayurvedic agencies in Kerala spread over 1100 manufactures⁵⁹. Of these 80% are small having one to five agencies. The largest, AVS has 1306 agencies, the other four large manufacturers, Nagarjuna has 950, AVP and Vaidyaratnam 800 each, Oushadhi owns 600, making it a total of 4456 between the five largest manufacturers. Of the rest on whom I have information, medium large manufacturers like Sitaram Ayurveda Pharmacy has 600, SD Pharmacy has 550, SNA and Desheeya Pharmacy have 300 each. Medium sized manufactures like Kandamkulathy Vaidyasala and Dhanwanthari Vaidyasala have 68 and 100, respectively.

Though researchers have neglected to note its significance, manufacturers in Kerala themselves seem to have recognized the uniqueness of their distribution model. In the centenary celebration souvenir, AVS presented an address to the dealers calling them 'extended arms of AVS',

Our institution has a unique distribution culture. As you know today many Ayurveda institutions survive not by distribution of medicines, but their main income comes from selling soap, paste and such other cosmetics. All those get sold by public distribution. Producing around 500 medicines, and reaching them to people only through agencies is what we have done. It is true that because of this, we do not get as much business as we would if we did through the public market, but this mechanism has helped us to ensure the originality (*tanima*) and quality of the medicines we make. This situation increases your responsibility... the modern institutions have mechanisms to monitor the working of the agencies.. But as you know, we never had to institute such monitoring mechanism. Commitment and trust have been the cornerstones of our relationship...What we have are not 'consumers', but 'customers'. As far as consumers are concerned, there are no personal relationships and no consideration of likes and dislikes. A consumer might never return again to the same shop. But customer is not like that. We keep seeing them, and we will be seeing them tomorrow... If we have to be customer-friendly, if we have to satisfy their requirements we have to understand their interest and preferences....In brief, our agencies ought to be not a mere sale agents, but information centers (AVS 2003: 225-226).

⁵⁹ Source: Director, AMMOI. Ayurvedic medicine manufacturers organization of India.

The manufacturer notes that *the distribution culture is unique*, that though they lose on profit by not exploiting non-exclusive retail chains, it has helped them in ensuring quality. There is a reminder to the agency owners of the *importance of commitment and trust*, especially because these are not run in rigid framework like modern franchisees and are not subject to strict monitoring. There is an attempt to differentiate between a tentative commodity relationship (consumer) and a long term relationship (customer); the importance of earning trust and understanding customer preferences is emphasized. Finally, agencies are imagined to be *information centers*, not just sellers of commodities. The last statement in the address is poignant, where a mythological analogy is brought out to represent the relationship between the manufacturer and the agency owner. “Friends, you know the story of *Kartaveeryarjuna* in the *Puranas*. His strength came from the thousand hands he had. You are the thousand hands of Arya Vaidya Sala. Your strength is our strength” (AVS 2003:226). Much emphasis is given to relationship here, between the manufacturer and the agency owner, between the agency owner and the customer. When Dabur and other manufacturers sell their commodities through a million retail shops, they cannot afford to focus on relationships. To use Appadurai’s concepts, ayurvedic medicine commodities in Kerala circulate in exclusive channels, whereas those in rest of India have been subverted from this path and taken out of its “commodity context” to break the barriers of its original therapeutic context. Of course, except AVS, other Kerala manufactures do sell their OTC products through retail shops, some sell prescription products through regular ‘English medicine shops’ (*Engleesh marunnu kada*).⁶⁰ But this is just a marginal practice, the central channel for ayurvedic commodities is the exclusive ayurvedic agency.

I argue that the agency distribution model is central to the maintenance of the classical ayurvedic tradition in Kerala, which allowed the bulk of ayurvedic consumption to remain within the humoral paradigm and inside the therapeutic context. It provided a viable channel for ayurvedic manufacturers in Kerala to market their classical products. The agency model evolved in Kerala as an outgrowth of the expansion of Arya Vaidya Sala (AVS) in the 50s. However, it would be wrong to attribute the marketing strategy to a consciously cultivated and carefully crafted plan designed by

⁶⁰ In rest of India, there are medical shops and Ayurvedic medical shops, medicine being a default term for biomedical. In Kerala, allopathic shops are specifically called *English medicine shops*, denying them the default status of medicine.

innovative manufacturers. AVS admits that the agency model of distribution was an organic evolution rather than a designed strategy, a spontaneous response to the market demand⁶¹.

Around the same time as he founded the manufacturing unit in the early decades of the 20th century, P. S. Varier played a significant role in the organization of Keraleeya Ayurveda Samajam, the first Kerala wide association of ayurvedic doctors. “The symbiotic relationship between the Samajam and the Vaidya Sala must have been instrumental in encouraging a steady demand of medicines from the vaidyans (Varier 2002:32)”. Increasing demand for the consultation and treatment facilities of AVS, initially led to the establishment of local branches, agencies manned by doctors being only a logical extension. As demand got regularized, it made sense for practitioners to maintain a stock of commonly used medicines, rather than the more time consuming mail ordering. The fact that not only AVS, but all manufacturers, large, medium and small, found it viable to expand the agency model, implies there was no dearth of demand for classical medicines. However, what was critical for such an expansion was the availability of a wide pool of practitioners acquainted with the classical pharmacopeia. From today’s standpoint it is easy to take this fact for granted, to overlook its significance. It is important to remember that this was a period in which formal education had not yet taken root.

2.11 Kerala Vs Rest of India: Why the difference in manufacturing culture?

A quick perusal of the industry today shows that Ayurvedic doctors are conspicuous by their absence in the top management brass of the large trend-setting industries outside Kerala. As Ayurvedic manufacturers evolved from traditional vaidyan families to large business houses, business interests took precedence. In fact, some already had historical experience in marketing biomedical patent products (Leslie 1989). Dabur, the OTC trend-setter, was founded in 1884 in Bengal, the inspirational core of the modern ayurvedic revivalist movement that also shaped the entrepreneurial climate. Follow the biomedical model of pricing, and entrepreneur had also begun to export ayurvedic medicines to Europe, growing to be one of the richest men in Calcutta by the end of 19th century. As early as the first decade of the 20th century, another entrepreneur had begun to produce ayurvedic medicines in modern forms (Gupta 1976). The founder of Dabur was a biomedical doctor who began his

⁶¹Based on response from the Research Department, AVS, that was whetted by the MD, P. K. Warriar

career with the production with biomedicines. Not a single ayurvedic doctor is visible in the five generations of the founding family (Dabur n. d.), which is not surprising given that ayurveda has always been only a part of its identity. As the fourth largest FMCG company today it positions itself “as one of the leading consumer goods company of India with interests in health care, personal care and foods”. Another large company that took off from this region in 1921, Baidyanath, was a partnership between a vaidya and a business family (Bode 2008). Despite its classical brand image, its product portfolio showcases products containing popular early European medicine compounds like salicylic acid and quinine, carries forward the historical influence (Baidyanath 2012). Zandu Pharmaceuticals, established in Bombay in 1910, was founded by the grandson of a reputed ayurvedic physician from Gujarat in partnership with a business family. The company was involved in the manufacture of biomedicines since 1936. In mid-2008, the company was fully severed from its Vaidya roots, after it was fully acquired by a herbal cosmetics company (Zandu, n. d.).

Unlike the rest, Himalaya Drug Company and Maharishi Ayurveda Products International (MAPI), had no traditional ayurvedic background, making it easy for them to carve their own niches. The former, founded by a herb trader rose to prominence in 1934, with the launching of a natural antihypertensive, which was later marketed entered the biomedical pharmacopeia as the BP drug Reserpine. Naturally the company evolved a marketing strategy targeting biomedical physicians (See Section 2.2.2). MAPI is the pharmaceutical wing of “Maharishi Ayur-Ved”, a brand established by the founder of the Transcendent Movement, considered the first attempt at globalization of Ayurveda (Jeannotat 2008). It derives half of its \$40 million turnover selling ayurvedic commodities tailored to the Western market.

Ayurvedic industry in Kerala provides a contrasting picture, continuing to be predominantly owned and managed by doctor-manufacturers. These are a unique group of stakeholders. On one hand, they are dictated by commercial pressures and on the other, as traditional mediators of ayurvedic medicine consumption, they are bound by professional ethos that resist market forces.



*AVS Stall in Ayurvedic Industrial Exposition,
Trivandrum, 2012*

Witnessing the grandeur of AVS in a conference, Bode points out that, “the size of the Arya Vaidya Sala does not justify the fact that its centenary was celebrated as a national event” (2008: 174). But it is important to note that while medicine selling may be its mainstay, the charisma of AVS comes from its multi-faceted reputation spanning treatment and education segments. It is also a charity trust that ploughs three-quarters of its profits

into various charitable activities: free medicines and treatment in its biomedical hospital, management of college, professional publications, research and so on (Bode 2008). It runs one of the most reputed ayurvedic hospitals in the country with a track record of treating several national and international celebrities. The occupancy rate of AVS’s 160-bedded hospital is so high that it takes 4-6 months of advanced reservation to get an admission. This fact is not unique to AVS. Of the several 50-100 bedded hospitals in Kerala, some of the most reputed ones are run by established manufacturers. Companies like Vaidyaratnam and SNA derive their primary identity from their historical reputation in family practice, that help them grow as medicine-sellers. Even owner-managers of large companies that derived their primary income from medicine selling divide their time equally between the factory and the clinic. Doctor-MDs of many companies including AVS regularly contribute write-ups on clinical experiences to local ayurvedic journals and popular health magazines.

Of the 15 small, mini and micro companies with turnovers less than \$10 million, one was State owned. Of the rest only one was not owned by a doctor, but this was run by a traditional vaidyan family which had no inheritor in this generation. Of the 14 doctor-run companies, all except two were inheritors of a traditional family or guru-lineage. Of the 20 companies larger than \$10 million, one is State owned. All the doctor-run companies are involved in treatment as part of their routine practice, three own small hospitals, one is a large hospital which has less focus on medicine sales. Of the rest 19,

the breakup is as follows: four are run by businessmen, of which two are new generation companies focused on the classical market (Nagarjuna and Everest), and one proprietary focused company (Kandamkulathy) but has a strong classical presence because it was inherited from traditional vaidyan father. The only plain business company with business focus is the aphrodisiac seller, Kunnath Pharma. Of these, two are involved in treatment, Kandamkulathy and Nagarjuna. For the former, it is a continuation of the Vaidyan tradition. For the latter, it is an important segment, and though established in 1999, it has already established a reputation in practice. Of the rest of the 15 companies, two are new generation doctor-entrepreneurs, one of whom acquired a traditional company and is classical focused (Sitaram Pharmacy), whereas one is proprietary-focused but is founded by a doctor who began his career with treatment-centric manufacturing and continues to be involved in treatment. The other 13 companies all have some kind of traditional background: three have guru lineages (AVS, AVP, AVN), five are family lineages (Vaidyaratnam, Vaidyamadham, SNA, Nupal, Dhanwantary). All except AVS which is run by a charitable trust, are family run. KAS is primarily an association of doctors. Two are owned by religious trusts, one Christian missionary and one Ezhava Hindu religious group. One is a traditional family acquired by a businessman managed by the family heir (KAL), one is a new entrepreneur who acquired an old tradition (Sitaram), one is a traditional company that has been run on contract by a business group (Vaidyaraj). All of them run medium to large sized hospitals.

Though the average ayurvedic company in Kerala, big or small has roots in practitioner



*An ayurvedic doctor mans a large manufacturer's stall in an Ayurvedic Industrial Expo
Poster in the background announces their expertise in treatments*

families, the trend-setter AVS was not from a practitioner family. Its founder Dr. P. S. Varier who had both ayurvedic and biomedical training, and who set up the company mainly as a medicine-making company. However, the important fact to be noted is that the target consumer was the ayurvedic vaidyan, a target that till date continues to be the focus of the classical-focused ayurvedic companies in Kerala. Excerpts from the AVS foundation day announcement of Dr. P. S. Varier in 1902 show that the production was clearly aimed at ayurvedic vaidyans⁶².

Vaidyans should organize themselves in a group and form a company that will examine all raw material thoroughly... processed with the utmost zeal and attention, making no deviations whatsoever in what the ancient ayurvedic scientists have prescribed in their texts or in the experience that has been garnered to date. It is my belief that if other vaidyans begin to buy medicines processed in this way, use them properly and conduct treatment in a befitting manner, both groups will enjoy a profit that will equal in their effort, that patients will be benefited and people will have faith and satisfaction in native medicine (Krishnankutty 2001:50).

Varrier's expectation was soon fulfilled. Several companies came in Kerala as vaidyan co-operatives. Two of them have grown very large, one in Calicut in Northern Kerala and one in Kollam in Southern Kerala. Various other formats and partnerships also emerged. For instance, one of the small ayurvedic companies in the study sample, Sree Sakthi Ayurvedics in Palakkad, caters exclusively to a group of doctors. The company was started by Dr. K. V. Krishnan, 20 years ago with a mere ` 250,000 (\$5000) investment as a small scale enterprise, has grown to an annual turnover of around ` 20 million (\$400,000). The vaidyan makes 250 classical products and five proprietary products for a group of 40 doctors who are his loyal customers. It is a mutually beneficial strategy. Doctors have access to authentic products tailored to their satisfaction, but they also get a higher profit margin. The production can be scaled up or down; medicines can be tailored to meet doctors' requirements. The doctor-manufacturer has a guaranteed clientele and is free of marketing hassles. Selling OTCs or prescription products requires an entrepreneurial mindset and a different skill set, besides the willingness to compromise on ayurvedic principles. Selling therapy products to doctors is the most practical tried and tested business model that cashes in on the doctors' expertise. For an entrepreneurial minded doctor, it is a default business model that simply caters to existing demand, requiring no skills or investment on marketing. Observing AVS success, Bode (2008: 76) says that "it illustrates that the sale of classical formulas in conjunction with humoral diagnosis and treatment is

⁶²Though customers also included patients who consulted AVS by mail.

another way to be successful in the highly competitive market of ayurvedic and unani medicine.”

More importantly, medicine-selling was only part of the identity for the majority of the sampled companies. Of the 15 small, mini and micro companies with turnovers less than \$10 million, one was State owned. Of the rest only one was not owned by a doctor, but this was run by a traditional vaidyan family which had no inheritor in this generation. Of the 14 doctor-run companies, all except two were inheritors of a traditional family or guru-lineage. Of the 20 companies larger than \$10 million, one is State owned. All the doctor-run companies are involved in treatment as part of their routine practice, three own small hospitals, one is a large hospital which has less focus on medicine sales. Of the rest 19, the breakup is as follows: four are run by businessmen, of which two are new generation companies focused on the classical market (Nagarjuna and Everest), and one proprietary focused company (Kandamkulathy) but has a strong classical presence because it was inherited from traditional vaidyan father. The only plain business company with business focus is the aphrodisiac seller, Kunnath Pharma. Of these, two are involved in treatment, Kandamkulathy and Nagarjuna. For the former, it is a continuation of the Vaidyan tradition. For the latter, it is an important segment, and though established in 1999, it has already established a reputation in practice.

Of the rest of the 15 companies, two are new generation doctor-entrepreneurs, one of whom acquired a traditional company and is classical focused (Sitaram Pharmacy), whereas one is proprietary-focused but is founded by a doctor who began his career with treatment-centric manufacturing and continues to be involved in treatment. The other 13 companies all have some kind of traditional background: three have guru lineages (AVS, AVP, AVN), five are family lineages (Vaidyaratnam, Vaidyamadham, SNA, Nupal, Dhanwantary). All except AVS which is run by a charitable trust, are family run. KAS is primarily an association of doctors. Two are owned by religious trusts, one Christian missionary and one Ezhava Hindu religious group. One is a traditional family acquired by a businessman managed by the family heir (KAL), one is a new entrepreneur who acquired an old tradition (Sitaram), one is a traditional company that has been run on contract by a business group (Vaidyaraj). All 15 manufacturers run medium to large hospital establishments.

According to Dr. Joy Varghese, Director of the ayurvedic industrial cluster in Kerala, around

90% of manufactures in Kerala are doctors, which he claims provides an “inbuilt mechanism for quality control”. A more conservative estimate puts the numbers to 70%. It is safe to infer that doctor-practitioners have historically dominated both the small and big manufacturing sector in Kerala. Manufacturers rooted in clinical practice tend to look at medicines from the view point of a doctor. One respondent, a new generation doctor-manufacturer in rural Ernakulam, started a company in the 80s. After establishing reputation as a doctor, he teamed up with a bunch of friends as business partners to start a medicine unit. Soon he realized that his business-minded partners’ expectations required him to make compromises not palatable to his doctor ethos. He refused to yield; the team broke up and the business did not grow. He contents himself making 250 classical products selling them through two outlets. But this attitude is not unique to doctors. Everest Pharma is a half a million dollar company run by a business family. The owner-MD of the company, Mr. Joyachan Erinjery, said they got into the medicine business moved by the personal experience of the owner who was nursed back from the deathbed by a traditional vaidyan. The company began with decoction powders on the advice of the vaidyan that they continue to specialize in. In his attitude towards modern marketing strategies, he exudes a conservativeness that is indistinguishable from a doctor. It requires more ethnographic work to delve into the nuances, but prima facie it appears that what is at work is the collective ethos of ayurvedic practice that sets standards for ayurvedic practice and medicine production.

CEO of SDL (Sree Dhootapapeshwar Limited), Mr. Ranjit Puranik hails from the founding vaidya family. The company represents the minority of large manufacturers outside Kerala that continue to be strongly rooted in vaidya ethos. A regular in ayurvedic industry meets and conferences, Puranik is often heard heaping praise on Kerala for preserving the classical tradition lost elsewhere. In a personal interview, he said that while shift in market had forced them to seek greener pastures, he attributed part of the shift to the lack of “commitment factor” among the trend-setting industries. He identified four pockets⁶³ in India that upheld the classical ayurvedic tradition, none of them matched Kerala in magnitude. What Puranik considers “commitment”, is what the large industry outside Kerala sees as a hurdle in its path of progress. In a personal interview, Secretary of the Manufacturers’ Association of

⁶³ Dakshina Kannada district in Karnataka (adjacent to Kerala), Surat-Baroda belt in Gujarat, Pune-Nashik belt in Maharashtra, and Varanasi, in Uttar Pradesh. Though not a match to Kerala in scale, small manufacturers in such locations are likely to resemble classical manufacturers of Kerala in their production and marketing strategies.

Karnataka State criticized Kerala's adherence to classical medicines as hidebound, saying that it was time to move towards "scientifically validated modern products and nutraceuticals". The Director of Dabur Research Foundation writes,

The lack of a killer instinct in the ayurvedic industry...domestic as well as in the international market has resulted in loss of opportunities, which should rather have been grabbed not only for the benefit of the industry but also for the benefit of the nation as a whole (Kohli 2006: 71).

This 'modernist' attitude outside Kerala came to the fore during a conversation with Dr. J. D. S. Pani, President of Karnataka Indian Medicine Manufacturers Association (KIMMA) and Chairman at Ayurpark Health Care Limited AYUSH cluster. His perception of the market and his vision for marketing of Ayurveda reflected an approach that is typical outside Kerala. Stating that classical medicines were outdated and had no established 'scientific' credentials, he contended that it was inevitable that the ayurvedic industry move towards modern and scientific products. "No meaning in giving the same classical medicines - what is the evidence that a medicine like *Ashokarishtam* works? Special R & D has to be done. We need modern products, should do research and develop products". He was critical of the Kerala industry which he felt was old fashioned and out of touch with the market. "Kerala industry is stuck in tradition, they need to move along with the times. Doctors keep following the same method, same medicines, they don't give a thought to whether it is meaningful or not". He saw no future in the therapy market. He was trying his best to get new entrepreneurs to invest in new segments like nutraceuticals and cosmoceuticals, which he felt was the right direction for the industry to take. Talking about practitioner family based companies, he said there were around 60 companies in the two districts in Karnataka that bordered Kerala⁶⁴, "I won't consider them as Karnataka, take them away and add them to Kerala. Anyway, I will give 20 years, by then the tradition will go", he joyfully submitted, clearly relieved that the tradition was on its way out, giving a better chance for modernity.

2.12 Conclusion

Classical products resist commodification in two major ways. Firstly, they are limited to the humoral therapeutic context and therefore need the ayurvedic doctor to mediate consumption. Secondly, being open-source they do not offer exclusivity to the manufacturer. Ayurvedic industry

⁶⁴ Erstwhile DK district, one of the four regions pointed out by Mr. Ranjit Puranik as surviving traditional pockets of Ayurveda.

outside India broke these barriers by diverting commodities out of their conventional context. The first strategy was to reach the consumer directly through OTC commodities, the second was to sell ethical/prescription products through biomedical physicians. Both strategies circumvented the ayurvedic physician. Breakup of turnovers of large manufacturers shows that OTC products account for 70-90%, ethical products to 10-15%, and classical medicines to 10% or below. In complete contrast to this, manufacturers in Kerala, both big and small have remained faithful to classical products. The largest five derive 75-100% of their turnover from classical medicines. Even those companies with aggressive proprietary focus are invested in the classical market not only because it makes business sense, but also because it is essential to earn respectability in the therapy-focused Kerala market. In a nutshell, unlike the predominant trend in ayurvedic industry in rest of India to divert products to new channels to suit commercial logic, manufacturers in Kerala adapted a model of commodification without diverting commodities from their established paths.

Closer analysis of the Kerala distinction reveals the role of stakeholder-characteristics in differentially affecting trajectories of commodification. Unlike the business-professional led mainstream ayurvedic industry, Kerala industry is dominated by practitioner-manufacturers, who combine within them the roles of both commodifiers and gatekeepers. Unlike the pharmaceutical-focused mainstream, they have been heavily invested in providing therapeutic services, which I suggest has led to the preponderance of 'practitioner logic' over 'commercial logic'. Most of the manufacturers in Kerala had established their brand value in the medicine market over a long history of clinical practice. Unlike the sellers of blockbuster products, their clientele are ayurvedic doctors to whom they were committed to sell a whole pharmacopeia irrespective of the low market viability of individual products. Rather than being barriers classical product manufacturers saw ayurvedic doctors as essential to create a demand for therapy products by attracting patients. On the other hand, the large manufacturers of North India were significantly influenced by the biomedical market, both in terms of marketing strategies and profit margin expectations. Their strategies of diversion were likely to have been further precipitated by an already deteriorated status of clinical practice caused by ayurvedic doctors shifting their allegiance to allopathy.

I further argue that the agency model of distribution used by Kerala manufacturers played a significant role in making this mode commercially viable. It provided an exclusive channel for the flow of ayurvedic classical commodities; the therapeutic context was maintained because the mediator and the product were packaged together. It was not only convenient for the patients, but also for ayurvedic doctors who had a large classical pharmacopeia available at their finger tips.

However, amidst this overarching classical climate, a discordant note is visible in the past decade, that has accompanied the emergence of a new generation of consumers who prioritize convenience and palatability. A new breed of narrow product range companies have come up in the past decade focusing on the aggressive selling of OTCs diverting therapeutic products from their established paths. The cacophony of advertisements in the media and the turnover figures of a few of these products make it appear as if the days of the classical medicines are numbered. But whether this is a parallel or a subversive trend cannot be ascertained without further investigation. Firstly, turnovers of large manufacturers may not be an adequate representation of classical medicine consumption. It is important to note that there is a large unorganized sector comprising of unregistered practitioner-manufacturers on which there is no data available. Secondly, comparison of classical turnovers with OTCs and cosmetics can be misleading as these are independent segments in the market that do not eat into each other's revenue. Classical medicine manufacturers' move to expand into these segments might suggest a trend in 'diversification' rather than 'diversion'. Thirdly, it is not clear to what extent the reported change in consumer culture in Kerala is the result of expansion in the catchment of consumers rather than change in attitude of conventional Ayurveda consumers.

Further discussion on new trends in the ayurvedic commodity and service market will be taken up in Part three. As of now, though the growth of classical market may be slow it continues to dominate the ayurvedic industry in Kerala. Not only do the traditional stakeholders profess continued allegiance to classical products, even the new generation proprietary manufacturers as they grow in size, aspire to participate in the classical market. There is also a likelihood that increasing popularity of Brand Kerala Ayurveda across India might regenerate a hitherto absent market for ayurvedic treatment services which in turn may inspire a revival of the classical market in other parts of India.

CH 3 ROOTS OF THE DIFFERENCE

Availability of a large pool of ayurvedic practitioners linked to the practice of a common classical pharmacopeia was a pre-requisite for the growth of an industry based on classical ayurvedic commodities. Without the advantage of scale, open-source classical products with their narrow profit margins are known to be financially unviable for mass production and distribution. Within a few years after its establishment in 1902, Arya Vaidya Sala began to be flooded with inquires from vaidyans from the nooks and corners of Kerala. The diffused practice of Ayurveda across various castes and communities in Kerala is likely to have played a role in producing this human resource. Unlike the Sanskrit-heavy tradition that was restricted to elite Hindus, in Kerala, classical ayurvedic practice was not restricted to the traditional elite. Section 3.1 provides an overview of this culture of practice, supported by ethnographic evidence in Section 3.3.

Though mainstream discourse in Kerala toes the lines of Hindu revivalist reconstruction of Ayurveda (Section 3.1.1), both the elite rung of Brahmin practitioner families and non-elite Ezhava community trace their tradition to ancient Buddhist legacy (Section 3.1.2). Ashtanga Hridayam (AH), the last of the classical triad of compendiums written by Buddhist sage Vagbhata (C. 7th Century CE) played a significant role in popularizing Ayurveda in Kerala. Besides this, proliferation of vernacular language texts also contributed to the popularization of classical ayurvedic knowledge. Consequently, vaidyans of various hues and backgrounds shared in common the knowledge of a classical pharmacopeia, thus creating a ready market for classical products.

In Section 3.2 I suggest that there is nothing unique about the medieval history of ayurveda in Kerala, in terms of proliferation of vernacular texts or in the significance of Buddhism in contributing to the popularity of medicine outside the Sanskrit tradition. Evidence from other parts of India shows the involvement of various reformist sects in the dissemination of medicine in the medieval period. I argue that developments in the recent past that were unique to Kerala helped in empowering an existing vibrant community of vaidyans to upgrade their knowledge to meet the demands of modern professionalized practice and enabling them to participate in the new entrepreneurial environment. The most important of these are: social reform movements of the 18th-19th century and continued state

patronage to ayurvedic education and practice during and after the colonial period.

3.1 Transcending class, caste and religion: Ayurveda in Kerala

“What is special about Kerala is that vaidyans from various castes and communities have been practicing and continue to practice Ayurveda”, the Secretary of Keraleeya Ayurveda Samajam (KAS), Mr. M. Muraleedharan, asserted with pride. The institution welcomes its visitors from a mile’s distance with a supersized hoarding overlooking the Bharatapuzha river declaring itself “the world’s first Ayurveda Center.” It was founded in 1902 by some of the most illustrious and elite physicians under the patronage of the erstwhile kings of Cochin and Malabar. This is also a staunch ‘purist’ institution in Kerala known for its opposition to modernization. Talking about Ayurveda, another trustee of the institution expressed pride in its popularity among common people across Kerala. There was no attempt to present a glorified history of the institution, its royal heritage or its elite base; the pride was instead about the mass appeal of Ayurveda. Though he emphasized the uniqueness of their organization in maintaining the sanctity of tradition, it was not aimed at a select elite, but to the hoi polloi who had the ability to recognize authenticity by sheer strength of habit.

That the statement on the pan-communal nature of Ayurveda was not mere discourse was more than evident by the fact that the institution’s ayurvedic medical college managed under the auspices of monastery of Shankaracharya (the architect of Hindu revivalism) was headed by a Catholic nun. A soft-spoken lady with a lifetime of medical experience, the principal of PNNM college, Dr. (Sr.) Donata is among the most respected of the senior scholars and practitioners in Kerala, who was previously the chief physician of the Amala Ayurveda Hospital, the ayurvedic wing of the Christian missionary run biomedical hospital historically reputed as a cancer treatment and research center. She is the first catholic nun from Kerala to get into ayurvedic practice, though today it is common to see nuns from various Christian orders in ayurvedic practice Sister



Malayalee Christian Nuns visiting the Global Ayurveda Festival in Trivandrum, 2012

Donata's entry into Ayurveda was fortuitous; she was requested by a priest to change her choice from allopathy to Ayurveda as he felt they had too many allopathic doctors in the church establishment, but none specializing in Ayurveda. Sister Donata found nothing discordant between her religious role and Ayurveda. For her, faith and spirituality were important in the practice of ayurvedic medicine, but this was unaffected by religious persuasion. Secularism, for her, meant not indifference to religion, but an ideology tolerant and inclusive of multiple faiths.⁶⁵



Dr. Verghese Pattarumadom at his office: on the display shelf are credentials, awards, an idol of the Hindu God of Medicine Dhanwantari, and a painting of Jesus

This is an oft-expressed sentiment. Dr. Verghese Pattarumadom, a third generation doctor from a Syrian catholic Christian vaidyan family. His grandfather acquired the knowledge of medicine from a brahmin guru. Dr. Verghese had the advantage of rigorous formal training, in addition to learning at home. Before entering the Diploma program, he attended a Sanskrit school that his father was intent on sending him to, despite it being a 13-14 kms walk through wilderness. A framed picture of Mary, and a sculpted idol of Dhanwantari, the Hindu God of medicine, adorn his display shelf along with the framed degree certificates.

narrates the story about an elderly Hindu couple who had come to him for treatment eight years ago. Seeing him lighting the lamp and praying every day before commencing the treatment, they were impressed. The identity of the God in question was irrelevant; faith conveyed discipline and commitment. Since then, he said proudly, "For the past seven years, they have been coming to me every year for a month's wellness treatment". To be pious was what was important, whatever be the sect and whoever be the god. This is a message often expressed by practitioners who see faith as an important marker of a disciplined life free of vices, and also a cushion that protects from the stresses and strains of everyday life.

⁶⁵ I probed into this question reluctantly, with the sole purpose of getting verbal evidence for an otherwise palpable lived experience.



Hand painted images of Jesus displayed with vaidyan credentials in an ayurvedic medicine shop

For *Vaidyan James Mathew*, a Syrian Christian practitioner in his early 60s, ayurveda is not only not antithetical to his faith, it becomes an instrument in furthering his religious goals. An unlicensed practitioner he runs a small clinic-shop in eastern Kerala. This is possible only because of his interior location in a migratory region; there are no established stakeholders here to alert authorities. His shop

attracts attention with its picturesque walls, adorned with hand-painted images of Jesus all over, both on the inner and outer walls. He is proud of the art work that he himself has created. He had begun his training with his vaidyan father, but unable to tolerate his dictatorial methods, he ran away from as a teenager. apprenticed under gurus of various hues. At the end of the interview, he presented me with a self-published priced booklet that combined catholic evangelization with medical advice.

Another example of fluidity in ayurvedic practitioners' concept of faith and religiosity comes from *Dr. Raghavan*, a pious Hindu Ezhava practitioner. A BAMS degree holding doctor in his mid 40s, he is among the minority of ayurvedic doctors who use astrological knowledge to guide diagnosis. Watching his consultation processes, I found him to be a stickler to the holistic view of disease etiology, of investigating into social and psychological causes of illness. Every time, before writing the prescription, he would close his eyes and meditate, claiming he did it based on divine guidance. Though he was seeking guidance within a Hindu religious framework, that did not limit the purview of his spiritual guidance. Among his success stories is an interesting case of a middle aged Muslim lady. By divine guidance he diagnosed her illness as caused by defaulting on a religious obligation; she admitted to it only after much probing. He advised her to attend to it without delay, and he claims that as soon as she performed it, she was cured of the ailment that she was long suffering from.

"Religious identity has no place or relevance in *Kalari*" says Mohammad Gurukkal, a Muslim marital art practitioner-vaidyan in Thrissur. In the pre-British educational system, *Kalari 'ashans'*

(masters) often doubled up as pre-school teachers. With *Kalari's* growing popularity, Hindu mothers have been bringing their children to him to conduct the ceremony of *Vidyarambam* (Hindu ritual initiation to education). Gurukkal religiously lights the lamp and does *pooja* (worship) to the idol of *Kalari Paradevata*, the goddess of *Kalari*, a form of Hindu goddess *Bhagawati*.

A poignant illustration to the cultural difference between Kerala and other parts of India comes from the account of an AVS agency owner in Bangalore. A Christian entrepreneur from central Kerala, *Michael* opened an ayurvedic agency in the outskirts of Bangalore after he failed in his earlier business, choosing the location because of a significant Malayalee presence. Though he also gets local customers, his experience with them is not as positive.

The Kannada people are difficult customers to handle. They are unfamiliar with ayurvedic medicines and are unwilling to consume bitter decoctions. They often request the doctors for more palatable medicines. There were some who even came back with the medicines, though the doctor, especially the one who hailed from Kerala, insisted that they consume the medicines.

Though he has two part-time doctors on his rolls, customers are prone to asking him for medicine advice prompting him to stock proprietary medicines, especially hot-selling categories like anti-obesity. In stocking these medicines, he knew he was transgressing the manufacturer's policy, but he says outside Kerala, it is difficult to survive only on classical medicine sales. The most interesting part of his narrative was his experience with local people associating Ayurveda as a Hindu brahmanical practice.

People around here seem to think that Ayurveda is a Hindu, that too a Brahmin business! Many of them assume from my looks that I am an elite Brahmin. I don't try to dispel their notions; it is good for my business. As you very well know this is not how we think in Kerala! Some customers get confused when they see this picture (pointing to the large framed photo of Jesus hanging on the wall). One customer even asked me, "when did the Christians buy up the Arya Vaidya Sala?" There is no point in explaining to these people, they won't understand.

A Keralite, functioning in an outside milieu, *Michael's* experience holds a mirror to the contrast between cultures inside and outside of Kerala.

3.2 Discourse Vs Practice

It was common for informants to mention that Ayurveda in Kerala is not restricted to elite Hindus, leading me to suspect it was part of a common discourse. At the same time, it appeared unconnected to any particular agenda, not targeted at any particular clientele. Though tourism has led to the marketing of 'tradition', a review of tourist ads shows that the focus is on the pan-Indian Vedic

tradition to confirm to the existing imagery in tourists' minds, both domestic and foreign. Why then do people emphasize on the secular nature of Kerala Ayurveda? Self-consciousness of the differentness of Kerala might have arisen in encountering a Hinduized version of Ayurveda outside Kerala. It might also be a part of the image of Kerala as an abode of communal harmony, again a self-consciousness arising from being juxtaposed with communal politics elsewhere in India. It is interesting to note that such sentiments and identities persist despite Kerala Ayurveda community's internalization of the Hindu revivalist ideology (Panikkar 1992) that shaped the development of modern Ayurveda (Leslie 1976).



Glenn Stone at an Ayurvedic hotel-spa: Image right to the elephant painting include an Islamic symbol, Krishna, Ezhava Guru, Jesus. On the counter is a Ganesha idol and a therapy poster adorns the side wall

In most of India, prolonged Muslim rule between the 14th and 18th centuries had created a synthesis between Persian and Indian medicines to produce what Leslie (1976) terms 'syncretic medicine'. Revivalism in Ayurveda was closely linked to the re-invention of religion partly associated with the nationalist movement. European orientalists' quest for finding common roots in an ancient Aryan/Indo-European past heavily relying on Brahmanical interpretations of Indian society, led to a selective re-interpretation. Categories like "Hinduism" led to the forced categorization of all that lay in the grey area to the brahmanical ideal (Samuel 2008, Metcalf and Metcalf 2002). The protestant concept of 'religion' was imposed on an inherently pluralist spiritual geography of India, forcing groups with mixed identity into water tight religious compartments like 'Muslim' and 'Hindu' (Samuel 2008). The colonial administrative apparatus furthered the compartmentalization process for different ends ranging from revenue collection to strategizing military cohesion, further solidifying these categories through its census surveys and anthropological survey projects (Dirks 2001). Just as in religion, it led to

a re-interpretation of the present to match an imagined past tradition of medicinal practice, compartmentalizing *Muslim Unani* and *Hindu Ayurveda*, sidelining or co-opting discordant traditions (Sivaramkrishnan 2006, Banerjee 2009). Kerala escaped this part of the reconstruction because it neither had a syncretic tradition nor the divisive communal politics that characterized rest of India.⁶⁶ Being isolated from Muslim rule, Ayurveda in Kerala was uninfluenced by the alchemy dominant Persian medicine, staying closer to the classical herbal tradition (Svoboda 1992).

Though mainstream ayurvedic discourse in Kerala may toe the lines of the larger revivalist theory, it has not made much dent in the everyday culture of practice. To get a glimpse of this culture one does not have to dig deep. A good place to begin would be the Arya Vaidya Sala (AVS), the largest ayurvedic manufacturer of South India. An outside visitor to the town of Kottakkal in Northern Kerala might be taken aback to see the bastion of Kerala Ayurveda wedged in a town that looks and feels like mini-Arabia. It is not easy to locate a vegetarian outlet in the town that reeks with the spicy aroma of *Malabar biriyani*, and abounds in grills that churn out *mutton kabobs* and *shawarmas* by the dozen. Malappuram, the district in which Kottakkal is located has 32% of Kerala's Muslims, who account for around 66% of the district's population. People of AVS who are predominantly from the founding Varier caste⁶⁷, who belong to the minority Malayalee vegetarian population (an estimated 2%), do not forget to provide specific directions to the few invisible vegetarian food outlets for their non-local visitors.

The founder of AVS was especially known for his close relationship with the Muslim community hailing back to the period when he shielded them during the famous *Mapilla Rebellion*⁶⁸. During the period of my field work, one of their annual founder's day celebration was presided over by the State President of the Indian Union Muslim League, a minority political party. The forty families who supply fresh herbs to AVS are Muslims, who grew with the institution from small time herb collectors to become powerful stakeholders in the fresh herb market. Despite the imposing presence of AVS with its two hospitals and medicinal gardens occupying most of the real estate in and around Kottakkal city, right under its nose there are numerous other small pharmacies that hail from local traditional

⁶⁶ The festival culture of Kerala is also unique. The secular harvest festival *Onam* celebrated by all religions is the State festival. There is a conspicuous absence of popular Hindu festivals like *Diwali* and *Dusharra*.

⁶⁷ One of the Ambalavasins (temple-dwelling) group of castes, who assist Brahmin-priests in daily maintenance of the temple.

⁶⁸ Armed uprising of Mapilla Muslims of the Malabar against the British in 1921.

practitioner families, mostly Muslims. Though some establishments combine Unani with Ayurveda, the presence of Unani is weak. The data speaks for itself, in all of Kerala there is a single drug manufacturing unit and a single government dispensary for *Unani*; and it accounts for a paltry 0.4% of the ISM practitioners.

The revivalist ideology buttressed Ayurveda's image of golden past accusing Muslim rule and Buddhism for its decline (Leslie 1976). Paradoxically, Buddhism along with a variety of ascetic traditions other than Buddhists were involved in the practice and dissemination of medicine both in the pre-compendium and post compendium period. Between 6th and 12th centuries CE, Buddhist Universities played an important role in the systematization and dissemination of ayurvedic education (Zysk 1998). Overemphasis on Sanskrit classics that were considered to be representative of the pan-Indian ayurvedic tradition, has led to lack of attention to regional traditions and histories (Chattopadhyaya 1977). A handful of scholars of ayurvedic history have made up for this lacunae⁶⁹. Varier's (2005) semi-academic account of the history of Ayurveda with focus on Kerala, Ayurveda in 14th-17th century Andhra (Hymavathi 1993) and history of medicine in early 19th century Punjab by Sivaramakrishnan (2006)⁷⁰. These accounts provide a glimpse into a medieval past that was a potpourri of religious and medical traditions parallel to the Sanskrit-Vedic tradition. Proliferation of regional ayurvedic texts were important in facilitating liberalization of access. The *Bhakti* (devotion) movement, an anti-caste humanist social reformist movement that swept across India around 12th century led to the strengthening of vernacular literature (Pande and Zide 1965) providing non-elites access to knowledge. Continuing with the Buddhist missionary use of medicine as an arm of religious expansion (Zysk 1998), in the medieval era various sects vied with each other in providing medical education (Hymavathi 1993). In 19th century Punjab there was a co-existence of two distinct streams of practitioners, elite brahmin practitioners and a medley of Hindu, Jain and Sikh ascetic orders. The latter strived to diffuse ayurvedic education to new centers where there was no traditional concentration of Sanskrit *patashalas* (schools). Practice of medicine provided them with both a means to livelihood and support from local community for their monastic settlements (Sivaramakrishnan 2006).

⁶⁹This statement is limited to historians of Ayurveda; scholars who have studied the history of Tantra, Buddhism, Jainism and historians of ancient India have paid attention to ascetic traditions.

⁷⁰ This statement is restricted to literature accessible in the English language.

Ayurveda also had several other influences, apart from Vedic and Buddhist sources, Tantric⁷¹ schools of thought were an equally significant influence (Kurup 1996). Kerala is considered a hotbed for astrological and magico-religious traditions that might have got relegated to background both owing to the Vedic-centric ideology of revivalism and modern rationalist movement. The branches of Agadatantra (toxicology) and Bhutavidya (psychiatry) are said to have drawn much from Tantric traditions (Nambisan 1996). Ayurveda in Kerala is also influenced by Siddha, especially in the regional practice traditions of Southern Kerala (mainly Trivandrum) bordering Tamil Nadu. In fact, until the modern compartmentalization, vaidyans drew their knowledge from eclectic sources irrespective of their lineages. It would have been difficult to differentiate between an Ayurvedic and Siddha practitioner in certain regions or between Ayurvedic and Unani in certain others. As mentioned earlier, the revivalist discourse ignores the various influences and the regional diversions that diverge from the static 'Vedic' view of ayurveda. Varier (1996: 41) points out that to call Kerala as the cradle of Ayurveda goes against facts, but "the claim is generously allowed by lovers of Ayurveda elsewhere also due to some features which are pleasing to them". By doing this, both parties take advantage of each other. Ayurveda in Kerala becomes the representative of what is considered classical and pristine and a straw to hold on for the drowning prestige of Ayurveda in rest of India. And in the Sanskritized identity of modern mainstream Ayurveda, Kerala gets to claim a direct historical legacy.

What I mean by 'classical Ayurveda' in this dissertation, is not restricted to the view of a classical tradition frozen in texts, but to a fluid and shared tradition of Ayurveda. It includes regional variations and unwritten practitioner metis, but is linked to a collective culture that draws on one or another of the recognized classical compendiums of ayurveda as a base for theoretical framework. Such a collective culture had led to a certain extent of *commonalty in the pharmacopeia used*, that drew from Sahasrayogam and Ashtanga Hridayam and from other local texts. When mass production took off in early 1900s there was a large pool of doctor-consumers who shared the knowledge of a common pharmacopeia in order to provide a viable consumer base. It is also likely that the classical pharmacopeia we see today was partly produced in the interaction of manufacturers and practitioners

⁷¹ *Tantric = of Tantra*. "Tantra is a system of internal sacrificial rites that uses the inner environment to influence the outer environment" (Svoboda 1992:58).

through a mass distribution system, leading to some extent of homogenization. When the State manufacturer, Oushadhi, was formalizing production in the era of Cochin kingdom (estb. 1941), a committee was formed with five reputed vaidyans who after 14 sittings prepared a manual called *Ayurveda Nirmana Kramam* (Method of Manufacturing Ayurveda). The founder of AVS also wrote a similar book in the early 1900s, besides producing a book on medicine indications and dosages. However, in the early years AVS promised the doctors that they would also make medicines based on advance orders.⁷² Vaidyans' orders would have helped manufactures to gauge the nature of demand, eventually contributing to the evolution of a common pharmacopeia.

3.3 The Buddhist connection to Ayurveda in Kerala

Unlike many regions in the Himalayan belt, Kerala does not have a direct claim to ancient Vedic heritage. Kerala's connection to Ayurveda comes through Buddhism, a legacy claimed by two major but distinct groups of practitioners in Kerala, *Ashtavaidyans* (elite brahmin practitioner families) and *dalit* (subaltern) Ezhavas. This is counter-intuitive because there is no trace of Buddhism left in contemporary religion or culture. But there was reportedly strong Buddhist and Jain foothold in the early centuries of the common era, a history that lies buried under Hindu temples.⁷³ This is not surprising given that Kerala was the seat of the pan-Indian Hindu revivalist movement in 10th century led by guru *Shankaracharya* who hailed from Kaladi in Central Kerala. Incidentally he was also known as '*Prachanna Buddha*' (Buddha in disguise)⁷⁴. Several linguistic examples are cited for the Buddhist connection. The Buddhist term *Margam* (path) is used in Malayalam equivalent to 'religion' (Thirumulpad 1977). It is claimed that schools attached to Buddha Viharas made literacy and other branches of learning widespread. The Malayalam term for school, *Pallikoodam* (Palli = Buddhist monastery) is cited as a supporting evidence (Murali 2004). In evaluating the factors that had led to high literacy rate of Trivandrum in early 19th century, Tharakan (1984) draws evidence from historians that show a rich history of indigenous school education. Based on these studies, he argues that

⁷² For example, an advertisement in their medical magazine *Dhanwantari* in early 1905, tells doctors of their intention to be producing *Ksheerabala 101* asking those interested to place order (medicine takes 4-6 months to produce). Two issues down the line, an apologetic posting in the magazine informed doctors that the medicine was already sold out in advance (AVS 1905).

⁷³ I visited one such temple, *Kallil Kshetram* in Ernakulam, originally Jain, now brahmin-run.

⁷⁴ After training himself in Buddhist logic he defeated Buddhists in scholarly debates across the country. He then went on to establish four powerful Hindu monasteries, again influenced by the Buddhist religious organization.

pallikudams or kudipallikudams had popularized basic education among non-brahmin communities. He further cites research studies that trace the origins of such schools to early Buddhist and Jain influences.

The elite *Ashtavaidyan* tradition is shared by 18 Namboothiri brahmin families who claim to be the first to learn Ayurveda from the Buddhist physician-scholar Vagbhata (C. 600 CE)⁷⁵. Today it is perhaps the only tradition classical medical tradition in India that can boast of an unbroken continuity with the classical past, also providing Kerala Ayurveda with its historical identity. Only eight of these families are extant.⁷⁶ The decision to practice medicine proved costly to *Ashtavaidyans* who were promptly downgraded to *Moosad*, a lesser caste of Brahmins, and were denied rights to conduct Vedic rites⁷⁷. Not surprising, given that even the Gods had to bear the brunt for learning the evil science.⁷⁸ Though *Ashtavaidyans* today emphasize on the Vedic heritage of Ayurveda in line with the larger revivalist ideology, they are not shy of talking about their Buddhist origins. They venerate the day of Vagbhata's death by refraining from reading the Ashtanga Hridayam; the house of Pulamanthol Moos where he is supposed to have lived and died is considered sacred. Some scholars suspect the veracity of Vagbhata's Buddhist origins. Some others trace textual connections. For example, Vagbhata's focus on "sorrow, its cause, its cure and the right path", and on "eight right paths" are connected to Buddhist thought (Thirumulpad 1977).

Ezhavas, a community in Kerala, who belonged to the lowest run of Hindu caste hierarchy also claim Buddhist legacy, but with a different history, as erstwhile Buddhists migrants from Sri Lanka. Though there is no evidence to prove the link, the story is strongly rooted in the oral traditions of the community, sufficient to inspire the late 19th century Ezhava social reformer Narayana Guru to contemplating a wholesale conversion of the community to Buddhism.

⁷⁵Vagbhata's Buddhist origins have been contested. But I give more weight to the version of *Ashtavaidyans* who have more reasons to hide than fabricate a story of Buddhist origins.

⁷⁶There are two interpretations for the meaning of *Ashta* (eight) in their names. The popular interpretation is that it signifies expertise in all the eight branches of Ayurveda. Another argument is that the name is derived from their being followers of the *Ashtanga* tradition of Vagbhata (Pande and Zide 1965).

⁷⁷As told by an *Ashtavaidya* and also by a temple trustee of a temple near Thrissur known for its four centuries of unbroken annual chanting of Yajur-Veda. This is not surprising because ancient Hindu moral codes considered medicine practice as impure. Physicians are among the list of impure persons not allowed to attend divine sacrifices. The Hindu moral code Manu Smriti (C. 1st century CE) states that the food given to or received from the doctor is as vile as pus and blood (Chattopadhyaya 1977).

⁷⁸ According to legends, *Indra*, the God of heaven denied rights to ritual sacrifice to *Ashwins* (the twin horsemen gods) because they were physicians. The *Ashwins* retrieved their rights after promising Chyavana, an old sage with a medicinal formula to regain his youth. Named *Chyavanaprash*, today it is the top selling Ayurvedic classical medicine in India.

There are two links in the popular lore in Kerala that connect to the wandering ascetic-*vaidyans* in the past. The lesser known of these is the cultural institution of *Aryan Kavus*, ‘sacred groves’ meant for wandering Buddhist monks who refused to stay at people’s homes; it was an elite privilege to be able to maintain such reserves.⁷⁹ Another link alive in public memory is that of *Lada Gurus*, itinerant medicine men who were spotted occasionally up to the late 90s. *Lada Gurus* came once a year on routine rounds, camped outdoors in the night on the farms of friendly hosts, accepted food and offered treatment in return⁸⁰. Occasionally they would part with secrets if they found someone deserving. Lakshmi, a 60 year old, illiterate single-root practitioner in rural Idukki specializes in treating hemorrhoids. A passing by *Lada guru* noticed her young son afflicted with acute hemorrhoids. Taking pity on his predicament, he told her the herbal formula to treat the problem, warning her not to part with the secret. The boy was cured; Lakshmi added the medicine to her repertoire. Over the years, her reputation for treatment for hemorrhoids has spread, bringing patients from distant villages.

However, mainstream ayurvedic discourse in Kerala is indistinguishable from that of rest of India; the highlight is on the Vedic heritage, with the Buddhist link getting only a passing mention. This is not surprising given that the architects of modern Ayurveda in Kerala primarily drew inspiration from Bengal⁸¹. Arnold cites the example of the indigenous revival in Kerala led by Arya Vaidya Sala, which he terms “a war on two fronts” that attempted to establish Ayurveda as an alternative to allopathy, while at the same time sought to “supplant what were seen as ignorant and superstitious folk practices” (Arnold 2000:179). Attempts to professionalize and standardize “adversely affected popular medical practices of non-literate groups uninformed by textual knowledge and unsystematized by formal training” (Panikkar 1992:308). Institutionalized indigenous medical system sought to “differentiate itself from local health care practices that did not identify with the larger tradition” (Cleetus 2007: 156). Despite their claim to Buddhist tradition, Ezhavas sought to integrate their

⁷⁹ ‘*Kavu*’ means sacred grove and though *Arya* has a Brahmanical connotation, it was a common reference to Buddhist monks. Today the village Punaloor Kavay in southern Kerala, is the only popularly known connection to this history.

⁸⁰ According to popular accounts, they hail from Andhra, were bearded and had the *Sanyasi* (ascetic) appearance. Some remember them as people with exceptional and mystic medicinal capabilities, others call them ‘quacks’. They appeared to be linked to the originally Buddhist Jangamas, who were traditional mendicants, about whom I learnt from an Ayurvedic doctor from Andhra Pradesh who belonged to this community.

⁸¹ Based on articles in *Dhanwantari* the first Ayurvedic magazine of Kerala started in the 1930s.

medical practices with the elites just as the reformist leaders moved away from initial plans to convert to Buddhism, instead choosing to locate themselves within the Hindu framework. In the desire for social mobility, the reformers tried to correct cultural practices considered ‘socially backward’ by the standards of more ‘refined’ upper caste practices. In Ayurveda, community-specific oral traditional knowledge was negated in the attempt to acquire access to the prestigious Sanskrit textual tradition. The architect of Ezhava reform Narayana Guru, a vaidyan himself, was “driving the point that faith had to be interpreted in the light of rationality, in the same way medicine also had to be based on logic and rationality. Thus claim to tradition was possible only through the integration of the traditional knowledge systems analyzed in the light of rationality” (Cleetus 2007: 163).

3.4 The role of regional texts in diffusion of ayurvedic knowledge

Given the modern Ayurveda focus on Sanskrit-centric literature there is little acknowledgement of the role played by regional language texts and associated traditions. The *Bhakti* (devotion) movement of the 12th century lead to the strengthening of vernacular literature (Pande and Zide 1965) that provided access to knowledge to the masses. Proliferation of regional medical texts (for example, in Telugu, Hymavathi 1993) was important in facilitating liberalization of access. In Punjab, schools run by the ascetic orders taught in Punjabi or Gurumukhi countering the Brahmanistic orientation of Sanskrit (Sivaramakrishnan 2006). In Kerala, regional texts played a prominent role in making medical knowledge accessible to across communities.

Most significant is the fact that the classical tradition of Ayurveda in Kerala was based on a compendium that was not accepted elsewhere in India. The last of the classical triad of compendiums, the Buddhist sage Vagbhata’s 7th Century CE text *Ashtanga Hridayam* (AH) was a redaction and integration of the first two compendiums, but is considered a masterpiece by the ayurvedic community in Kerala. Here Kerala shares a similar history with Tibet⁸². It is said that Vagbhata, a Buddhist convert, son of a reputed brahmin vaidyan in Sindh traveled across the country before landing in Kerala where

⁸² Tibet also received *Ashtangahridayam* along with Buddhism in the same period, that is around 7th century CE (Zysk 1998). It is now one of the two core texts of Tibetan medicine (Pathak et al 1997) and is known to be the source for the principal medical treatise in Srilanka (Liyaratne 2001).

he found his first followers, Namboothiri Brahmin families⁸³. At the end of his laborious work, caught up with anxiety regarding the potential reaction to his work, he wonders if his work will ever be accepted given that he was not a sage. He goes on to remark that he cannot help if people did not want to read his text and instead preferred to break their head and struggle over the tough classics (Thirumulpad 1977). In the following centuries, he was to be proven right. The orthodox medical tradition in North India stuck to the two oldest compendiums and resisted the third, perhaps because the author was a Buddhist or because they felt that accepting the simplified version would undermine their scholarship. “In the absence of patronage, orthodoxy arises where the tendency is to hold on to the old, pristine texts” (Thirumulpad 1977: 44-45). Perhaps Kerala was either not yet exposed to orthodox traditions of Ayurveda or even if it was, it would not have been as entrenched in tradition as elsewhere in India.

Because of its relative simplicity, AH must have been an important milestone in the evolution of Ayurveda in Kerala by popularizing a classical tradition otherwise restricted to erudite scholars⁸⁴. Traditional education in Ayurveda in North India was arduous; the student had to master four classical texts⁸⁵ to become a vaidyan. But in Kerala, by consensus of scholars, AH was accepted as both a necessary and sufficient requirement. An average Sanskrit student in Kerala began his learning with literature, progressing to grammar, logic, astrology, and the medical text Ashtanga Hridayam, in that order (Varier 2005). AH became part and parcel of Sanskrit education



Ashtanga Hridayam recital at the Annual Ashtanga Satram, Kanyakumari, 2009

⁸³ For this to be possible, there must have been an established network of Buddhist institutions though the only evidence for the occurrence of this event comes from oral history.

⁸⁴ Over the centuries several commentaries were written on the text, in fact no other compendium had as many commentaries written (Pathak et al 1997) indicating its popularity.

⁸⁵ Classical works of Charaka, Sushruta, Madhava and Chakradatta

whether one intended to be a vaidyan or not. This ensured a far wider spread of theoretical knowledge of Ayurveda in the population⁸⁶. In fact, the text is so central to Kerala ayurvedic tradition that the word *Ashtangahridayam* was used as synonymous to Ayurveda. An administrator's account in early 20th century says, "There are three schools of medicines prevalent in Travancore, viz. Ashtangahridayam, Chintamani and Yunani" (Nagam Aiya 1906: 551). With centralization of education and the dominance of North Indian practitioners in shaping policies, Ashtanga Hridayam found no place in the national Ayurvedic curriculum. It was only recently that practitioners from Kerala were successful in their efforts to get it incorporated into the curriculum, an achievement that the Secretary of the largest Ayurvedic manufacturing association in Kerala, proudly cites as a personal accomplishment during his tenure as a member of CCIM (Central Council for Indian Medicine).

It is not known to what extent scholarship in Sanskrit in Kerala was historically exclusive to Brahmins. Claims are made by some practitioners and scholars from Kerala that even when Sanskrit education was restricted, the language diffused across various Sudra communities. According to some, formal entry to Sanskrit scholarship was limited to Brahmins, but it diffused to Ezhavas and other non-Brahmin castes in two significant ways. Firstly, people from lower caste communities, especially Ezhavas worked as assistants to brahmin vaidyans in collecting medicinal herbs and making medicines, and thereby picked up both medical and Sanskrit textual knowledge. Secondly, it is attributed to the caste mixing that happened owing to the unique local sociological practice of *Sambandhams* (literally 'relationships'), formal alliances between Brahmin men, and women from non-Brahmin castes like Ambalavasins and Nairs (Unithiri 1996). Another view is that Ezhavas historically had access to Sanskrit education by way of their historical connection with medicine; though they had no access to brahmanical institutions they had learned vaidyan teachers to provide Sanskrit education to community members. Though there is no evidence to substantiate this view, such an eventuality cannot be ruled out – the medicine specialist Baid caste in Bengal were found to have historical access to Sanskrit scholarship despite being Sudras because of their access to medical texts (Dutt 1965).

A common mistake is to equate textual scholarship with Sanskrit education or with the knowledge of classical compendiums. Vaidyans in Kerala had access to vernacular texts that included

⁸⁶ This could explain the presence of non-practitioner scholars in Tamil Nadu (Sujatha 2007) and in Kerala until recently.

translations of classics, commentaries and diagnostic manuals written by local practitioners and scholars (Varier 2005). The most important of these, that can be called the bible of Kerala Ayurveda, is a practitioner's hand book in Malayalam called Sahasrayogam (literally 'thousand recipes'), of unknown authorship and antiquity. This simple book has made ayurvedic knowledge far more accessible to those without the advantage of scholarly training. Besides recipes that are arranged according to disease categories, it also has a section on diagnostics and therapeutic procedures written in simple and lucid language. There is no practitioner or raw drug seller who does not own a copy of this book, its popular reputation an index of the spread and popularity of Ayurveda in Kerala. Other examples of Kerala origin texts are Chikitsamanjari, Yogamritham, Vaidyamanjari, Arogyakalpadrumam and toxicology specific texts like Prayogasamuchaya and Jyotsnika.

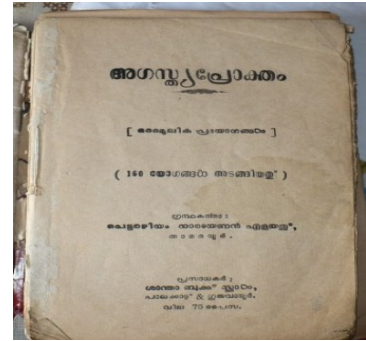


A traditionally trained vaidyan, leafing through Malayalam Ashtangahridayam to support his argument



A lady traditional vishahari vaidyan (poison-healer) in a remote rural region referring to a Malayalam toxicology classic

Reputed practitioner-scholars of Kerala have pointed to the significance of these texts (for example, Rajagopalan (1996), Varier 2005, Thirumulpad 2008). Rajagopalan writes about a book that used to be simply called ‘Chikitsa’ (i.e., Treatment) written in colloquial Malayalam that had made several modifications in some of the well-known formulations. Even those who are considered less theoretically sophisticated, like the *ottamooli* (single-root) practitioners⁸⁷ trace their tradition to *Chintarmani* (a Malayalam corruption of Siddha) and a popular text among them is *Agastyaproktam*, which has 160 single herb formulations. *Ashtanga Hridayam* with a section on single root medicines, is also considered to have been a significant source for their medicines.



A single-root practitioner’s personal copy of Agastyaproktam: the second line below the title says ‘inclusive of single-root recipes’

3.5 Roots of the difference

What contributed to the diffusion of textual knowledge across practitioners in Kerala binding them closely into a collective tradition of practice? Though there is plenty of evidence about involvement of various other castes in medicine (Leslie 1976), Sanskritic or scholarly education was limited to the elite castes (Sivaramakrishnan 2006). Buddhism was a missionary religion for which medicine was an important arm of expansion, and it had played an important role in the institutionalization and dissemination of ayurveda through medieval universities such as Nalanda (Zysk 1998). A somewhat similar, but more tenuous link to textual tradition has been documented in coastal Tamil Nadu, where 40% of the folk practitioners used local texts and palm leaves (Sujatha 2007). Here again, Sanskritic Ayurveda was paralleled with an equally vibrant Tamil scholarship of the *Siddhars*, whose legacy Varier (2005) traces to Buddhism in Andhra in 2nd century CE and to the Buddhist University of Nalanda in Bihar (6th to 12th century CE). But at the same time, there is also some evidence from other parts of the country of vaidyans from non-elite castes having access to ayurvedic education through vernacular languages mainly through non-brahmanical spiritual sects. For example,

⁸⁷ Practitioners who specialize in giving medicine to a narrow range of ailments (mainly urinary problems, hemorrhoids, migraine). Unlike others they are not considered to be learned in theoretical knowledge and are secretive about their medicines.

Sikhism and Jainism in Punjab (Sivaramakrishnan 2006). Medieval history of India shows a proliferation of various sects that carried forward the reformative and missionary spirit that was set in motion by Buddhism and Jainism (Hymavathi 1993). Another point to note is that vaidyans' access to textual scholarship was a point of divergence from the regular social order. Among lower castes across all communities, medicine was one of the few vocations that rendered the opportunity for intellectual scholarship; the other two being temple-masons and astrologers (Wood 1985). A concrete evidence for the significance of medicos access to Sanskrit scholarship, comes from Bengal. It is this access that made it possible for the medicine-specialist *Baidyas*, a Shudra caste to claim an upgrade to *Brahminism* (Dutt 1965).

Buddhism provides only a partial explanation for Kerala's unique sociology of ayurvedic practice. Some recent developments appear to have democratized access to classical Ayurveda, the most important being: 1. The unique character of social reform movement in 18th and 19th century Kerala and 2. State patronage to Ayurveda in both colonial and postcolonial periods.

3.5.1 Social Reform movements of the 18th and 19th century

Vaidyans from non-elite communities in Kerala gained access to Sanskrit education as early as late 18th century, a development that did not occur in other parts of the country until the formalization of ayurvedic education in the mid-20th century. The key figure in the late 19th century Ezhava social reform movement of Kerala, Narayana Guru, not only hailed from a family of physicians, but also got extensive Sanskrit education including the study of Vedic texts from another reputed Ezhava scholar (Wood 1985). The counterparts of the Ezhavas, Bhillavas in the border across Karnataka⁸⁸ and the Nadars in Tamil Nadu⁸⁹ provide a contrast. Both had similar historical background in medicine, but were not similarly empowered to participate in the modern evolution of Ayurveda's Sanskrit-centric scholarship. The difference has partly to do with the nature of social reform in Kerala. Heimsath (1978) makes a case for Kerala's uniqueness in the nature of social reform in comparison to

⁸⁸ Billavas in South Kanara (the district in Karnataka State bordering Kerala) are also toddy tappers, and have a similar history of social discrimination. The typical village medical practitioner, commonly referred to among Tulu people as *Pandit* (literally, scholar) belongs to this community⁸⁸. The twin heroes of the Tulu epic are Billavas and their mother was a medicine woman. When they died in combat, gymnasiums (*Garadi*) were set up all over Tulu Nadu in their memory.

⁸⁹ Nadars in Tamil Nadu have a similar profile: toddy-tappers, martial artists, closely associated with *Siddha* medicine.

rest of India. In contrast to the elite-led social reform in the British Indian provinces, social reform movement in Kerala began in 19th century among low castes. Also, unlike the elite social reformist leaders of British India, Malayalee elites did not see Kerala as a 'land of depravity'. Heismath attributes two reasons: the internal stability of Kerala, and women's status in the society. Neither was the society plagued by famine and war nor by the social evils of *sati*, *purdah*, widows, early marriage, that created the helplessness, guilt and self-approbation among social reformers in other parts of India. *Nambuthiris*, the Kerala Brahmins, unlike their counterpart in other parts of the country, remained aloof from English education and stuck to their orthodox lifestyles. Unlike most parts of India where social reform was led by a western educated rationalist intelligentsia who strove towards a western modernity, in Kerala, popularizing indigenous knowledge was seen as a respectable and socially uplifting activity. In the mid-1800s members from the Travancore ruling families had begun to teach ayurvedic medicine based on AH to the people of the state irrespective of caste-class hierarchies (Wood 1985). As a result, there emerged several Ezhava ayurvedic physicians who earned reputation in scholarship. Some went on to found academic institutions, hospitals and ayurvedic journals (Cleetus 2007).

Mere cultural capital, that is family tradition or access to elite education cannot explain the proliferation of *vaidyashalas* (pharmacies) across the barrier of class and caste. An important aspect of social reform was the proactive land reform policy of the State that began with Travancore kingdom as early as 1865 (Menon 1967). The ascendance of Marxist political power was instrumental in the legislation and implementation of progressive land reform policies the most important of which was Kerala Land Reforms Act of 1969, considered among the most radical in South Asia (Frank and Chasin 1994). Statistics on the status of land holdings in Kerala today showcase the successful implementation of policies. Per capita landholding averages are 0.13 ha of total land and 0.1 ha. of cultivable land, with 90% of holdings being below one hectare. Access to land must have enabled practitioners from all castes to build on their cultural capital equipping them with the basic infrastructure to be able to participate effectively in the commodified economy.

3.5.2 State patronage in colonial and post-colonial Kerala

In the pre-colonial period, royal patronage played a significant role in supporting advanced scholarship in various branches of knowledge. Sivaramakrishnan's (2006) study of medicine in 19th century Punjab demonstrates the role of the Lahore court in providing patronage for ayurvedic learning and practice. The Udasi Sikh order, a major beneficiary of land grants was able to disseminate ayurvedic learning and provide gratuitous ayurvedic treatment in their establishments (*akharas*). Besides ayurvedic medical schools, they also ran *bungas* (rest houses), which provided theological and philosophical instruction including medicine. One such Bunga had as many as 100-150 students and had reputed scholars as teachers. Colonial policies after 1849 led to withdrawal of grants to traditional intellectuals leading to the demise of the *Udasis*. Lambert (1997) points out that loss of royal patronage in Rajasthan led to the decline of *Pahalvans* (literally 'wrestlers'), specialists in bone setting and massage. Unlike regions under British influence, princely states that had relative freedom from colonial interference provided a better climate for indigenous medicine. Alexander and Shivaswamy (1971) found a high density of indigenous practitioners in Mysore which they attribute it to being a princely state. They point out that the difference in official patronage between princely states and Indian provinces under British rule was an important factor in producing inter-state variations in the status of indigenous medical practice. Princely States had greater autonomy and unlike the latter, their administration was geared to serve the natives.

Travancore kingdom's relative freedom from colonial interference

The Northern part of Kerala, 'the Malabar', was under direct British rule as part of Madras Presidency. The southern part was under the Travancore-Cochin kingdom, a princely state that came under indirect British rule in the early 19th century. In Malabar, the meager western medical care that was provided was targeted at the British minority and at the same time indigenous system of medicine lost patronage, which was not the case in Travancore (Devi 2010). Scholars who have studied Ayurveda in Kerala have acknowledged the role of Travancore kingdom in encouraging indigenous education (for example, Panikkar 1992, Cleetus 2007, Harilal 2010). Prominent ayurvedic practitioner scholars of Kerala also identify royal patronage of Travancore as the most critical factor that helped strengthen

Ayurveda in Kerala (AVS 2005, Jalaja 2009).

Though interest in western medicine led to a slackening of royal patronage to Ayurveda during the first quarter of the 19th century⁹⁰ and the last quarter of the 20th century, Maharaja Mulam Tirunal took favorable steps towards indigenous medicine. He carried on despite resistance by the British physician who was acting as a *Darbar* (court) physician. The government's involvement in indigenous medicine began with its supporting a private ayurvedic *Patashala* (school) established and run by a palace physician in 1886, the first of its kind in India. The King established a *Kashayapura* (decoction-house) for supplying medicines to the hospital attached to school. Soon, he took over the school and by 1917, ayurvedic education for doctors was further organized⁹¹. In 1918 the first large scale government Ayurveda hospital was established⁹², followed by more government hospitals and grants to private hospitals in various parts of Travancore⁹³. The government pharmacy also provided low cost medicines to the public. An important step was taken in 1895-96, with the introduction of grant-in-aid system to vaidyans and a subsequent establishment of an Ayurveda Department for grants administration. By 1938, there were 150 Grant-in-aid *vaidyashalas* (pharmacies) in the nook and corner of the kingdom that supplemented ayurvedic hospitals in urban areas. The dispensaries also included traditional specialties of toxicology, ophthalmology, *Marma*, *Siddha* and *Unani*. The government took measures to supply medicinal plants for *vaidyashalas* for preparing medicines. In 1935, government sanctioned cultivation of medicinal plants inside the Veli Pulayanarkotta Reserve in 150 acres of land (Devi 2010).

State patronage post-independence

Medicine in India is a subject on the Concurrent List of the Indian Constitution, that is, an area where the Central and State governments both play a role in legislation and administration and

⁹⁰ A European royal physician was appointed with a hierarchy of medical officers below him; vaccination and sanitary departments were established. The first hospital for public opened in 1817 and a medical school in 1860. During this period officials, intellectuals and missionaries were critical of indigenous medicine.

⁹¹ The period of education was extended from 4 to 5 years, a superintendent was appointed to supervise examinations. Successful candidates of 3rd and 5th year exams were awarded the titles *Vaidya Sastri* and *Vaidya Kalandhi* respectively. Students could specialize in any branch of Ayurveda after they completed the 5th year, for a term of two years, and on submission of a dissertation they would earn the title of *Ayurveda Acharya*. Those seeking proficiency in toxicology, would be given an alternative title of *Visha Vaidya Visharada*. One *Siddha*, and four Ayurveda high schools were founded to serve as feeders to the medical college. Ayurvedic manuscripts were collected, examined and published.

⁹² It had five OP sections, taking care of traditional specializations like *Marma*, eye, toxicology, surgery and pediatrics.

⁹³ Though funding to Ayurvedic hospitals and *vaidyashala* gradually increased, it was nowhere comparable to the funding for allopathy. The latter had a larger network. Statistics in 1930-31 showed that government institutions treated nearly five times as those treated by the indigenous medicine. However, this does not give a composite picture of health care because meanwhile several prominent vaidyans had launched private medical enterprises.

allocation of funds. The modern Indian State both at the central and regional levels continued with the colonial policy of privileging biomedicine. Up to 2002, all Indian medical systems together were supported by not more than 2% of the total central health budget, equivalent to the budget of a single premier biomedical institute (Sreekumar 2010). In the absence of State patronage various Indian systems of medicine survived mainly on the strength of consumer patronage. As a result, the manufacturing industry emerged as the biggest stakeholder surpassing the State. Consequently, despite its role as a regulator and certifier, the State remains a weaker force. This explains the industry's poor compliance of industry with State established pharmacopeia standards and lack of respect for CCIM that were observed by Bode (2008).

Unlike the Central government and most other regional governments, Kerala government continued with its sympathetic attitude to indigenous medical systems despite the officially privileged status of biomedicine. While at the national level, lack of patronage to indigenous systems allowed private sector to emerge as a major force, the Kerala government, with its manufacturing and treatment networks, provides a counterforce to the private sector and played an important role in maintaining affordability of medicine to masses⁹⁴. Beginning from mid 60s, a parallel primary health network of Ayurveda and homeopathy was created that has grown to 126 hospitals and 898 dispensaries that treat two to three million outpatients a year.⁹⁵

As far as the manufacturing sector is concerned, the State government's role as a regulator (licensing and inspecting authority) is little more than of a rubber stamp (see Section 9.4). Its most important role is in running the ayurvedic manufacturing company Oushadhi⁹⁶ which despite its service focus⁹⁷ is profit-making, and is one of the five largest ayurvedic companies in Kerala. In fact, it supplies medicines to several other State governments and is the largest of the public sector ayurvedic companies in the country. Though it caters mainly to the government system, it has around 600 exclusive sales outlets.

In the education sector, the Kerala government played a protectionist role by providing heavily

⁹⁴ In government hospitals and dispensaries, part of the medicine supply is free for the economically disadvantaged, the rest is left to the local administration.

⁹⁵ 2.2 million outpatients in year 2006-7. Source: Directorate of Ayurveda, Trivandrum.

⁹⁶ The pharmacy set up in 1941 to supply medicines to the Maharaja of Kochi and government ayurvedic hospitals in Thrissur was converted into a co-operative in 1959 and later incorporated as a Public Sector Corporation in 1976.

⁹⁷ 60% of its medicines are supplied to the government medical system at 40% reduced cost.

subsidized education. Since the introduction of the BAMS degree in late 70s, the government had kept the private sector under bay by strictly regulating licensing of education limiting it to established traditional stakeholders (i.e., five colleges, three state-owned and two grant-in-aid) keeping in check the number (190 per year) and quality of ayurvedic graduates. This policy was pursued despite losing revenue to neighboring states like Karnataka who had liberal educational policies that capitalized on demand from Malayalees. The historic role of the State as an anti-commodity force changed in the 90s when the State emerged as a major stakeholder promoting Ayurveda as a tourist commodity. Besides funding publicity drives, the government also participated as a direct stakeholder with its own tourist resort (*Tanneermukham*). The government's attitude to education also changed in favor of the private sector. Since liberalization of educational policy in 2000, 11 self-financing institutions have come up in Kerala adding 600 more seats per year.

3.6 Practitioner landscape of Kerala

Ethnography of ayurvedic practitioners in Kerala showed a diversity that is in some ways comparable to findings of researchers elsewhere in India, but also different in other significant ways. Elsewhere in India, though there participation in medical practice is not caste-exclusive, there is a gulf separating elite practitioners connected to the textual tradition and others. These others have been historically referred to as 'folk practitioners', a term considered politically incorrect today in anthropology, but similar terms are used in various regional languages (for instance, *Nati Vaidya* in Kannada). A brief review of literature on practitioner sociology in other parts of India would be in order here. Though classics of Charaka and Sushruta restrict practice of medicine to the three upper *Varnas*, in ancient India, medicine was far from being an elite profession; there was much ambivalence regarding the status of the vaidyan (Basham 1976).

It is clear from the medical texts that the vaidyas of early India were not a caste, but rather a fraternity of men drawn from various classes and castes ... united by a common training and discipline for the high purpose of promoting human health and welfare (Basham 1976:36).

As per ancient Hindu moral codes, medical practice was considered impure (See footnote 77) and was meant to be practiced by *Ambashtas*, a caste made up of mixed caste offspring (Chattopadhyaya 1977) though the only place where such a specialized vaidya caste emerged was in

Bengal (Dutt 1965). However, in recent history, there is no evidence of medical practice being restricted to the upper castes. Several communities of *Sudras* have been involved in the practice of indigenous medicine across India (Leslie 1976). This is substantiated by studies in different parts of India other, for example, Tamil Nadu (Sujatha 2007), Mysore (Alexander and Shivaswamy 1971) and Madras (Ramesh and Hyma 1981). On the other hand, advanced Sanskrit text-based scholarship in Ayurveda was found to be dominated by elite castes in the recent past. A survey of indigenous education in Punjab in the late 19th century found that ayurvedic learning was controlled by Brahmin pundits (Leitner 1882). This Brahmin-controlled Sanskritic mode of ayurvedic education of Punjab, “corresponded to the overall image of Ayurveda in India, which was in line with the practice and teaching of Ayurveda elsewhere in North India in early 19th century” (Sivaramakrishnan 2006: 15). Vaidyans in 19th and 20th century Bengal, referred to as *Kavirajas*,⁹⁸ were orthodox Hindus who followed strict religious rules; it was the commonalty in religious background that endeared orthodox patients to them in preference to an allopathic doctor (Gupta 1976).

The elite hold on Ayurveda appears to have continued with modernization. The modern revival of indigenous medicine was spearheaded by middle-class urban entrepreneurs of Brahmin and other higher castes (Leslie 1976). In Tamil Nadu, despite the modern ayurvedic colleges opening up the transmission of tradition, “the Sanskrit component remains central, and the modernization of Ayurveda, like its traditional transmission remains largely in Brahman hands” (Trawick 1992:130). Given this historic gulf between elite and non-elite practitioners, a distinction naturally emerged. On one hand were ‘professional’ elites trained in Sanskrit and on the other hand, were ‘folk’ vaidyans who lacked textual learning and theoretical sophistication. A possibility of the latter having exposure to vernacular texts was ignored, because in the revivalist frame of thinking, Sanskrit was the only legitimate medium of knowledge. No significant attempt has been made to investigate into sociological differences within the so-called ‘folk’ and ‘professional’ spheres of practice. While some scholars differentiate between the formal and folk traditions, others argue against the compartmentalization suggesting that it be seen as a continuum. The former apply the term Ayurveda to the classical tradition, the latter believe that all kinds of practices together constitute Ayurveda. The former

⁹⁸ Literally prince of verses, a title given to physicians in Bengal

assumes Sanskritic learning and scholarship as classical and all the rest as 'folk', ignoring the possibility of a permeable boundary between them. The latter approach pools everything together underplaying the differences. Neither pays attention to the nuances. Differences in social structure from state to state and consequent differences in the relationship between classical and oral traditions make it difficult to draw any kind of generalization from the existing scraps of data⁹⁹.

Kerala practitioner landscape has similarities with the rest of India. Prima facie there appears to be a historical elite dominance in Ayurvedic practice in the State. A group of Brahmin families constitute the elite rung of physicians (*Ashtavaidyans*), there is some evidence of Sanskrit education being restricted to the elite castes in 19th century in Northern parts of Kerala (Wood 1985) in contrast to Southern Kerala; the revitalization movement was led by landed aristocracy (Panikkar 1992). Despite this, it is possible to identify some distinctive features about the sociology of medical practice in Kerala. Firstly, though *Ashtavaidyans*, the elite rung of physicians were Brahmins, they trace their legacy to Buddhist tradition. Secondly, Ezhavas, a historically disadvantaged caste that is the largest contributor to the practitioner pool in Kerala, also claim Buddhist origins. Thirdly, men from the untouchable community of Velan were the default village pediatricians and women, default midwives. This is a fact worth special mention in a State known to have had one of the worst track records in caste discrimination in the country. Finally, Ayurveda in Kerala is not bound by religion, unlike most of India. There is no dearth of vaidyan families among Christians and Muslims.¹⁰⁰

While the connection of Brahmins and other upper caste Hindus to classical Ayurveda does not require much illustration, I present here some vignettes from field work to showcase the involvement of lower castes and non-Hindu communities in classical Ayurveda. The account is by no means representative of the actual proportion of practitioners in the population as the sample was not selected to represent sociological variables. The practitioner landscape of Kerala provided here is constructed from three sources: practitioners' personal histories, organizational histories from brochures of ayurvedic institutions and narratives of people other than practitioners including

⁹⁹ In the absence of data, generalization like North India/South India can be misleading. For example, Trawick's (1992) generalization of Tamil Nadu as South India is questionable given its distinctness from the other three South Indian States.

¹⁰⁰ In Kerala both religions were rooted in a peaceful historic antiquity, unlike rest of India where they were byproducts of political/territorial expansion. Christianity came in 1st century CE and Islam in 8th century CE. Unlike rest of India where the former came with colonialism in 16th century and the latter with Mughal invasion in 13th century.

consumers, modern ayurvedic practitioners and people working in the industry.

3.6.1 Christians and Ayurveda

Christians constitute 19% of Kerala’s population which is significantly large compared to 2.3% in rest of India. Interactions with practitioners and clients showed that Ayurveda was deeply entrenched in the culture of these communities. It does not take an in-depth sociological study to gauge proximity of Ayurveda to the Christian community in Kerala. A small Catholic church in Kottakkal calls itself the *Ayurmatha Church*¹⁰¹. A roadside hoarding of the Mother Mary Ayurveda Hospital in interior Ernakulam displays several images of therapeutic procedures, including poses of yogic meditation (*see image*). Practitioners from Christian communities were found across the continuum, ranging from *Ottamooli*



Ayurvedic Hospital, Kottayam Dt.



Ayurmatha Church, Kottakkal

(single-root) practitioners to Sanskrit-educated scholars from *Kalari* martial art practitioners to toxicologists. In fact, in the 17-18th century, Jesuit priests were known to have cultivated the knowledge of toxicology as an aid to community service¹⁰². Christian communities dominate raw drug trade in Thrissur market¹⁰³, many of whom have historical links to medicinal practice. Doctors from the

¹⁰¹ An adaptation of “Health of Mary” Church, inspired by the presence of Arya Vaidya Sala in the town.

¹⁰² From popular narratives.

¹⁰³ In 18th century, the king of Cochin had brought in and settled several Syrian Christian families in Thrissur with the intention of developing the city as a center of trade and commerce (Menon 1967).

community were also found in high level positions in the State¹⁰⁴.

Practitioners from Christian communities constituted 42% of the sample, closer to the population distribution¹⁰⁵ which included six degree-holders and six informally trained vaidyans. Of the latter, three were specialists, viz., a poison-healer, a veterinarian, and a bone-setter, fields in which there was less expectation of formal certification. Three were unlicensed general practitioners, of which only one was into active practice. Two had learnt from gurus, the rest from a family member. The poison-healer and veterinarian, both women, had inherited the tradition from their parents-in-law. Of the degree-holders, two were from practitioner families.

Of the 35 manufacturers in the sample, four were Christian owned, two of which have family history of practice. Kandamkulathy Vaidyasala in central Kerala has grown to achieve an annual turnover of ₹ 70 million (\$1.4 million), building its success over its vaidyan family reputation in the Thrissur-Ernakulam region. The second, Kalan Pharmaceuticals is an heir of the Kalan Vaidyan, a pioneer in selling branded medicine heavily advertized in dailies. Advertisement for their flagship products Kalan hair oil and a tonic was so popular that people in their late 50s-60s still recollect the advertisement verbatim. Fight for the family name 'Kalan' has led family members into protracted legal battles. Today the interior street in Nelayi village in Thrissur district is dotted with small companies, all carrying the name Kalan with different prefixes, none of them seeing eye to eye. The



Kalan Pharma MD talks about a intra-family trademark conflict case



Hoardings in front of the ancestral house of Kalan Vaidyan claiming legacy to the family brand

¹⁰⁴ The current Director of the State ISMH Department is a Christian woman from Kerala. Other illustrious members included Chairman of the State manufacturer Oushadhi, Secretary of AMAI, the practitioner association of Kerala, the President of the largest body of traditional Kerala practitioners, the Kerala Ayurveda Mandal and the Director of the ayurvedic industrial cluster.

¹⁰⁵ The four districts from which the practitioner sample was drawn from (Thrissur, Ernakulam, Kottayam and Idukki) accounts for 53% of the Christian population of the State.

family who inherited the ancestral house and company has put up a large hoarding on the street claiming itself as the only legitimate heir of the Kalan brand.

The entry of the other two companies into Ayurveda is recent. Everest Pharma is run by a business family from Thrissur whose entry into Ayurveda was fortuitous, inspired by a personal experience of miraculous recovery (for details see 5.9). Sahyadri is the brand name for the ayurvedic activities of an NGO founded by the Bishop of the Catholic diocese of Kanjirapally. Sahyadri announces its connection to 'the ancient Vedic heritage', their logo features the typical image of Hindu sage-guru with his disciple. They state in their brochure that all ayurvedic treatments begin with a prayer from Rig Veda¹⁰⁶. From a small company in early 80s, it has grown into a large establishment with a manufacturing unit, a full-fledged hospital and an ayurvedic resort. They are also pioneers in ayurvedic nursing training and in forging tie-ups with luxury hotel chains to provide ayurvedic services.

The community is also well represented in the treatment segment. One of the most reputed in Central Kerala is a 100-bedded hospital in Ernakulam run by Parathuvaylil family established in the 50s, reputed for the treatment of musculo-skeletal disorders. An example of a medium range hospital is Kayalvarath in South Kerala, the founder's biography illustrates prevalence of Sanskrit-education was not restricted to Hindus.¹⁰⁷

Varghese vaidyan was immensely inspired by the dedication of his father (a traditional vaidyan)... showed a keen interest to master Sanskrit language. At the age of 17 he was absorbed into the Ayurvedic College, Trivandrum...earned the title of 'Vaidyakalanidhi' with a first rank and gold medal...he spent a few years in the companionship of ayurvedic maestros putting into practice what he learned and later in 1929 set up his own 'Vaidyasala' in Perinad¹⁰⁸

Another illustrious Christian family-run hospital is *Sukhodaya* in Kottayam, one of the pioneers in the wellness market predating ayurvedic tourism (See Section 8.9). Now they have two hospitals, an ayurvedic resort; they offer a B.Sc degree in Panchakarma affiliated to a University in Rajasthan. The origins of this institution goes 3 decades back to a small clinic set up by the late Varghese vaidyan, an eye specialist from Kanjirapally, a village in Kottayam, dominated by well-to-do Christian rubber-estate owners. The website of the village Kanjirapally lists 22 odd existing and late vaidyans of repute

¹⁰⁶ Sahyadri, e-brochure, www.ayurvedaexcellence.com/html/treatments.htm.

¹⁰⁷ Parathuvayalil and Kayalvarath are institutions of which I have only indirect information from patients' reports.

¹⁰⁸ Kayalvarath Ayurveda Hospital, e-brochure, n.d. Accessed at <http://www.kayalvarath.com/history.php>

(with pre-BAMS degrees), 9 of which are Christians¹⁰⁹.

Matha Netrakanthi Siddha Vaidya Ashramam, an eye care clinic located in an interior village in the border of Idukki near Ernakulam, is run by Sister Theyamma, a Roman Catholic nun who hailed from a traditional family of eye-specialists. She rebelled and quit convent when she was not permitted to practice by her Church management. On hearing this, the Syrian orthodox church took her in and also provided logistical support for her to practice. She now runs this flourishing eye-clinic, assisted by the nuns from her convent. The demand for her services is so high that she has fixed consultations all days of the week in seven different locations, mostly under church auspices, in four surrounding districts¹¹⁰. The problem in her case was personal rather than religious; Roman Catholic church is not known to have conflict with ayurvedic practice, in fact, a Catholic Bishop in Kottayam district has reportedly provided space adjacent to his official residence for a traditional ayurvedic allergy specialist.

3.6.2 Muslims and Ayurveda

A Hindu practitioner-manufacturer in rural Ernakulam, talking about patients claimed that “Muslims are more passionate about Ayurveda than Hindus.” A graduate of AVS in the late 70s, he said that every batch of medical students had 3-4 Muslim students including women. This opinion was confirmed by Hafiza who had just finished her BAMS degree from AVS. She had qualified for the competitive Guru-Shishya (student-disciple) scheme of the central government that allows selected students to apprentice under prominent ayurvedic gurus. Religion she said was not an impediment for her education. In fact, there was a higher demand for women practitioners among Muslims, because of reservations about cross-gender consultation. But representation of Muslim community in the study sample is low because the community is concentrated in northern Kerala; the sampled districts accounted for only 14% of the population. The only Muslim manufacturer whom I indirectly met was a manufacturer-cum hospital owner KMK, in the role of a tourist service provider in a luxury hotel in Fort Kochi. KMK provides the following account of its founder in its publicity brochure,

Dr. K. Mohideen Kunju Lebba started his school education in a reputed Sanskrit school in Kerala. His interest in Sanskrit language made him to read many books written in Sanskrit. He graduated with first rank from government Ayurveda medical college, Trivandrum in the year 1949. He

¹⁰⁹ www.kanjirapalli.com

¹¹⁰ I met her clinic assistants, but this story is from other indirect sources: a practitioner and a fresh herb agent.

started practicing under Chavara Govinda Pillai, a famous ayurvedic physician belonging a family of traditional ayurvedic doctors. In 1951, he started his own ayurvedic clinic in a small way, in his house....At that time his close friend Dr. Faizee Ibrahim presented him with a bunch of 'Thaliolas' (palm leaf manuscripts) containing details of traditional ayurvedic medicines and treatments. This prompted him to go more deep into Ayurveda and Panchakarma¹¹¹.

The only Muslims in my sample of practitioners were two unlicensed vaidyans, a pediatrician and a bone-setter from *Kalari* (martial art) tradition.

Abdulla Kutti, an ayurvedic pediatrician, has inherited his tradition from his father. He practices from his home in rural interior Thrissur, careful not to display a board to avoid controversy. He does not need one anyway; he has been living in the same house where his father had practiced, and has inherited a legacy of reputation in the local community. He is frank to admit that his scholarship is patchy, knowledge of Sanskrit limited, and his learning being limited to hands-on training. He has studied relevant parts of the Ashtanga Hridayam, but mainly uses the text Sahasrayogam for his prescriptions. His father was a reputed vaidyan who studied Sanskrit and medicine from a reputed local Brahmin vaidyan family. His uncle graduated from the renowned *Ashtavaidyan* Alathiyur Nambi's *gurukula*¹¹². The family tradition continues with one of his sons who is a qualified ayurvedic doctor working in the Middle East.

Mohammad Gurukkal¹¹³, a 65 year old *Kalari* martial art practitioner based in rural Thrissur in Central Kerala, started his *Kalari* martial art school in 1969. He proudly states that two of his students were selected for the *Kalari* demonstration team for the upcoming Commonwealth Games in New Delhi. Now that Gurukkal is old, his son is the main instructor. Between the age of 10 and the founding of his own school, Gurukkal had studied under 12 different gurus. Even after that, he continued with learning, "There is so much knowledge, that there is no end to learning. Even at this age I am still ready to learn." As a child, he had no interest in school studies. After passing fifth standard with great difficulty, when he expressed his wish to study *Kalari*, it was met with stiff disapproval. His father had an impression that martial art education would lead to involvement in violence. But his grandfather, a *Vata* specialist vaidyan who knew the value of *Kalari* education, encouraged him and provided him with money to pay the fee, which used to be 50 paise per week then. "The situation is different now. Earlier even fathers were not interested in their sons learning, now mothers are bringing their sons and daughters¹¹⁴ to learn *Kalari*".

3.6.3 The Ezhava connection to Ayurveda

The *Ezhava* (alias *Thiyya*) community can be aptly termed chief custodians of traditional medicinal knowledge in Kerala. There are a large number of vaidyan families in this community who are known to have been practicing medicine for generations (Varier 2005). Consequently, some of the Ezhava families carry vaidyan as their family name. For a community that was historically kept outside the temple, with a specialization in the marginal occupation of toddy-tapping, the depth and expanse

¹¹¹ KMK Hospital, promotional brochure, n.d. Also available from <http://www.kmkayurveda.com/profile.htm>

¹¹² Gurukula is a term used to refer to residential master-disciple mode of education taking place in the Guru's house or in a space attached to Guru's house.

¹¹³ Malayalam respectful plural form of Guru, is a default term of reference to Kalari masters.

¹¹⁴ Kalari education for girls is not a new development, even in his young days there used to be girls learning Kalari. But he said that in Northern Kerala, it was far more common for girls to learn Kalari than in South.

of scholarship in Ayurveda has been noteworthy. An important, oft-quoted piece of historical evidence for the Ezhava medical expertise is Hortus Malabaricus, a renowned botanical classic, by Van Rheede, the 16th century Dutch governor of Malabar. The most important contributor to this tome was Itti Achuthan from an Ezhava vaidyan family. Ezhavas' reported Buddhist origins could explain their proximity to medicine, though it is not backed by historical evidence. However, there is historic evidence to show that some of the most prominent *Kalari* martial art practitioners in the war torn period between 14th and 16th centuries were from this community (Sadasivan 2000: 341), an additional explanation for their exceptional affinity to medical practice.

Though not as successful as the elite castes, the community has produced several illustrious entrepreneurs. An Ezhava practitioner proudly listed four large Ezhava owned companies¹¹⁵. Many practitioners from the community are active stakeholders in the post-tourist service commodification market. Keraleeya Panchakarma, an institution run by vaidyans of this community was recently acquired by the Birlas, one of the largest business houses in India. Dr. N. K. Padmanabhan Vaidyar, the owner Chairman of Nupal Remedies Pvt. Ltd. (turnover around \$20 million), is proud of the community tradition which he traces to his family's vaidya lineage 1500 years back to Sri Lankan Buddhist tradition. He claims that the 50 proprietary medicines he has so far designed were based on accumulated knowledge of generations.

The Ezhava vaidyans that I interviewed include four traditional practitioners of which two are *Vishaharis* (poison-healers), an eye specialist and a burn-cure specialist. Here are brief profiles.

Poison-healer, formally certified: *Krishnan Vaidyan*, based in rural Thrissur is highly qualified; he had cleared the *Vishahari* examination instituted by erstwhile Travancore kingdom earning a title and grant-in-aid offered by the State. His family has now geared up to new market opportunities by upgrading the family farm into a tourist resort. It now attracts a small number of clients from Germany where one of his sons, though not formally qualified, runs a Panchakarma center.

Poison-healer, uncertified: Kuttappan Vaidyan, based in rural Kottayam is in his late 70s, plagued by ill health but unable to retire because of constant demand from the local people. He started his studies with a Brahmin *Vishahari* when he was around 12; his father had requested that he be taken as a student after finding him uninterested in school. Instruction was mainly based on a subject text written by an erstwhile Kochi prince, besides relevant parts of Ashtanga Hridayam.

Ashokan Vaidyan, an eye specialist in his late 70s, is mainly occupied running his raw drug shop in a small interior town in central Kerala. He has an interesting family history. His father's younger brother had completed *Vaidya Shiromani* (a pre-BAMS degree) from Madras, but he died just when

¹¹⁵ Nupal, Kerala Ayurveda Limited (KAL), S.D. Pharmacy, and the Ayurvedic soap company Chandrika

he was about to start practice. His father was determined to get his children to follow his path. He sent his eldest son to study Ayurveda in the AVS college and he wanted another son to undergo a specialist training. That is how Ashokan went to study under a reputed traditional eye specialist. He managed to get entry only with a strong recommendation of a vaidyan, a family friend. In the five years of education, he did not have to pay fees. Besides serving as an apprentice, he supplied the *gurukula* with home grown agriculture produce. The guru has given him some *chembolas* (engraved copper foils) with verses on medicine, but he has no idea what language it is written in. All he knows is that it is a sacred tradition. He also studied some amount of Ashtanga Hridayam, but not thoroughly, and would refer to it for only for medicine recipes. He started practice at the age of 18, immediately after he finished his studies. Later, he worked along with his brother who set up a clinic after graduation, helping him with medicine making. This he said, was his most valued learning, something his college educated brother had little knowledge in.

Kumaran Vaidyan, a 65 year old *Pollal-vaidyan* (burn-doctor) who practices in a remote village in Kottayam district, is reputed far and wide for his expertise. People who know of his expertise, prefer his treatment to mainstream medicine because it is more effective and leaves no scars. His medical repertoire consists of a single medicinal ointment that he learnt from his mother's brother, a reputed Sanskrit scholar and vaidyan. He says he found classical ayurvedic medicine too complicated to study. He makes his living basically as a farmer. The practice of burn cure was just a hobby, a service he was providing free of charge until recently. He now charges a fee because prices of oil and raw drugs have escalated. Besides that, preparing the medicine also requires much time and labor that in his young years.

3.6.4 Velans, the default pediatricians

Popular narratives from central Kerala reveal that five to six decades ago vaidyans from the Scheduled Caste Velan community were the de-facto village pediatricians (*Bala Vaidyans*). Velan women specialized as midwives and were also in charge of postpartum care. The community's association with medical practice has been mentioned in the Tamil classic *Tolkappiyam* of the Sangam era (C. 300 BCE - 300 CE); medicine does not figure in its list of six duties of the brahmin (Varier 2003). Despite being untouchable, both popular and practitioner narratives reveal that vaidyans of this community commanded respect from all strata of society. P.S. Varier, the founder of Arya Vaidya Sala, was known to have frequented the Velan vaidyan in his neighborhood, to consult him when in doubt, a practice perhaps unthinkable elsewhere in India. Two vaidyan informants, one Muslim and another Ezhava, said their forefathers had learnt their trade from a Velan vaidyan. For example, when *Ashokan Vaidyan* (the eye specialist mentioned above) began his practice, there was a 90 year old reputed *Velan* vaidyan in the neighborhood. Kannan spent much time hanging out with him, and in the process he picked up many valuable tricks that he incorporated into his practice. There is a general feeling among practitioners that it is hard for others to match the expertise of vaidyans from this community. An unconfirmed popular theory claims that the Velan community got its tradition from the author of

*Bhela*¹¹⁶ *Samhita* (Murali 2004). Pointing out that some of the lost verses from the *Samhita* are found in Kerala's master treatise on pediatrics, Arogyakalpadrumam, Varier (2003) conjectures that the author collected the knowledge from Velan practitioners from oral or/and ancient manuscripts.

Before Ayurveda got formalized, every region was known to have had such a pediatric specialist, who serviced around 7-10 villages located around a radius of 10 km. But unlike vaidyans from other communities, the vaidyan families of Velans are not traceable anymore, at least in the areas that I studied¹¹⁷. The only source of information is the collective memory of elderly residents of these villages. *Rajashekar*, an elderly degree-holding practitioner in interior Ernakulam shared his recollections of a late Velan vaidyan who was his contemporary. The vaidyan had come to his neighboring town from a remote village, but had established quite a reputation in a short period of time. Though he was not well versed in textual knowledge, he was known for his *kai punyam* (best translated as 'prowess of the hand'). His son, a BAMS degree holder now runs his clinic-pharmacy in the town with a single sales outlet announcing specialized care and medicines for children's ailments. *Rajashekar* took care to caution me that it would be considered offensive to identify him by caste.

A traditional elite farmer from Thrissur now in his mid 60s, recounts his experiences with a Velan vaidyan in his youth. The vaidyan humbly referred to himself as *Dasan* ('servant') and slept in the elevated verandah whenever he stayed overnight like most non-family guests did, but he was treated royally. It was considered a privilege to have him come and stay; it was important that he was fed and paid well for his services so that he would not hesitate to come in terms of need. While all vaidyans commanded respect, being the children's doctor, Velan had a special place; he was a standard fixture in all social occasions be it wedding or funeral. Elderly residents of TA, an interior village in Kottayam district fondly remember KV for his services rendered for three generations, spanning over five decades. Here is a profile of KV built from the collective memories of the village residents.

Being the youngest of the uncles, informant Balan now in his early 60s was often sent on the run to get the vaidyan from his residence 7 km. away whenever a child took seriously ill. Once in a month, the vaidyan would go on rounds visiting households with children, inquiring if there was any requirement for medicines. A small fee would be given to him to cover the cost of medicine,

¹¹⁶ Agnivesha's Guru Atreya was known to have had six students, each of whom produced a thesis. Bhela was one of them. Agnivesha's work was redacted by Charaka, that is now considered the earliest foundation classic of Ayurveda.

¹¹⁷ Efforts to trace two such vaidyan families yielded no fruit, as the families had moved away from the region. Additionally, stigma attached to the caste makes it difficult to approach the subject.

and to compensate his trouble of coming over. However during festivals and harvest he would be liberally rewarded besides being given his share of harvest as per the patron-client system. KV had a small wooden medicine chest the size of a school instrument box, divided into several tiny compartments that held varieties of tiny hand-made pills, and a tweezers to handle them. The pills were to be ground with various substances, water, buttermilk, juices of fresh medicinal herbs. The weirdest prescription was fresh drops of blood from the chicken, the torturous process of acquiring it by making a tiny gash on the chicken, is indelible in Balan's memory. In case of complex illnesses he would prescribe decoctions or oils. The youngsters were put in charge of gathering and buying raw material. Mariamma remembers the countless times she had to run to the raw drug shop to buy raw drugs, hunt around in the farm and neighborhood for fresh herbs. In their large joint family, there would be one aunt or the other who would be in charge of making the decoctions. It was not much of work, the herbs had to boil constantly on a low flame, someone had to occasionally go and monitor the fire and keep the time. With the introduction of allopathic hospital in the region in the 60s KV's prominence came down, but he continued to be in demand till the end of 70s. He stopped visiting patients by mid 70s, but there was a steady flow of patients to his home which kept him busy. By mid-eighties, allopathic medical care had become highly established, and the schooled generation had begun to lose interest in traditional remedies. KV was known to have based his practice on a set of texts he had. He meticulously maintained a thick notebook that was choc-a-bloc with medicinal recipes. Abraham, a farmer whose family had utilized his services frequently, said that when he was a father with two young kids, KV had left his text with him and told him to copy recipes for some of the medicines he often required to treat common ailments (*shows a channel of flow of textual knowledge to the popular realm*). Abraham had made extensive use of the medicines for all his four children, but when the joint family broke up and he moved to the divided farm, he lost track of the recipes. KV's book was left behind in his ancestral house until taken away by his son two years ago.

3.7 Conclusion

Ethnographical evidence from Kerala points to a diffused culture of ayurvedic practice and consumption that transcends caste, class and religion, in contrast with Ayurveda's elitist Hindu image in rest of India. Though discourse in Kerala has been significantly influenced by the Hindu revivalist ideology, in practice there are stark inconsistencies. For instance, claiming of Buddhist legacy by both the elite *Ashtavaidyans* and subaltern Ezhava practitioners or the active participation of Christians and Muslims in the practice and consumption of Ayurveda. It is possible to conjecture the Buddhist heritage of Ayurveda could account for some of this distinction. However, besides lacking in evidence, this argument is weakened by a few, but substantial fragments of evidence of the involvement of various reformist sects in the dissemination of medicine across India in the medieval period. The historical continuity of colonial patronage in Kerala in contrast to the rest of India, is perhaps a better explanation. Colonial rule, by disrupting royal patronage to religious and medical institutions and by delegitimizing indigenous medicines in favor of allopathy had significantly affected the status of indigenous medicine in many parts of the country. Southern Kerala under the Travancore kingdom

escaped colonial interference to some extent and was able to continue with its support to indigenous medicine, despite switching allegiance to allopathy as the official system. This patronage continued in post-independent Kerala, with the State playing a significant role not only in running a robust parallel medical services in Ayurveda, but also in emerging as a successful competitor in the pharmaceutical market. The State's company Oushadhi is among the top five ayurvedic manufacturers in Kerala, which primarily focuses on providing subsidized medicine to the government medical system, a phenomenon which has no parallel elsewhere in India.

Royal patronage however may not fully explain the diffusion of classical practice across communities, which is better explained by the social reform movement in 18th and 19th century Kerala which had two unique characteristics that favored Ayurveda. Firstly, it was led by the lower caste unlike rest of India. Secondly, in contrast to the modernity-oriented elite elsewhere, for the Kerala elite, social reform meant democratization of access to advanced learning in indigenous traditions. The textual history of Kerala which is also connected to the Buddhist legacy adds some more explanation for the Kerala distinction in practice. In contrast to Ayurveda in rest of India that is based on the two oldest of the classic compendium triad, Kerala ayurvedic practice is founded on the third compendium written by the Buddhist sage Vagbhata. This text, a synthesis and a simplified version of the other two was so popular in Kerala that its name *Ashtanga Hridayam* was historically used as a default reference to the system of medicine, synonymous to Ayurveda. Whether the shift in usage towards Ayurveda or in fact 'Arya Vaidya' as popularized by Varrier, was influenced by the modern revivalist influence from rest of India, is a question worth investigating into. A parallel textual tradition in the vernacular (Manipravalam and Malayalam) ranging from commentaries on classic compendiums to drug recipe books also contributed to popularizing ayurvedic knowledge. This is also a factor that present in some other regions like Andhra Pradesh. Whether the vernacular textual culture was particularly strong in Kerala or whether a similar textual tradition existing elsewhere disintegrated owing to other factors like pre-colonial shift in power towards elitist traditions or disruption of patronage due to colonial rule, is a question that would require investigation. The most noteworthy of the vernacular texts was Sahasrayogam, a popular medical recipe book that was shared among medical practitioners of all hues

and levels of expertise, including raw drug shop keepers.

I conjecture that when AVS began to produce medicines in early 1900s, the Kerala wide demand for classical products would not have been possible if there was not an already wide pool of practitioners in Kerala who were familiar with the classical pharmacopeia. Because the demand was not restricted to a small group of elite practitioners which might have been the case in other parts of India, the Kerala practitioner market would have been sufficiently large to attract several companies that have over time established mainly as sellers of classical medicines. This includes not only the largest manufacturers of Kerala, but several medium and small companies and unregistered practitioner-manufacturers.

Historically diffused practice had created a consumer culture unique to Kerala. It had familiarized and habituated the masses to a classical mode of medicine consumption. A classical mode of medicine consumption would mean people's habituation to consulting ayurvedic practitioners when confronted by illness (in contrast to self-prescription or pharmacist-prescription), familiarity and faith in humoral diagnosis, familiarity with classical ayurvedic medicines (in contrast to branded medicines) and their tongue-twisting Sanskrit names, familiarity with the processes of simple medicine and readiness to expend time and labor on the making of medicines, familiarity and association with the tastes and smells of raw drugs and medicines and consequent ability to make judgments on quality, readiness to consume unpalatable medicines like decoctions, familiarity with local herbs and market raw material that regularly goes into the making of medicines, familiarity and readiness to follow *pathya* (dietary regimen), familiarity and willingness to undertake therapeutic procedures (that used to be traditionally managed at home with the help of knowledgeable assistants), faith and willingness to bear with complex protocols for lengthy periods of time. The significance of these would be evident from the ethnographic vignettes presented in Part two.

PART TWO

INDUSTRIAL COMMODIFICATION OF AYURVEDIC MEDICINES

DESKILLING, ALIENATION AND RESISTANCE

PROLOGUE

While commodification of ayurvedic pharmaceuticals in Kerala retained the integrity of Ayurveda as a system of diagnosis and therapy, it is difficult to ignore the impact of industrial concentration and mass production on knowledge and skill base of actors who are linked to ayurvedic commodities at various phases of its consumption and production, i.e., consumers, practitioners, raw drug sellers, medicinal plant collectors and herb traders. The focus of analysis in Part II is on the process of industrialization induced homogenization with emphasis on local practical knowledge at various nodes of the ayurvedic commodity chain. Scott's (1998) concept of *metis* provides the analytical framework to comprehend ayurvedic knowledge in juxtaposition with pressures of homogenization. *Metis* represents a "wide array of practical skills and acquired intelligence in responding to a constantly changing natural and human environment" (Scott 1998:313) in contrast to *techne*, which is comparable to science, signifying something that could be precisely and comprehensively expressed in the form of concrete rules, principles and propositions. Concepts of 'alienation' (Marx 1876) and 'deskilling' (Stone 2007) help in unpacking the nuances of the process of knowledge and skill loss that results from industrial commodification.

Industrial commodification can lead to deskilling in two ways, either by displacing the traditional skill-holder by providing a cheaper or better alternative or by taking away part of the process. Most traditional skills that went into oblivion post industrial era fall into the former category, for example, weaving, pottery. While it takes away part of the process, it does not displace the skill-holder but ends up mediating and altering the traditional process. In farming for instance, the industry provides inputs to farmers, but leaves the farming to them. Stone (2007) points out that deskilling process in the context of farming is different from the typical factory floor situation.

Since agricultural practice is dynamic, constantly changing in response to environmental variables, the farmer does not mechanically applied knowledge. Agricultural deskilling is not the displacement of a static set of skills but rather the disruption of an ongoing process of skilling...Whether they have the skill or not, farmers still have to make decisions about the use of technologies. There is a crucial difference between an industrial situation in which skill has no place and an agricultural situation in which skill is needed but cannot be acquired. Agricultural deskilling is not simply the automation of farm tasks; it is the degradation of the farmer's ability to perform, the ability and freedom to innovate. (Stone 2007: 73).

To understand what how industrialization affects Ayurveda, it is first important to understand

the structure of ayurvedic knowledge. It is comparable to other forms of traditional knowledge like ecological or agricultural knowledge in that it is produced in situ, is more embodied than theoretical and is *metis-heavy*. But it is different from the others by virtue of its being more in the expert realm than popular. It is significantly codified and institutionalized and hence more specialized and less widely distributed in the society. The doctor is the official mediator of both production and consumption of medicine. Unlike agricultural or ecological knowledge where the skilling process is hands on, the latter tends to have a theoretical component that demands formal instruction. However, given that knowledge has freely flowed outside institutions for centuries, there are several levels of informal knowledge that co-exists and sometimes competes with the official version of expertise. Commodification has brought into relief the struggle between institutionalized experts and various other levels of practitioners. Besides practitioners, ayurvedic knowledge of various kinds and degrees are also distributed across various nodes of the commodity chain, for example, with raw drug shop keepers, fresh herb collector-aggregators and so on.

Ayurvedic knowledge can be classified into three broad components, each of which consists of both theoretical and practical dimensions.

- **Diagnosis:** Theoretical knowledge of ayurvedic physiology, pathology, etiology and practical knowledge of evaluating physical parameters of the patient and arriving at a diagnosis.
- **Treatment:** Theoretical knowledge of various protocols of treatment including diet, medicine, and therapies, knowledge of daily regimen, pharmacology, pharmacological properties of the materia medica; practical knowledge of administration of therapies and familiarity with materia medica.
- **Making of medicines:** Theoretical knowledge of medicine making and practical knowledge of identification of plants, organoleptic knowledge of materia medica and processing skills.

The domains of theoretical and practical knowledge cannot be separated; one feeds into another. Much of the knowledge that goes into diagnosis and treatment can be characterized as ‘tacit knowledge’ (Polanyi 1958). The knowledge component of concern to this study, ‘medicine-making’ is based on a theoretical foundation but is equally or more heavily based on practical experience. Skills involved in medicine making are similar to that required in specialized cooking. For example, recognizing the right stage of *pakam* (syrup-thickness) in the making of *lehyams* (medicinal jams). As *lehyams* are expected to be shelf-steady for 2 years, it is important that the moisture content evaporates. But if the mixture gets overdone, it becomes hard and difficult to consume. Other

examples include:

- Recognizing the limit of boiling for ayurvedic oils, based on frothing
- Recognizing the limit of boiling for ayurvedic ghees, subsiding of frothing
- Recognizing the various stages of *pakam* syrup-consistency for ayurvedic oils depending on use, whether internal, external or for nasal drip application.
- Recognizing the smell and color of oils, taste of decoctions
- Recognizing the fineness of particle-size of (*Rekhapurnathwavam*)¹¹⁸, mineral-ashes.

Ayurveda presents a high complexity of material in the context of medicine designing and making. It is this complexity and variability that makes *metis* important at every node of the ayurvedic commodity chain. Application of rules of thumb is most valuable in situations that present a challenge because of their *variability* (Scott 1998). Classical medical texts often provide cryptic or incomplete information; doctors make their own connections and interpretations that often demands original, creative and more importantly, situational thinking. “Knowing how and when to apply the rules of thumb *in a concrete situation* is the essence of *metis*” (Scott 1998:316). Farquhar (1994) makes a distinction between ‘knowing’ and ‘knowledge’ in the context of Chinese medicine, a distinction that Hsu (1999:5) interprets as “the particular way in which Chinese medical knowledge is applied to Chinese medical practice.” She also points out that there are “styles of knowing” that differ “according to one’s perception of and attitudes to knowledge”(Hsu 1999:1).

All the three components mentioned above are closely interlinked in the practice of ayurvedic medicine. But for the medicine making component which is the focus of this study, the rest are comparable to biomedical knowledge. In biomedicine, medicine making is not the doctor’s domain; drugs, and knowledge related to prescription of drugs, flow from centralized institutions (academic institutions and private pharmaceutical companies) to practitioners. Unlike biomedicine that relies heavily on proprietary intellectual property¹¹⁹, Ayurveda depends on a large body of open-source knowledge, the foundation of which is laid in classical texts. This includes besides the theoretical framework of pharmacology, information on properties of *materia medica* and also recipes of standardized formulations. Over the centuries, several variations and new combinations got added, some of which are documented in regional drug manuals and recipe books. Some of it remained oral and passed down within families or *guru-shishya* (student-disciple) lineages. The innovations that are

¹¹⁸Literally means “ability to fill the lines”, the powder should settle inside the creases of the forefinger.

¹¹⁹Though with time, a lot of this becomes open-source in the form of generic drugs, but doctors or consumers have no knowledge or control in making the medicines. The practitioner is just a user, not a participant in drug innovation.

built over the classical knowledge by individual practitioners either fed back into the system or are enclaved as proprietary knowledge. Historically these remained as personal or family secrets and today when they get registered as proprietary drugs, they are protected as trade secrets.

Unlike a biomedical pharmaceutical company that produces the product and the knowledge, the ayurvedic manufacturer takes up only the ‘processing’ component. Manufacturers are well aware of this and do not pretend to be more than that. A respondent at AVS said that investing in R & D did not mean much to them because they were at the core just manufacturers and distributors of traditional products, other activities being incidental¹²⁰. So we see that like the seed industry does in the case of the cotton farmer (Stone 2007), ayurvedic industry takes up only part of the process; it supplies medicine to the doctor but leaves the diagnostic and treatment decisions to them. Therefore, like in farming, the industry has the potential to endanger only part of the skill. However, depending on the nature of input, it also has the potential to alter the rest of the behavior of the skill holders. The consequences are different for classical and proprietary medicines. In the case of a commodification model centered around proprietary – the knowledge flows from the industry to the doctor, comparable to biomedical pharmaceuticals. Though the doctor applies the knowledge, industry informs the doctor how and when to use the medicine. On the other hand, in the context of classical ayurvedic medicine, the industry replaces only the processing function. Since industry in Kerala has been predominantly oriented towards the classical market, it is this context that is relevant for the discussion here. Therefore the question to be asked is: If the ayurvedic industry is taking up only the processing skill, is the consequential deskilling worth being concerned about? After all, the separation of medicine-making from the practitioner was common among pre-industrial medical systems, for example apothecaries of medieval England (Kapil 1988).

There are two kinds of actors that ayurvedic industry has direct impact on – the doctor and the consumer. In Kerala, both were involved in medicine making. Doctors made complex medicines; simple medicine making was left to the consumer. There were also other actors in the commodity chain who got affected by industrialization: the retail raw drug seller and various actors in the upstream supply chain including plant collectors and traders. The raw drug seller has the highest potential to be

¹²⁰He was explaining why their venture into patenting led by some well meaning scientists did not yield useful results.

deskilled of all the actors because the raw drug commodity is directly displaced by the industrial commodity. As for the consumer and actors in the upstream supply chain, the primary problem is of alienation rather than deskilling. Because traditional knowledge is expert knowledge, concerns regarding consequences of industrial commodification would be paramount with regard to practitioner knowledge. The significance of knowledge of medicinal plants and of the knowledge of making of medicines in the training of the ayurvedic practitioner in the pre-industrial era has been noted by Banerjee (2009). In Chapter 4, I argue that the making of medicines is connected to cognitive processes that are part of the process of innovation in Ayurveda and the issue of deskilling has to be understood in this context. Further I argue that while the industry does contribute to deskilling of the doctor, the root of deskilling lies in the weakening of the skilling process that makes practitioners vulnerable to further deskilling. This weakening I argue is the result of the shift from the guru-disciple system towards modern classroom-lecture oriented institutions that were not adapted to suit the transmission of the metis component of Ayurveda.

Household involvement in medicine making in Kerala can be classified into two broad types – knowledge and use of home remedies and processing of simple classical medicines. To a certain extent industrial commodification can replace the former with OTC products, but in the context of classical Ayurveda we are mainly concerned with the latter. It is the simple processing of classical medicine like the decoction that is most threatened by industrial commodification. The relevance of this skill to the survival of classical Ayurveda is subtle and indirect. Medicine making connects people to the knowledge of raw drugs and local plant identities; this association plays a significant role in the active and passive conservation of these resources. It is the consumer culture that primarily kept the classical practices alive in Kerala till today, the significance of which is more than evident in its decline. Consumers' reluctance to make medicine indirectly threatens practitioner metis, by forcing them to shift their prescription habits in favor of industrially produced standardized formulations. People's habit and skill of making medicine is a barrier to the industry that tries to convince the consumer that their products are as authentic as home-made products, may be even more so because they use 'scientific' processes. In Chapter five, I point out the significance of commodification of decoction in distancing the consumer

from medicine making. However, in Kerala, the shift from home to factory is nowhere near complete. Classical ayurvedic product is comparable to the readymade *masala* market in that the users already have the knowhow to make the products. In this market, for commodities to be marketable, not only people have to be hard-pressed for time, prices have to be low enough to make them an attractive alternative. For open-source commodities, this is not easy, because of competition arising from lack of exclusivity¹²¹. Hence, despite the inroads made by finished medicine, there is sufficient evidence in Kerala of the continuation of a vibrant popular cultural involvement in medicine making.

The raw drug retail shop which is a key node of pre-industrial medicine consumption is most directly affected by industrialization of medicine production. The sellers are not displaced, but deskilling is inevitable. Being a raw drug seller demands a high degree of metis including identification of raw drug and some working knowledge of medicine and materia medica. Retail selling of factory processed ayurvedic medicine on the other hand, is an activity that demands no skill or knowledge. A description of metis involved in raw drug retail selling along with a discussion on the nature and status of deskilling is presented in chapter 6.

Large scale production increases the distance of raw material from the site of production and thereby reduces collector-manufacturer relationship. The alienation thus caused has effects at three levels: on production, on livelihoods of collectors and on the resource itself. For a vaidyan, a medicinal plant carries much meaning; it is not just a means to livelihood but the centerfold of the science - both the tool and raw material for experiments with medicine. This sense of meaning and ethos is communicated to collectors when they are bound in a close relationship with the vaidyan. Information asymmetry thus caused in the absence of such a relationship makes the situation conducive for overexploitation of collectors, resources and also threatens quality of raw drugs. Some extent of alienation had already occurred in the pre-industrial era in the context of large scale artisanal production, when vaidyan-producers began to rely on casual laborers for collection gradually losing their own skills of identification. Early manufacturers attempted to correct this by systematizing knowledge and training and maintaining loyal relationships, some of which still continue. Even if these

¹²¹ As explained in the first chapter, it was this low viability of classical products that had led first Dabur and other North Indian companies to move their focus towards branded products.

erstwhile collectors have now become aggregators, they are still bound in trust-based relationships with the manufacturers. But with expansion of the industry and increase in scale, source of raw material gradually moved further away leading to far flung networks of collection. Meanwhile, decline in professional collectors due to macro social and economic changes has led to a situation of dependence on casual laborers, a situation inimical to both quality of raw material and conservation. Chapter 7 is devoted to the discussion of alienation and deskilling in the local fresh herb supply chain, that includes a detailed account of both forest and non-forest streams of collection and a brief account of the nascent field of medicinal plant farming.

Prima facie it might appear as if industrial commodification has a major role in deskilling people. However, it is simplistic to draw a one way causal arrow. Though industrialization might have hastened the process of deskilling, it is important to recognize the context in which it was occurring. The main impetus for industrial commodification of Ayurveda came from the environment created by the influx of allopathic patent medicines (Leslie 1976). On one hand, the modern Indian state by privileging biomedicine as the official system made it easily accessible and affordable. On the other hand, consumers grew habituated to 'convenience' offered by ready-to-consume pills that could be bought off the shelf. In parallel, rapid urbanization was under way, as a part of the overall transformation of the society, polity and economy. Shift from a predominantly agrarian to a service economy was distancing people from rural habitats¹²². Modern education, professions and life style also served to alienate people from knowledge of herbs and ecology. Decline of metis due to such variables can itself be a causal factor rather than the result of industrial deskilling. It is therefore important to understand the two-way relationship between deskilling and industrialization, that have resulted in a vicious cycle in which one augments the other.

In the following four chapters, I attempt to draw an ethnographic account of the nature of ayurvedic production and consumption in Kerala and the nature of deskilling that has occurred at each significant node. The account will show how various actors respond to industrial commodification showcasing examples of acceptance, resistance and accommodation.

¹²² Sector wise contribution of GDP from 1960 to 2010 of primary sector : from 56% to 16% (Kerala State Planning Board 2010)

CH 4 DESKILLING THE VAIDYAN

Classical ayurvedic framework had left much to the discretion of the vaidyan. Although several standardized formulations were recommended, vaidyans were expected to use their *Yukti* (reason) to vary, add, reduce, and substitute ingredients of their choice. I use the term *thinking medicine* to refer to the cognitive process of combining various medicinal ingredients to design a formulation, which involves applying the knowledge of ayurvedic pharmacological principles in combination with information derived from humoral diagnosis (See section 1.2.3). The process of *thinking medicine* and its significance are discussed in section 4.1. I argue that though the skill of medicine making per se is not extraordinary, it is the involvement in medicine-making that connects the vaidyan to the sensory knowledge of materia medica and thereby to an embodied knowledge of pharmacology.

These cognitive processes, besides contributing to solving practical medical problems, also lead to innovations that may enrich collective knowledge. The role of vaidyan as medicine designer has been hitherto instrumental in creating a large body of open-source collective metis, partly textual and partly held in practitioners' collective memories. Industrialized commodification distances practitioners from making medicines and thereby from associated cognitive processes. The result has parallels with agricultural deskilling which "is not the displacement of a static set of skills but rather the disruption of an ongoing process of skilling" (Stone 2007:73) Section 4.2.1 provides a picture of the beginnings of industrialization of Ayurveda in early 20th Century, the role it played in initiating the process of homogenization, and its effect on the practitioner. Section 4.2.2 discusses the relevance of metis in medicine production in the industry today. The culture of *thinking medicine*, does survive within the precincts of the ayurvedic factory in Kerala, but is concentrated and limited to a small number of people. Innovation at the vaidyan level on the other hand has the advantage of decentralized or distributed innovation, a factor that has been attributed to the robustness of open-source software in comparison to proprietary (Kogut and Metiu 2001). Historically, in the evolution of traditional medicinal knowledge, distributed innovation also mattered because of the multifariousness

and the connectedness of herb knowledge to local ecology (Barsh 1997). Until the freezing of pharmacopeia by the 1940 Cosmetics and Drug Act, local adaptation was important because among one of the most important of vaidyan's skills was to identify local plant substitutes.

In Section 4.2.3, I argue that commodification in Kerala that was hitherto centered around classical products played a limited role in deskilling. But increasing importance of branded prescription products in the market has the potential to intensify the deskilling process. Factors favorable to the proliferation of an prescription product market can be broadly classified as practitioner-driven, consumer-driven and manufacturer-driven.

Institutionalization of ayurvedic education was non-conducive to accommodate the flexibility, variability and dynamism that was characteristic of ayurvedic metis. Section 4.3.1 describes how 'scientization' of Ayurveda, a process that began with the modern institutionalization and professionalization was instrumental in the homogenization of a medical system that was inherently pluralistic. Further, in section 4.3.2, formalization of education broke the traditional chain of transmission that endangered the transfer of collective metis from vaidyans to disciples.

4.1 Thinking medicine: Role of vaidyan's *Yukti* in medicine making

Classical ayurvedic epistemology accepts three sources of knowledge as valid: *pratyaksha pramana* (direct perception), *anumana pramana* (inferential evidence) and *aptopadesha* (advice of trusted source, i.e., texts or other experienced vaidyans). The vaidyan is expected to use *Yukti* (reason) in combining knowledge obtained from the text, personal clinical experience and information that he or she gets from fellow vaidyans. In fact, the classics say that those doctors who follow the texts verbatim are *manda buddhis* (mentally challenged) and that such doctors should be avoided (Tirumulpad 1977). *Yukti* that is often construed as intuition¹²³ is comparable to some extent to that used by biomedical doctors¹²⁴. Ayurvedic clinical practice demands a greater extent of metis because treatment has to be individualized. Its contrast with biomedicine in this respect is reflected in an often

¹²³Though commonly considered a non-rational process, intuition in the case of a doctor means a creative process that weaves together different types of information (cognitive, emotional and intuitive) to arrive at a new insight (Stewart 2005).

¹²⁴Scott (1998: 329) gives three examples of biomedical metis: 1. after encountering several patients during a diphtheria epidemic a doctor became so adept in diagnosing that he could 'smell' out the disease 2. A doctor who could tell if an infant was ill just by looking. 3. a physician with a high success rate diagnosing syphilis by unconsciously registering patients' eye tremor.

quoted maxim: “ayurvedic diagnosis treats the patient rather than the disease”. The classical eight-fold or ten-fold diagnostic protocol of Ayurveda lays emphasis on the understanding of patient characteristics that are subjective (for example, healthiness of the tissues, temperament) and therefore better elicited by an experienced eye. Additionally, information in the classical texts is often cryptic and incomplete requiring the doctor to be a skilled interpreter. This is not surprising given that despite reliance on objective parameters of diagnosis, the biomedical doctor’s skill as an interpreter is considered to be important (Leder 1990).

Based on the diagnosis of the nature and stage of disease¹²⁵, the vaidyan is expected to design a treatment protocol that may include a combination of diet, behavior modification, medicine, and therapies. The medicine could be a standardized classical formulation, a modified form of a classical formulation or a new combination created by the vaidyan. Modification or new combinations are possible either when the doctor makes the medicine or prescribes raw drugs for the consumer to make at home. Besides diagnostic criteria, cost considerations could also influence the choice of ingredients. Even in prescribing standardized formulations, the vaidyan is expected to be knowledgeable of the ingredients. Sometimes the difference between one medicine and another could be a single ingredient, the choice between them guided by the individual ingredient’s pharmacological properties.¹²⁶ Dosage of medicine is also left to the vaidyan’s discretion.¹²⁷ Ayurvedic physicians consider dosage a critical determinant in treatment. In the words of a practitioner-scholar from Kerala, “Three drops of *Maharajaprasarini* twice in *Dhanwantaram Kashayam* saves a particular paralytic patient near to death with flaccid viscera. It is specific for the specific patient - ten instead of three drops would have killed him (Muraleedharan 2006b:22).”

In the process of diagnosis and treatment, the vaidyan is not just applying learnt knowledge but is being innovative, a process of innovation best described as “a recombination (bricolage) of

¹²⁵ Six stages of disease progression according to Ayurvedic pathology, *caya* (accumulation), *prakopa* (aggravation), *prasara* (dissemination), *sthana samasraya* (localization), *vyakti* (manifestation), and *bheda* (chronicity).

¹²⁶ For example, between *Chitraka Kashayam* and *Shaddarana Kashayam*, the difference is of a single ingredient. The former has *Kaduka* (myrobalan), the latter has bark of *maramanjil* (*Coccinia fenestratum*).

¹²⁷ The master classic on pharmacology says, “Determination of weights and measures of drugs is not rigid. The physicians should decide it taking into consideration the season, digestive-capacity, age, strength, constitution, humors, and habitat (SDS Ch.1: 37-39). The author then goes on to suggest a particular dosage system, “best suited for the people of the contemporary *Kaliyuga*”. He mentions two systems weights and measures, Kalinga and Magadha, he recommends the latter. However, Kerala traditionally followed a distinct system of weights and measures in Ayurvedic medicine making (See footnote 249).

existing elements” (Scott 1998:324). Obeyesekere (1992: 172) uses the term, ‘Samyogic experimentation’ which he defines as “a process based on clinical falsification, which makes it possible to generate new prescriptions, a feature that establishes Ayurveda as a science of medicine”. By providing ready pharmacopeia, and asking doctors and consumers to stop medicine-making, the industry has the potential to reduce the variability of prescription and narrowing the range of pharmacopeia in use. The metis that the *gurukula*-trained older generation practitioners are most concerned with is related to practitioner metis of ‘medicine making’. Concern is not just about the processing skills, but about the relationship of this process to the larger cognitive processes related to the practice of medicine itself. The process of “thinking medicine” is possible only if the pharmacological knowledge of plants is embedded within the mind and comes into play when required. Similar to the experienced cook¹²⁸ who can imagine and combine the spices mentally to produce a desired taste, the vaidyan combines the knowledge of medicinal properties in visualizing a medicine combination. The term *vrudha vaidyan*, in vogue in Kerala, is based on the traditional understanding of the significance of metis. *Vrudha* means old, but in this context, is a term that is specifically used to designate expertise and experience in medicine. Whenever there is an ambiguity, “*vrudha vaidya matham*” (opinion of the elderly physician) is considered the final recourse. The significance of the *vrudha vaidyan* has been noted by Wood (1985).

There were prescriptions in verse.... but detailed instructions to interpret them and actually make the medicines were lacking, so that one had to learn from someone who already had practical knowledge and experience. However these qualities and qualitative effects of medical substance were not measures by an experienced physicians’ developed sense of judgment in prescribing for the ailment of a particular patient. Only a *vrudha vaidyan* or an experienced physician would have developed the sense to know what combination of medicines should be prescribed for particular case, given the nature of the ailment and the particular constitution of the patient. That a physician of this kind could be very effective in his prescription seems to be widely acknowledged in Kerala. (Wood 1985:116).

Citing examples from the field of medicine to show how metis has provided ingenious discoveries specially mentioning the practice of variolation¹²⁹, Scott lists the ingredients of practical knowledge:

a pressing need (in this case, a matter literally of life and death), a few promising leads that

¹²⁸ To a certain extent, Indian cooking involves a rudimentary form of this thinking. For instance, cooking lentils, considered gas-producing, with asafetida as a carminative, combining cumin to counter heat-producing properties, turmeric as a disinfectant.

¹²⁹ He lists several examples of traditional medical discoveries and makes special mention of the widespread use of variolation (inhalation of attenuated small pox matter from an infected person or scratching the same into the skin) long before Jenner’s development of the vaccination technique in 1798, was practiced in India, the Middle East, Europe and China by 16th century.

worked in analogous contexts (inoculation), a vast army of freelance experimenters willing to try almost anything, time to "simmer" (as the experimenters and their clients observed the results of various stratagems through successive epidemics), and the sharing (through chains of communication) of the experimental results. As long as it didn't require an electron microscope, it would in fact be surprising if such a combination of passionate interest, close observation, large numbers of amateur specialists trying different possibilities, and the time necessary for trial and error did not produce many novel solutions to practical problems (Scott 1998: 326).

Here are two examples that demonstrate how practitioner metis is fed back to collective knowledge of diagnosis and medicine, a process that is central to the continuity of ayurvedic innovation.

Case 1: Ashtavaidyan Cheriya Narayana Namboothiri: Case of a patient with chronic urinary incontinence.

Once when I was in my clinic, a smart (capable) lady from Hyderabad came with her 9 yr old daughter. As they did not know Malayalam, I interrogated her with the help of my aides. The girl had a chronic urinary incontinence problem; she had undergone 7-8 surgeries without success. The lady insisted on admitting her to the hospital for treatment, but the case was complicated and I was clueless. So I told them to take medicines for a couple of months and that, I will decide how to proceed after seeing the response....I fixed a protocol of medicines and asked them to try it out for 2-3 months. But after a month when there was no much progress, she got impatient and kept pestering me to admit her, so I had to relent. And then when I pondered deeply over the issue, a verse came to my mind. It contained a recommendation that *Ghritam* (medicated ghee) be administered to patients suffering from urinary problems in two separate dozes...This procedure is termed as *Avapeethaka Snehapanam*.¹³⁰ I couldn't easily recollect it earlier because it was not in the *Chikitsitam* (remedy section), but in the *Sutra Sthanam* (section on fundamentals). Calculating an ideal doze for *Snehapanam* (protocol for consumption of medicated ghee/oil) for a nine year old girl wasn't easy. With much calculation and trepidation, I decided to give 120 grams of medicated ghee, 40 grams before breakfast, the rest in the afternoon around 3.00 p.m. A *Mridu Swedam* (light sweating procedure) was applied to her on the next day, some *Virechaka* (purgative) medicines were also given. On the third day some of the medicines were vomited, but surprisingly the urination came under control (Namboothiri 2008:150-152).

Case 2: Dr. Verghese Pattarumadom, A DAM (pre-BAMS formal degree) qualified third generation family practitioner on encountering a middle-aged patient from Tamil Nadu, with shrunk limbs, referred to him by a colleague from Madras.

The patient had tried all other systems of medicine without any success. It was a complicated case. I had no clue how to address it, and I was not much hopeful of finding a solution either. But the case was preying on my mind. One day, during an early morning meditation walk, a verse from Ashtanga Hridayam popped into my mind. It was about a simple recipe, to make decoction of *uzhunnu* (black gram) with *induppu* (potassium chloride), and make a medicinal oil out of it. It seemed silly, so I ignored it. But it kept coming back to my mind. It sounded too simple for such a complicated problem. Anyway, I thought what do I have to lose by trying? So I tried the application, and I couldn't believe it when, on the fourth day, I saw a mild recovery. I then pondered over it, and tried all possible combinations with the same oil, including internal consumption. In around 14 days, the patient had significantly recovered.

In both the examples mentioned above, the doctors were faced with a novel problem that they were clueless as to etiology and treatment. They were almost reluctant to pay close attention to them,

¹³⁰ Note that he does not even mention the text, assuming the default text in Kerala to be *Ashtanga Hridayam*.

as they had implicitly classified the disease as incurable.¹³¹ They were forced to use all mental resources and knowledge at their disposal due to the insistence of patients to be treated. And in both cases the inspiration for the treatment came from a classical textual source, which they modified and experimented using *yukti*. The first case was published in a book written by the vaidyan himself on his clinical experiences. The second was narrated to me personally, but it is also an information that he had published in a practitioner journal long ago. It is also an information which doctors like him routinely exchange with colleagues and student interns. A few months later after publishing the article, he bumped into a vaidyan-owner of a large manufacturing company who told him that after reading his article he added the medicine to their classical product list. Francis Vaidyan was happy that his acumen was acknowledged. It was a classical medicine that he had rediscovered and applied to a particular context, he was proud that he had contributed his bit to the medical system. Innovation in ayurveda often constitutes of applying formulations existing in classical text to a particular disease condition. The application can be simple, merely recognizing the importance of a particular medicinal recipe, or more complex, like modifying it to work better to the specified context or applying it to a new disease context in the existing or modified form.

Many such bits and pieces of clinical experience accumulate as collective metis, those that are not recorded or published circulate among networks of practitioners. Despite the fact that I was not an ayurvedic doctor and was uninterested in medicine formulae, the vaidyan wanted me to note down a secret formula given to him by a trusted guru. Though it may seem that doctors are not willing to share their secrets with others, usually such exchanges take place after months and even years of rapport building after the guru considers the disciple worthy of transferring the knowledge.

The traditional context of ayurvedic practice provided an atmosphere conducive for distributed innovation to be carried out as part of everyday practice of practitioners, that may get exchanged through formal and informal professional networks, and over the generations through guru-disciple or family lineages. Kerala Ayurveda Mandalam is an association dominated by old timers, that is, licensed

¹³¹ Much importance is given in the classics to the assessment of patient characteristics before beginning diagnosis, to assess whether the patient is *curable*, *incurable* or *palliable*. The doctor is strictly advised not to treat patients close to death, lest it spoil his reputation. Elaborate guidelines are provided to recognize signs of death. Stories of master practitioners commonly refer to their prowess in recognizing imminent signs of death.

traditional practitioners and practitioners holding pre-BAMS degrees. In one of their annual meetings I saw Dr. N. K. Padmanabhan Vaidyar, the owner Chairman of a leading ayurvedic company Nupal Remedies, dropping into the meeting with two plants in hand. When it was his turn to speak, he waved a plant in front of the audience, asking if anyone could identify. The plant was passed around among the small, but eager audience, most of them senior vaidyans and a few youngsters. It must have been a rare plant; only one of the assembled vaidyans recognized it, identifying it as a relative of another more well known plant. An animated discussion followed, touching various topics like plant's characteristics, experience with similar plants, comparative medicinal uses, and so on.

Despite being a proud owner of a multi-million rupee business empire, Dr. Padmanabhan, in his late 70s, comes across as a humble and passionate vaidyan-scientist. He is obsessed with the pharmacological promise an ordinary plant holds, seeing before him a world of wonders waiting to be discovered by the traditional organoleptic method. His thinking about plants and potential medicines is closely associated with his constant clinical practice, to the problems he encounters, and the answers he seeks. This also includes commercial concerns, informed by the prevalence and incidence of particular diseases, the nature of public demand, availability and cost of raw material, and so on. Information that modernized pharmaceuticals like Dabur collect through market surveys comes to him through everyday clinical experience. He spends more time in his clinic than his factory; it is easy to get an appointment with him as a patient than as a researcher. His armor of 50 proprietary medicines are derived through this process of experimentation, built over generations of accumulated metis that he traces back to 1500 years of Buddhist legacy.

In the next speech, the President of the Mandalam, launched into an elaborate discussion on the making of a particular medicine. The description was somewhere in between a chef's animated recipe recital and a chemist's enthusiastic narrative of a chemical reaction. During his speech, a young doctor raised a query on the use of *Takradhara* (therapy procedure with medicated buttermilk). Though his question was directed at a minor technicality, while describing the procedure he inadvertently revealed that he bought butter milk from the neighboring *Arya Bhavan*, a vegetarian hotel. This revelation sent the senior audience into a stunned silence. Without much ado, a senior

vaidyan reprimanded him: “How can you even dream that it is okay to use butter milk from the hotel to use for treatment? Making medicated butter milk is a process in itself, you can’t just add medicine to butter milk and expect it to be the same!” For the young doctor, who is used to the culture of buying medicines from the shop, the ability to discriminate between them appeared to be non-existent. In fact, the innocence with which he revealed this to the senior audience shows that he was not even remotely aware of his transgression. In a chat after the meeting, Gangadharan lamented, “people will not any more practice like in the olden days, those days are numbered!”

In the process of varying ingredients, and observing results, over a life time of practice, the vaidyan might arrive at different formulations, some of which might be more effective for particular cases. The chances of an individual vaidyan arriving at a more effective variant of a formulation or protocol during the course of treatment is high, given that a vaidyan is considered to be constantly experimenting and getting feedback from the patients he examines. Sometimes an experiment with a single case might lead to a formulation that might be then repeatedly used for several other similar cases. Here is a classic example, again from the *Ashtavaidyan* family of Vaidyamadham Vaidyasala.

Chembai Vaidyanatha Bhagavatar, a nationally renowned classical musician, had a strange problem during the heydays of his career. He lost his voice suddenly during a concert following a fit of cough, and could not finish the concert. He tried a number of treatments from far away cities like Bangalore, but without success. My father met him once in Guruvayoor during this period and told him he can treat him provided he stays with him during the treatment. He readily agreed and came with my father. He told me to look up the texts for any reference related to '*swarasadam*' (voice improvement). I looked into *Chikitsa Manjari*, *Sahasrayogam* and *Ashtanga Hridayam*. I would read the pertinent verses to my father during his resting time in the evenings, often in the night too. In certain passages he would ask me to repeat the verses, which would mean that he would meditate more on that. Finally he zeroed down on some medicines from *Sahasrayogam* (older version). A medicinal ghee and a medicinal powder was chosen, and he asked me to add the leaves of gooseberry in the latter, as recommended from the text *Chikitsa Manjari*. He wanted me to make the medicines at the earliest. The medicines were made in four days and the Bhagavatar started taking it. We also started sweating procedures along with certain medicines, as well as a couple of nasal cleansing procedures. Within two weeks of this treatment the condition improved and there was a marginal recovery. He could utter a few words with difficulty. At the end of the two weeks he asked my father whether he could start practicing his music and my father consented. In a short while his voice was around 75 percent normalized, after which it gradually improved, getting even better than what it used to be. The medicines tailored for him are now sold in our pharmacy, named after him, as Special Powder (VNB) and Special Ghee (VNB). (Namboothiri 2008:31-35).

Depending on the inclination of the particular vaidyan, an innovation such as this might either remain a family/lineage secret or be shared with other vaidyans. In this case, despite the fact that

they sell these as proprietary medicine, the vaidyan has openly discussed the source and formulation in his published book on clinical experiences. In some instances, it does happen that vaidyans' (or popular knowledge) gets acquired and privatized by companies. For example, SH, a medium size company, reported that some of their proprietary medicines were derived from local knowledge that they obtained from a traditional vaidyan they consulted. They mentioned three medicinal oils, indicated for sinusitis, sleep disorders, numbness, and persistent cold. A new generation company, DuCare, aggressively markets a branded medicine for hemorrhoids as a 'tribal formula' (in Malayalam 'adivasi formula'). In mid 2010, the company's attempt to formally acquire a medical formulation from a traditional vaidyan from northern Kerala landed them in a legal tussle.

Vaidyans with small capital are ill equipped to participate in the branded product market. One elderly vaidyan in a rural region, mistook me as a business aspirant, despite my repeated efforts to dispel the notion. He had a few proprietary products up his sleeve that he would subtly try to market to me. He once allowed a hawker to market his medicines, but soon had to put a stop when he found that he was selling adulterated products. One of the professed objectives of the recently set up country's first ayurvedic industrial cluster in Thrissur, Confederation for Ayurvedic Renaissance (CARE-Keralam, refer Section 7.7) is to enable such small vaidyans to package and market their own proprietary formulations.

Collective knowledge gets enriched by constant feedback from individual doctors' experiences. Since this process is not necessarily centralized, over time it leads to local differences that may evolve into regional traditions, some of which gets codified. For example, a Kerala text *Vaidyatarakam* is considered to contain the essence of southern Kerala tradition. Much importance is given to one drug *amalpori* (*Rauwolfia serpentina* of the Reserpine fame), introduced in several classical formulations as an anxiety-alleviator, demonstrating a regional focus on anxiety in disease etiology (Varier 2003). Thirumulpad notes that the strength of Kerala Ayurveda is that the physicians did not get stuck with classical texts, but went on to codify other texts based on practical experimentation.

Many believe that Ayurveda must be practiced as it is prescribed in the texts. I differ with them. The practitioners dared to think differently and succeeded. This essentially is the success of Ayurved and also shows the strength of its basic principles...It is in this context that Ayurveda in Kerala became acceptable to its people. The local vaidyans were considered a friend of the people

in his locality. His was not an exalted profession one as we see today (2008:15-16).

For metis to operate and lead to innovation, certain *minimum social conditions* are required, says Scott (1998). These include *a community of interest, accumulated information, and ongoing experimentation*, which could be provided either by formal institutions or by informal exchanges. Ayurvedic metis traditionally circulated through various channels, through formal exchanges in *gurukulas* between guru and disciples, educational institutions attached to royal palaces and temples, in meetings of practitioner associations and informal exchanges between practitioners through social networks. This was true of not only Ayurveda but all forms of traditional education (Wood 1985).

Metis is not just what is acquired by individuals in their lifetime, but a product of accumulated experience of a community. The doctor is just a member of a community that serves as a “living, oral reference library for observations, practices and experiments - a body of knowledge that an individual could never amass alone.” (Scott 1998:324). A review of eminent local ayurvedic practitioner-scholars’ writings on the Kerala tradition of Ayurveda and Panchakarma (Rajagopalan 2009, Namboothiri¹³² 2004) shows that it differs from its textual foundation in the classics only in minor ways¹³³, too insignificant to explain the newly acquired fame of the so-called “Kerala tradition”. This elusive tradition is nothing but invisible collective “practical” knowledge and ethos that have evolved over a shared history of practice¹³⁴. This knowledge remains tacit, informing the choice of treatment protocols that includes the use of pharmacopeia, therapeutic procedures and diet advices. It also included bits of technical information in identifying plants, purifying poisonous plants, cooking decoctions, and so on¹³⁵.

There is an important aspect of practitioner metis not discussed here, that concerns areas of medical expertise that are metis-heavy; such specialist medical practices require more hands-on skill and little or no textual knowledge. The most important of these are surgery, poison-healing and bone-setting. Today surgery in Ayurveda is limited to the treatment of hemorrhoids, but it is the most illustrative of the significance of metis. The master treatise on surgery, Sushruta Samhita describes

¹³² Kaladi Parameshwaran Namboothiri is an expert on Panchakarma, recognized with the title *Panchakarmakulapati Ratna*.

¹³³ Modification of the immersion oil bath prescribed into classical texts into a oil-drip application procedure (Pizhichil), addition of *Takradhara* (butter-milk pouring application) to the already existing Dhara procedures, inclusion of local ingredients like tender coconut in medicinal formulations, and so on.

¹³⁴ Though there are similarities across Kerala that make it seem like a unitary tradition, there are variations within them that could be regional, familial or restricted to teacher-student lineages.

¹³⁵ For example, adding right quantity of *Dhataki*¹³⁵ (*Woodfordia fruticosa*) in fermenting *Arishtams* depending on the nature of ingredients in the particular formulation and the ambient temperature.



Ayurvedic surgical instrument models: Ayurvedic Industrial Exposition, Trivandrum, 2012

120 surgical instruments, eight categories of human surgery and 300 surgical procedures including ophthalmic couching, cutting for stone, removal of arrows and splinters, suturing and re-stitching of ears and nose. But it provided no illustration nor detailed description of the procedures used. Wujastyk (1996) points out that the famous historical event of the 'Hindu method' of plastic surgery recorded by the British in Poona in 1794, could not have been transmitted textually.

The surgeon who performed the Poona operation was not a traditional physician (*he was a potter*)... probably knew no Sanskrit at all. He had the skill in hands, not in his head. And the skill that have been probably have been specific to his caste, or even family. Indeed, may be it was an extraordinary survival of a technique from Sushruta's time. But in that case it was transmitted by means wholly outside the learned practice of traditional Indian physicians (Wujastyk 1996:27).

Unlike textual classical Ayurvedic knowledge, metis-dense branches of medicine are more vulnerable to deskilling, for evident reasons. The text-centric thinking that dominates modern Ayurveda derecognizes the knowledge and skill of traditional practitioners which in such branches can lead to irreversible deskilling. A good example is the near to close extinction of surgery which used to be one of the two main branches of medicine in classical Ayurveda¹³⁶. This is also the case with bone-setters as will be discussed in brief in Section 8.6.1.

4.2 Role of industrial commodification in deskilling the vaidyan

4.2.1 First Steps towards homogenization

Arya Vaidya Sala from Kerala is the largest Ayurvedic manufacturer in South India and one of the top ten in the country. Below here are excerpts of an announcement made by Dr. P. S. Varier, the founder of Arya Vaidya Sala (AVS), more than a century ago (Oct.16, 1902), on the occasion of laying the foundation stone of the company in the sleepy village of Kottakkal in North Kerala. By then, five

¹³⁶ Doctors in ancient India were said to be divided in two branches: surgeons (*Dhanwantariyans*) and physicians (*Bharadwajeeyans*)

other companies had started manufacturing ayurvedic medicines on a large scale¹³⁷.

We have reached a stage where it is generally only those who work for daily wages who now gather, stock, sell, buy, process and use these raw materials, mainly herbs. Not only do they not mix it in the right proportions and at the right time, it has even become a habit with them to make mistakes and confuse even those drugs that are easily available and identifiable. Apart from this, because of a growing lack of familiarity with them, innumerable medicinal plants and roots have now become impossible to identify.....I have said all this only because I feel that all vaidyans must be familiar with the various kinds of herbs they prescribe; you must not think that I insist that all vaidyans should prepare many kinds of medicines and keep them ready for use. Not that this is not a good thing to do; it is just that it is not possible to do it. Although food, clothes, household articles and so on are things that everyone needs, we all know it would be contrary to the way of the world to try and manufacture each of these things ourselves, besides being impossible.

Therefore...it is imperative that we do not suffer in isolation but that we unite, trust each other, distribute the work we have to do among ourselves and be of help to each other. Vaidyans should organize themselves in a group and form a company that will examine all raw material thoroughly and see that they are processed with the utmost zeal and attention, making no deviations whatsoever in what the ancient ayurvedic scientists have prescribed in their texts or in the experience that have been garnered to date. It is my belief that if other vaidyans begin to buy medicines processed in this way, use them properly and conduct treatment in a befitting manner, both groups will enjoy a profit that will equal their effort, that patients will be benefited and people will have faith and satisfaction in native medicine. This is the special advantage that practitioners of English medicine enjoy. There are numerous shops in all cities to provide them with the medicines and materials that they need for treatment. Why cannot we create the same facilities for ourselves? (Krishnankutty 2001:48-52).

He makes a case for the need for prepared medicines for the ayurvedic vaidyans, on the basis of two arguments. First, the vaidyan's loss of knowledge in identifying herbs because of over-reliance on others to pluck. Second, convenience of having a ready pharmacopeia for treatment; an observation that followed from the developments in 'English medicine'. Though Varier as a committed doctor might have been genuinely worried about the status of ayurvedic practice, perhaps consciously or unconsciously he was also framing a business strategy, trying to carve a niche for his products. It was not possible for an ayurvedic manufacturer to make much headway in marketing his products without delinking practitioners from medicine making. This is not to suggest that Varier's observation on the defectiveness of practitioner herbal knowledge was concocted or exaggerated. But the proposal of centralization of production and distribution as a solution to this problem was most likely inspired by the biomedical market, a mindset that was shared by ayurvedic entrepreneurs of that era. Citing the example of two North Indian companies, Bode (2008) points out that the ayurvedic and Unani

¹³⁷ Two in west Bengal, in 1884 and 1898, one in East Bengal in 1901, Dhootapapeshwar near Bombay in 1872, Dabur in 1884 in Calcutta. Two more were to open soon - Zandu in 1910 in Mumbai, and Baidyanath in 1917 in Calcutta.

manufacturers propagated a division of labor; traditional physicians were told to stop making medicines and were seduced to buy factory products.

Dr. P. S. Varier's observations and entrepreneurial plans were based in his lived experiences in the northern part of Kerala, the Malabar region which was under colonial rule. On the other hand, the southern part of Kerala under Travancore kingdom favored and funded indigenous medicinal education and traditions (see Section 3.5.2)¹³⁸. Did the deteriorated status of indigenous medicine under colonial rule and a consequent decline in metis in Malabar, present a landscape conducive for capitalist intervention? If this was true, then it would mean that though the industry might eventually cause further deskilling, deskilled status of the practitioner could have made space for industrialization of production in the first place. There is some supporting evidence. In his biographical work on Arya Vaidya Sala, Varier (2002) points out that Malabar was ahead of Cochin and Travancore in adapting to modern trends because of disruptive British policies. The deteriorated situation of indigenous medicine in Malabar led to the marginalization of genuine traditional practitioners which was conducive to the rise of quackery. This in turn forced ayurvedic physicians to organize giving rise to the growth of an influential physicians association, the Arya Vaidya Samajam. Formalization of education in the form of Arya Vaidyan Diploma course was a development of Samajam's activities. The factory was a parallel and related outcome of this effort to organize and combat the march of allopathic medicine. At the same time, it is important to note that industrial commodification was not necessarily the first step separating the medicine making from the doctor. *Not all traditional doctors in Kerala were in the practice of making medicines*. By the time AVS was founded, the separation between prescription and processing was already well established, as evidenced by the widespread presence of artisanal production units (*vaidyashalas*).

Even if you go to inner country, you will see board of *vaidyashala* (medicine manufacturers). In many places you will see multiple *vaidyashalas*. In any Malayalam newspaper, 85% advertisements are of *vaidyashala* (Varier 1915:80-85).

¹³⁸ In Travancore, by 1938, there were 150 Grant-in-aid *vaidyashala* in the nook and corner of the kingdom. The private *gurukula* started by a palace doctor was taken over by the King, who provided for an organized system of education by 1917, complete with a hospital system and medicine making unit.

In late 18th and early 19th century, the high cost of allopathic medicine and treatment¹³⁹ would have inspired the idea of medicine making and selling as a profitable venture, and the availability of print media must have made it possible for manufacturers to publicize and expand their clientele. According to Harilal (2008), the period between 1830-1880 was the age at which familial production had given way to 'petty production'. He points out modern institutionalization had displaced traditional practitioners who went on to becoming manufacturers and salesmen. Artisan manufacturers made life simpler for doctors. A physician, for a successful practice, had to have at least some medicines ready at hand. At a small scale it was unviable to make a large range of medicines, especially complex medicinal formulations like Asavas and Arishtas (fermented preparations) that took 25-40 days. Even those who had a larger scale of operation and had assistants to help them, were limited to making a few commonly used medicines. The founder of AVS puts it very clearly,

Opening a *vaidyashala* and running it is an expensive affair. Anyone Vaidya starting a *vaidyashala* with a small capital, they will have to wait for the first batch to be sold. That will take some time for others to know, and by the time the medicine might become old. If they sell the old medicine, then the reputation is gone. Rich people ought to be supporting good vaidyans, but they don't, because they anyway have vaidyans to assist them....Knowing Vaidya, and being truthful won't alone work. You need to know business and marketing (Varier 1915: 80-85)

Besides this, there were also a large number of practitioners whose practice was limited to consultation and prescription (see Section 5.7). The founder of AVS says, "*Parampanya* (traditional) *vaidyans'* business is advising people, they are not used to the responsibility of making medicines and providing it (Varier 1915: 80-85)". It was in this space that the artisan manufacturer had emerged, making it convenient for both consumers and doctors. Industrialization of ayurvedic medicine has been seen as a major contributor to the deskilling of the vaidyan (for example, Banerjee 2002). Ayurvedic practitioners and scholars themselves recognize this. Principal of an ayurvedic college in Kerala writes,

The physician has finally escaped from the heat, smoke, soot and discomfort of the furnaces of his "marunupura" (the kitchen where medicines are prepared) and practices with pen and prescription pad. Their thought process is confined to the medicines available in the market, their therapeutic skills are waning. And when a stage comes when even the standard medicines available now also disappear from the market, they would satisfy themselves from the proprietary medicines of the pharmaceutical companies. Then there will not be any distinction between allopathy and ayurveda; ayurveda will lose its identity; if it has not already done so (Agnivesh 2011: 84)

¹³⁹ As learnt from accounts of practitioners presented in Usman committee report on indigenous medicine systems (1923). According to one vaidyan's account, cost of treatment per patient in the allopathic system was 6-7 annas, compared to 10-12 pies in Ayurveda, that is 6 times higher (one anna = 12 pies).

4.2.2 Relevance of metis in medicine production today

Observing the relentless march of industrialization and its effects on practitioner and consumer metis brings some questions to the fore. How relevant is the concern for disappearing metis today, after a century of industrialization of production? “Much of the world of metis that we have lost is the all but inevitable result of industrialization and the division of labor. And much of this loss was experienced as a liberation from toil and drudgery” (Scott 1998:335). It is important to examine the significance of medicine-making from this perspective, both at household and practitioner nodes.

In the context of fading away of household metis, it is the ‘grandmother’ whose knowledge everyone refers to, not the grandfather¹⁴⁰. The shift towards prepared *masalas* might endanger the metis of cooking, but its role in empowering the working woman needs to be recognized. Some respondents were driven by perceptions of authenticity of medicine, similar to the commonly heard romanticization of the taste of the stone-ground chutney and home made *masalas*. But such perceptions and expectations tend to burden the already overworked working women¹⁴¹, capital intrusion into local knowledge could have the salutary effect of ameliorating gendered drudgery in the kitchen.

With regard to practitioner-metis, which aspect of medicine-making would be worth the attention in the context of deskilling? Artisanal production involved manual labor in cutting, chopping and grinding. Laborious procedures were prescribed for medicine preparation that involved countless hours of grinding. When pulverizing machines and mechanized grinding stones can replace manual labor, is it really important to grind or crush the medicines by hand? Machines are typically blamed for displacing labor, but this would not be relevant to Kerala which reels from an acute labor supply shortage. But how important is the skill of cooking medicine? If we look at the beginning of industrialization in early 1900s, we see that the manufacturers were highly concerned about metis. Varier chose his helpers with care, because the *texture of medicines* had to be absolutely right when they were taken off the fire and had to be carefully tested by an expert. “There were two foremen who worked with the actual processing, one to weigh the ingredients, the other to check the consistencies as the medicines boiled

¹⁴⁰ Respondents often referred to the demise of grandmother as the turning point in their household medicine making, for example, shifting to market commodities instead of cooking post-delivery medicine at home.

¹⁴¹ Even if Kerala has a greater proportion of working women than many other parts of the country, the kitchen is still a woman’s province, it is rare to see men giving a helping hand.

over a fire fed with coconut fiber. They remained in the service of the Arya Vaidya Sala for many years. P. S. Varier himself supervised every stage of the processing, anxious to make sure that nothing went wrong (Krishnankutty 2001:53-54).

The factories have changed a lot since then. AVS incorporated wet grinders in 1952, steam boilers in 1967, wooden vats for fermentation were replaced by stainless steel vessels in the 70s, automated filling lines in the late 70s, modern chemistry-based quality assurance system in the 80s, automatic tableting system in 1987. With the modernization of *arishtasava* (ayurvedic fermented wines) manufacturing, mainly high speed centrifuge for quick sedimentation, batch sizes scaled up from 50-100 liter to 2000-5000 liters. Today medicine making in the factory appears transformed. The imposing image of bottles moving on conveyor belts being filled by medicine dispensers, getting neatly sealed and labeled by machines rolling out all ready for packing, can easily give a wrong impression. Processes in the ayurvedic factories in Kerala are not yet automated as this image would make us believe. Bode (2008: 123) calls the AVS manufacturing unit, a “kitchen factory”, which he says to him looked like a “workshop where artisans perform their craft.” But nothing the firm’s reluctance to be photographed, he expresses surprise because he says western manufactures tend to



Modern ayurvedic factory: from AVS files

boast if they are engaged in artisanal production. This is because of the predominance of the modernist discourse in ayurveda which can be often misleading. It is deceptively identical to that of rest of India, but it is more of a reaction to a stauncher local strain of traditionalist ayurveda. AVS has been the harbinger of modernity in Kerala, and it has significantly influenced the local ayurvedic discourse in the direction of modernity. In a way, the modernism of Kerala is likely to be considered traditionalist by national standards, though this difference is often not discernible unless one closely observes manufacturing practices. Bode (2008: 125) has been perspicacious in noting this distinction. “Tradition

is a relative affair”, he observes, noting that AVS which is traditional by standards of rest of India, had to face much opposition on its home turf for modernizing medicine production. He also notes the prevalent critique in Kerala of mass production and of the perceived effectiveness of freshly made medicines, devoid of preservatives. `

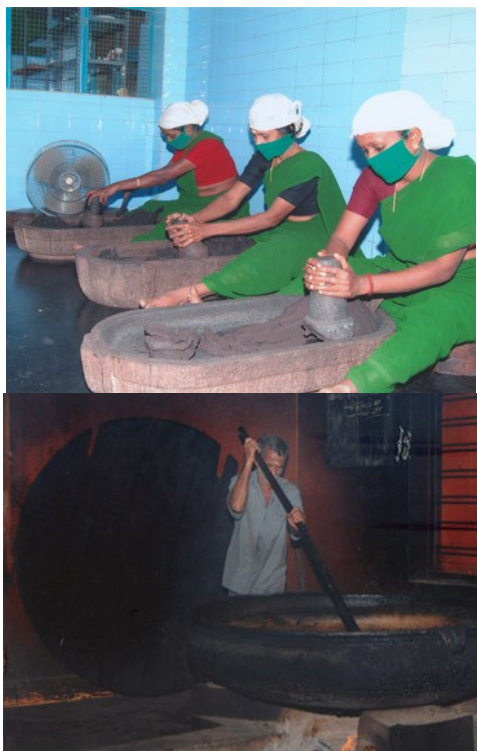
In comparison to artisanal production, three major technical changes can be identified in the modern Kerala industry: 1. Shift from manual labor to mechanical power, saves labor and time 2. Shift from direct firewood fire to steam, provides for a controlled temperature and a soot-free environment, and 3. Change in the material of vessels used from brass *Urulis* (cauldrons) to stainless steel (SS) jacketed vessels and wooden vats to SS vats for fermentation of Asavas and Arishtams. Even these minor changes are sufficient to provoke guilt among Kerala manufacturers. A medium sized manufacturer assures its customers, “We maintain traditional methodology for ayurvedic medicine preparation...For thermal processing of decoctions, *firewood* ensures controlled and continuous heat...We have adopted *modern technology* only in pre-processing stage like disintegration, pulverization and in preservation of *kashayam*¹⁴²”. Though using steam jackets to process medicine is not really considered a big step, it is still guilt provoking and therefore the attempt to direct readers’ attention to ‘firewood’ by emphasizing the term. The manufacturer also assures that modern technology is used only pre-processing, not in processing. Another small manufacturer assures its customers that “The conventional system of factory has been renovated to the GMP Standards. *However utmost care is taken to maintain quality of the medicines*”¹⁴³(Italics mine). Ironically, GMP, a quality standard from a modern perspective is seen as a necessary evil, in fact, a shortcoming from a traditionalist worldview. Even Kairali resort, an ayurvedic tourism stakeholder who is a newcomer into manufacturing likes to claim that they “*do not stray away*” from “traditional methods written in the ancient manuscripts” except in using “modern methods of manufacturing to meet the ever-growing demand”. Ironically, the tourist market emphasis on tradition makes such stakeholders appear closer to the erstwhile ‘purist’ segment of ayurveda¹⁴⁴.

¹⁴²Dhanwanthari Vaidyasala, Thodupuzah, promotional leaflet, n.d.

¹⁴³ Vaidyamadham, Shoranur, e-brochure, n.d. <http://vaidyamadham.com/html/0700fram.htm>

¹⁴⁴ Kairali Ayurvedic Health Resort, Palakkad, Promotional leaflet, n.d.

Kitchen-factory images
Source: Kerala Ayurveda Samajam



Traditionalists like the Keraleeya Ayurveda Samajam continue to maintain old conditions of production, cooking medicines on *Urulis* (brass cauldrons) on firewood stoves, using wooden vats for fermentation, continuing to stick to specified firewood, and so on. The factory work space does not look any different from a large kitchen, of the scale typical of a wedding celebration. But such a model is difficult or rather impossible to adhere to in the context of large scale production. Interviews with production managers and R&D departments of medium and large scale manufacturers in Kerala reveal that though they have yielded to the inevitability of change, they struggle to minimize the impact in various ways. Firstly, they try to

get machines to mimic many of the traditional processes. For example, motors are fixed to traditional instruments like hand-pounds for crushing material and *ammis* (flat stone grinders) for wet-grinding pastes rather than switching to conventional grinders¹⁴⁵. Secondly, they try not to divert from classical procedures; no attempt is made to make use of technology that could potentially alter the consistency of the end product, despite the temptation to reduce time and increase production capacity. For example, sticking to a 30-40 day cycle to get the pills ground or *Arishtas* fermented by refusing to use technologies to accelerate fermentation of *Arishtams* and *Asavas*¹⁴⁶, keeping the mechanical flat grinder speed in check to match the traditional manual speed, continuing to produce hand-made shapeless pills along with the blister-packed modern tablets¹⁴⁷ and so on. ‘Progressive’ manufacturers from other parts of India would no doubt consider this a hide-bound mindset that impedes the ability to move forward with the times.

¹⁴⁵Comparable to people’s preference to have grinding stones fitted with mortars for wet grinding than using blenders.

¹⁴⁶ Though they incorporated high-speed centrifugal technology for speeding up the process of sedimentation that substantially reduced the turnaround time of *Arishtas* and *Asavas*.

¹⁴⁷ Certain other preparations, especially medicinal oils that need potentiation take longer time. For example, *Ksheerabala - 101 Avarti* (potency), that is 101 repetitions of the process takes 3-6 months.

But the industry in Kerala like elsewhere can still be blamed for displacing traditional production, and a case can be made for the authenticity of hand-made medicine, but the metis that needs attention in the ayurvedic context is a far more complex level of knowledge. In cooking for instance, it is the chef's metis that we are concerned with; it matters less whether the vegetable is chopped by hand or in the food processor, whether the material is ground by hand or by the blender. The chef in the ayurvedic kitchen is not compromised as long as the ayurvedic doctor continues to be in charge of product design and supervision of production. Relationship between clinical experience and medicine making is an important component of ayurvedic practice. Unlike biomedicine where research is produced by specialists employed by large institutions, in Ayurveda, knowledge is produced by practitioners in clinical settings. Their individual experiences draw upon collective experience, and then feed back into collective experience thereby adding to the collective repository of knowledge. This process is subtle and intangible, not something that yields to quantification or documentation. Firstly, though there are botanists and pharmacologists in the factories, ayurvedic doctors continue to play an important role both in medicine design and production, and consequently, humoral logic continues to play a role in *thinking medicine* 'inside the factory'. Secondly, most small and large manufacturers in Kerala, as discussed in Section 2.11, are closely involved in treatment. Though the production manager himself is not involved in treatment, the process of *thinking medicines* happens in the interaction between the researchers in R & D departments (includes ayurvedic doctors, botanists and pharmacologists) with doctors in the hospital. The day to day clinical experience of doctors feeds into the making of medicines which does not factor into the R & D cost. This is often ignored by those who use biomedical standards of comparison, and reprimand Ayurvedic manufacturers for low R&D investment. A methodology would have to be devised to take into account the collective clinical experience of the organization feeds back into medicine production.¹⁴⁸ For example, the Director, R&D of Oushadhi, Dr. Sheela Karalam, is a government Ayurvedic Senior Medical officer on deputation with 26 years of clinical experience. Even today she works as doctor-consultant in two ayurvedic pharmaceutical agencies besides being engaged in home-based private practice. Oushadhi's antihyperlipidemic drug was based on her clinical experience. Over the years of treating patients, she

¹⁴⁸ In the case of open-source systems like Wikipedia or Linux, the R&D cost is measured in terms of man hour input.

had found two classical decoction powders to have remarkable lipid lowering efficacy. Given the recent demand in the market, she thought it would be ideal if these were converted into a convenient combination pill format. She used the knowledge of phytochemistry to identify and narrow down the main ingredients and then based on ayurvedic pharmacological attributes, added garlic and curry leaves for their ability to unclog arteries. And then they followed the usual procedure of drug designing, including clinical trials to eventually to arrive at blister-packed tablet Lipocare.

In small scale operations, the vaidyan is in control of everything including sourcing, but in large scale operations, certain processes get divided - sourcing of material is left to the marketing group. But for this aspect of metis (location and habitat of the herb), the ayurvedic doctors as production managers in large factories are closely involved in all other aspects of medicine-making. During the course of an interview with Dr. K. Satheeshnath, the Deputy Production Manager at Oushadhi, I saw him doing a careful visual, tactile, olfactory and taste test of samples that kept pouring in every few minutes. He confidently assured me that he could identify and recognize quality differences of all raw material used, which is around 600 individual ingredients including around 300-350 plants.

The use of organoleptic measures both in checking the quality of raw ingredients, and in the cooking of end products continues to be critical in production. In the following excerpt from an interview, Dr. T. S. Muraleedharan, the quality control scientist of AVS talks about the traditional parameters and the pressures brought in by the new regulations,

The process of standardization is alien to us and culturally we have very different parameters of looking at food and medicine. Take this example of what happens in a typical household. If the pickle gathers fungus, the typical housewife just scrapes off the upper part and uses the rest nonchalantly. This signifies the typical Indian approach... I am not justifying, but an average Indian takes things in stride. The philosophy of GMP (Good Manufacturing Practices)¹⁴⁹ is a heavily influenced by high technology intensive modern medicine, which those systems can easily afford because of their high margins...Classical texts have concepts of *bhasma*, of *rekha pooritham*: as fine as to fit on the lines of fingers, *Tantupuritham* - the consistency of a thread, all which are relatively subjective, personalized parameters which are considered no more valid. The government has come out with pharmacopeia standards for ayurvedic formulations that talk about certain physicochemical parameters. We have been so far using organoleptic parameters. In Ayurveda where we have a product which uses 115 ingredients of herbs that go through various processes of cooking (we in fact always call our factory as our *adukkala*, i.e. kitchen) we really don't know what the final product contains chemically, its efficacy and action profiles¹⁵⁰.

¹⁴⁹ Good Manufacturing Practices (GMP) as a central policy measure to streamline manufacturing of indigenous medicines was first conceived in 2000; it was implemented in phases and eventually made a mandatory requirement for manufacturing license.

¹⁵⁰ Interview with T.S. Muraleedharan, Chief Technician, Arya Vaidya Sala, Kottakkal, 07/10/2006.

He is referring here to the standards being established for ayurvedic single drugs and formulations. Ayurvedic Pharmacopeia of India has established standards for 540 single drugs, 101 formulations, and Ayurvedic Formulary of India for 635 formulations. However, dissatisfied that the standards do not satisfy regional differences in practice, the manufacturers continue to stick to in-house standards established over several years of practice. Following the requirements of Good Manufacturing Policy (GMP) imposed by the State since 2000, manufacturers have instituted quality control procedures like microscopic examination and chromatographic test of raw material, and chemical testing of the end product for moisture and microbial levels¹⁵¹. Standard operating procedures (SOPs) are created and displayed on factory floors. But as of now, these procedures supplement the organoleptic processes rather than displacing them. Threat to metis in the factory would arise if operations get automated to the extent that organoleptic methods in medicine making are no more relevant. Most of the large manufacturers outside Kerala have already moved into that kind of a setup¹⁵². Now Kerala is also witnessing the rise of modern and ultra-modern factories. AVS has set up a new factory at Nanjangud to make proprietary products (2009-2010). AVP has progressed to the next step of complying to the WHO GMP with an eye on the export market¹⁵³ (2008-2010).

In Kanjikode factory we are manufacturing Traditional Kerala Type medicines in the traditional way of processing (all classical forms including new forms, decoction tablets and soft-gel capsules)...In our second factory at Thennalipuram we are manufacturing only proprietary medicines (syrup, hard gelatin capsules, granules, hair oil, cream and ointments and ayurvedic transparent soap). Now we have started...a new Factory...as per W.H.O G.M.P specifications¹⁵⁴

4.2.3 Limitations of classical-product centric commodification in deskilling the practitioner

The significance of medicine making to the process of innovation does not mean that all doctors have to make medicine. Historically there were many practitioners who limited their practice to prescription. However, their prescription was predominantly in the form of raw drugs, and hence they had an active role in designing medicines, though this often meant minor modification in classical formulas. These were done taking into account various variables, patient's constitution, particularity of

¹⁵¹ As of now, heavy metal testing is limited only to export products. Though there is pressure on the industry to do it for domestic distribution, they argue that it would make medicines too expensive.

¹⁵² As narrated by two R&D staff from Kerala companies who had visited large manufacturers' factories in North India.

¹⁵³ As learnt from personal interview of Head, R&D Department.

¹⁵⁴ AVP, ebrochure, <http://www.avpayurveda.com/ayurveda/avp-manufacturing-unit.html>. Accessed on 12-08-2012.

disease, economic considerations and so on. Today, there is a danger that the doctor might increasingly lean on standardized formulations available in the market.

However, it is important to note that the industry producing classical medicine per se need not deskill the doctor. Despite a century of industrial commodification, it is common to see practitioners in Kerala following the traditional style of practice that involves prescribing standardized formulations in combination with raw drugs. Doctors also prescribe raw drugs for decoctions unavailable in the market.

Here are two examples:

1. When *Savitha* consulted the doctor for digestive complaint, she was prescribed two classical formulations (one *lehyam*, one decoction) and a combination of seven raw drugs to be boiled and consumed with butter milk. The doctor was part of a traditional establishment in Palakkad, that had facilities to mix medicine combinations and also to dispense some of the raw drugs. The patient was asked to personally source two ingredients from her surroundings, curry leaves and the bark of drumstick tree.
2. When arthritic patient *Susheela* went to the doctor she was prescribed three classical formulations (two decoctions, one topical application), one proprietary formulation. She was also asked to consume a decoction of four fresh medicinal herbs. This government doctor who practiced in rural Ernakulam is an average Kerala practitioner who studied in the Arya Vaidya Sala. She chose to do Ayurveda because it matched her credentials, not because of any particular passion. She does not have a traditional family background nor does she come across as a particularly classical-oriented doctor. In fact, she is among the growing breed of modern doctors who are not shy of being profit-oriented. Like many government doctors do, she has a thriving home based private practice that brings her more than double her government salary. In her prescriptions, she mixes and matches classical medicines, proprietary medicines, raw drugs and therapy keeping in mind both therapeutic requirement and budgetary constraints.

These two disparate examples point out that it is not only the first kind of traditionalist vaidyan who sticks to the classical tradition of prescription, but it has been the style of practice of an average doctor in the regions that I studied. Note that I am focusing only on medicine and treatment practice here, as far as diagnosis is concerned there is substantial difference between first generation schooled practitioners and lineage based practitioners. The former are conversant with the biomedical understanding of the body and disease and use it either as parallel system of knowledge to draw from or just to satisfy a section of patients who are not conversant with Ayurvedic thinking.

On the other hand, a move away from classical to the ethical/prescription product market can directly lead to deskilling of the doctor¹⁵⁵. Given that prescription products are typically standardized to match biomedical parameters of evidence, such a shift can also adversely affect the humoral

¹⁵⁵ As discussed in chapter 2, proprietary commodities sidelined and thereby jeopardized the role of the ayurvedic doctor.

framework of ayurvedic clinical practice. This is somewhat comparable to the effect that a proprietary seed may have on a farmer's cognitive and practical skill involved in developing new breeds. But in the ayurvedic context, the industry has an additional potential to endanger the original skill holders by shifting allegiance to a different set of actors, the biomedical doctors. The discussion in Section 2.2 showed that such a shift and consequent deskilling of the ayurvedic practitioner had already occurred in rest of India.

An observation regarding the gradual change in the mindset of new generation doctors in Kerala towards an increasing preference of prescription medicines, was made by some respondents (both practitioners and manufacturers), and also voiced by practitioners in various public forums (for example, Agnivesh 2003, 2011). Such changes also correspond to shifts in consumer preference towards convenient and palatable medicine. There are several different factors that contribute to increasing importance of proprietary product consumption in Kerala.

1. **Practitioner-driven change** - Some of the respondents attributed the attitude change among doctors to the proliferation of private ayurvedic colleges and self-financed education. Allegations of poor quality have been leveled against the new self-financing colleges (Kunnathoor 2012). This allegedly produces doctors with poor classical medicine knowledge, besides making them vulnerable to industry incentives.
2. **Consumer-driven change:** Two common trends in consumer-driven change are:

Generational change in attitudes towards medicine, that is younger generations in households that were earlier loyal consumers of classical medicines are shifting towards convenient and palatable products, eroding the loyal classical consumer base.

Influx of new consumers: Ayurveda is drawing a new category of patients either because of its new-found popularity or/and the changing disease profile. These patients tend to be similar to patients outside Kerala in that they bring with them with their diagnostic framework of biomedicine (for example, Nisula 2006, Naraindas 2006) and are unfamiliar with classical medicine. I have come across many instances of ayurvedic doctors having problems of patient compliance owing to this reason. For example, doctors commonly repute patients reluctance to consume ghee based medicines due to increased association of ghee and other fats with 'cholesterol.'

3. **Manufacturer-driven change:** Increased brand value of Kerala Ayurveda has led Kerala-based manufacturers to expand their focus outside Kerala. This has led them to tailor marketing strategies to meet outsider consumer needs, some of which also get carried on to the home market. Saturation of the Kerala classical market (mainly due to manufacturer crowding) also is an impetus for manufacturers to move to unconventional segments. To a certain extent, manufacturers also make changes to meet expectations of being progressive and technology-savvy (see for example Section 9.1).

4.3 Role of modern institutional homogenization in deskilling the vaidyan

4.3.1 Scientization of Ayurveda: opposition to local variation

The revivalist ideologues who shaped modern Ayurveda (See Section 3.2) heavily relied on the rationalist antiquity in their attempt to defend Ayurveda as a ‘science’. In defending Ayurveda from its detractors who used biomedical standards to dub all other systems of medicine as unscientific, they subconsciously accepted the parameters of positivist science. In doing so, besides compartmentalizing identities (*Ayurveda/Siddha/Unani*), they moved away from practiced medicine¹⁵⁶ (Leslie 1976). Institutionalization of modern Ayurveda led to the development of a ‘professional Ayurveda’, or as Langford calls it a ‘parallel science.’ Ironically, just as biomedicine looked down at other systems of medicine as unscientific, Ayurveda strived to separate itself from the rest now considered as ‘folk’ systems. This process began in mid 19th century with the colonial translation of Indian medical knowledge of botanicals, which accepted the empirical validity of knowledge, but discounted ayurvedic theory on grounds of epistemological supremacy of European ‘science’ and incorporated Indian knowledge by way of translation into ‘English’, a process that Wolfgram (2009) calls ‘primal baptism.’ The colonial approach was carried forward by the elite leadership whose views were formative in policy making (Bala 2012). This is not surprising because, “the emergence and existence of India is inseparable from the authority of science” (Prakash 1999). The hegemony of biomedical science and its role in shaping ayurvedic discourse and practice has got much scholarly attention from historians of medicine (for example, Kumar 2000, Bala 1991).

Two distinct approaches can be identified in the modern reconstruction of Ayurveda as a science.

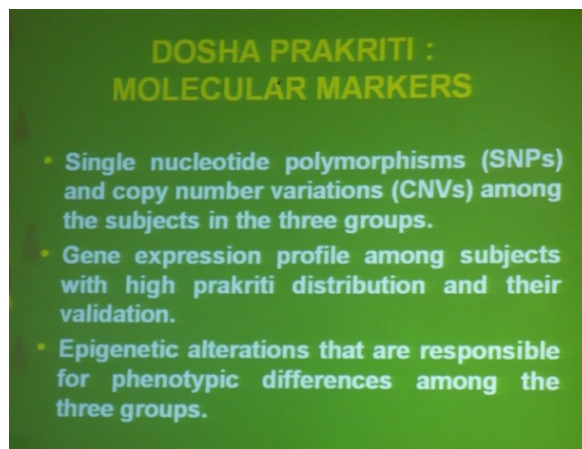
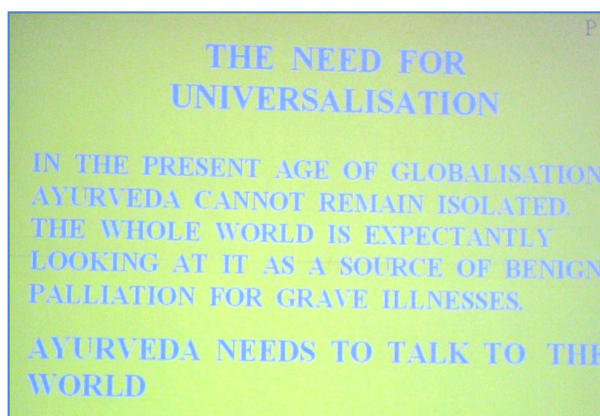
1. One which challenges the monolithic biomedical view of science and holds Ayurveda as a science in its own right.
2. One which accepts the universality and superiority of biomedical parameters of science, argues that such ‘scientific’ principles are inherent in Ayurveda and holds that attempts should be made to make them explicit using the language and methods of experimental science.

The first is a minority position, held by staunch advocates of *Shuddha* (pure) *Ayurveda*. It is the latter view held by the mainstream majority that has led to the project of ‘scientizing Ayurveda’, which involves translation of ayurvedic concepts in biomedical terms and validating medicines and

¹⁵⁶ Leslie (1976) termed the medicine in practice as ‘traditional culture medicine’ distinct from the imagined rationalistic system rooted in a classical past.

protocols using biomedical standards. Wolfgram (2009) points out that ‘ primal baptism’ shifted to ‘telescopic baptism’ in early 20th century when the focus shifted from the plant to its constituents with the ascendance of chemical pharmacology. Today, the project of ‘scientization’ is well established. It revolves around randomized clinical trials and pharmacological evaluation of medicines and plants. The ‘cultural authority’ of science (Prakash 1999:3) governs the official approach towards ISMs. For example, the apex body of ayurvedic research, CCRAS, focuses clearly on ‘scientific’, and ‘experimental’ aspects of Ayurveda¹⁵⁷, stating phyto-medical research as the fundamental requirement for the formulation of a new ayurvedic drug.

The project of scientization has brought in a new set of stakeholders - scholars from various modern scientific disciplines mainly ethnobotanists, ethnopharmacologists, and biotechnologists, some of whom overpower their ayurvedic counterparts. Though not all of those involved in this project reject the non-translatable parts of Ayurveda, the approach automatically sidelines elements that do not confirm to the standards of positivist science.



Presentation snapshots, Ayurvedic conference Thrissur, 2009

¹⁵⁷ Three of the four objectives listed by Central Council for Research in Ayurvedic Sciences are 1. Formulate aims...of research on *scientific lines* in Ayurvedic system of medicine. 2. Initiate, aid, develop, encourage and coordinate *scientific research* in fundamental and applied aspects of Ayurveda 3. Propagate basic knowledge and *experimental measures* relating to the cause and prevention of diseases and exchange information with other institutions with a similar approach.

In the past decade, the project of translation has taken a new turn, led by a few scientists who have questioned the monolithic view of science¹⁵⁸. This approach appears closer to the minority view that holds Ayurveda as a different kind of science but in terms of its intentions to translate, it is closer to the second. Arguing that reductionist science has limitations in interpreting holistic concepts of Ayurveda, these scholars borrow concepts from systems theory, genetics and other advanced sciences to design new methods of validation and interpretation. The most prominent of these are: system analysis of ayurvedic theory of physiology in terms of energy pathways (for example, the work of American physicist Alex Hankey 2005), biotechnologist approach correlating ayurvedic constitutional typology with genetic parameters (led by the proponents of *Ayurgenomics*, Patwardhan & Bodeker 2008) and the use of nano-technology to validate ayurvedic mineral medicines (for example, Bhattacharya 2011).

A good example for this synthetic thinking comes from the most prominent spokesman of Ayurveda today, Dr. M. S. Valiathan, a cardiac surgeon, former president of the Indian Science Academy, who also happens to be a native of Kerala. Having trained himself in classical Ayurveda post retirement, he has



Dr. M. S. Valiathan's talk 'A science initiative in Ayurveda' in the Global Ayurvedic Festival, Trivandrum, 2012

produced scholarly work on each of the three compendiums and is uniquely advantaged in speaking in both ayurvedic and biomedical languages. He spearheads teams of scientists working on advanced genetics and biology to decipher ayurvedic theory and medicine and delivers popular and charismatic speeches on the subject¹⁵⁹. He exhorts the ayurvedic community to be open to translation while at the same time he is sensitive to the limits of such translation. In 2006, the Indian Academy of Sciences (IAS) produced a decadal vision document authored by him, “towards ayurvedic biology.” In the

¹⁵⁸ I am making this observation based on talks presented in five conferences of Ayurveda that I attended during my field work, Coimbatore 2008, Jaipur 2009, Thrissur-Kerala 2010, Bangalore 2011, Trivandrum-Kerala 2012.

¹⁵⁹ Source: speech delivered in National Ayurvedic Conferences in Bangalore 2011, Trivandrum, Kerala 2012.

document he suggests that even if breakthroughs in science were to demonstrate the validity of ayurvedic concepts¹⁶⁰, the truth will be still elusive because of the holistic nature of ayurvedic knowledge.

This position appeals to both the camps, the purists and progressivists because it not only extends the translation project but also respects the theoretical foundation of Ayurveda. However, like the other two approaches it focuses on classical texts and ignores metis. Medicine in practice is messy, it not only varies substantially from the texts and lacks uniformity, it also includes various other elements like spiritual practices, magico-religious practices, astrology, and so on. Ethnographies of medical practice (Langford 1999, Travick 1987) have showed how practitioners creatively borrow elements from various bodies of knowledge including biomedicine. After all, this is what the classic Charaka Samhita had exhorted to do, to learn from various other '*Shastras*' (sciences).

The science of life shall never attain finality... humility and relentless industry should characterize your approach to knowledge. Further one should learn without jealousy, excellence of conduct even from the enemies because for the wise he world is the teacher while for the unwise it is the enemy...Knowledge.. coming even from an unfamiliar source, should be respectfully received, assimilated and utilized. *Charaka Samhita VS: 8:14*, Sharma 2000)

Such verses are quoted often in ayurvedic circles, oftentimes from practitioners trying to deal with the cognitive dissonance that arises in moving away from what is perceived as "true Ayurveda".

Though the new scientific approach is sympathetic to Ayurveda's philosophy and seeks to legitimize ayurvedic theory in the language of an alternative science, like the other two approaches it is in search of universal principles, for which local variation is always a handicap that needs to be eliminated. The usual targets are the imprecision in the naming and identity of medicinal plants, variation in levels of active ingredients in plant material used, and variations in ayurvedic formulae from manufacturer to manufacturer. The attraction and hegemony of theory over practice is not limited to the context of Ayurveda. Imperialism is inherent in the universalist assumption of science that leads to the delegitimization of metis, points out Scott (1998). This is comparable to various other

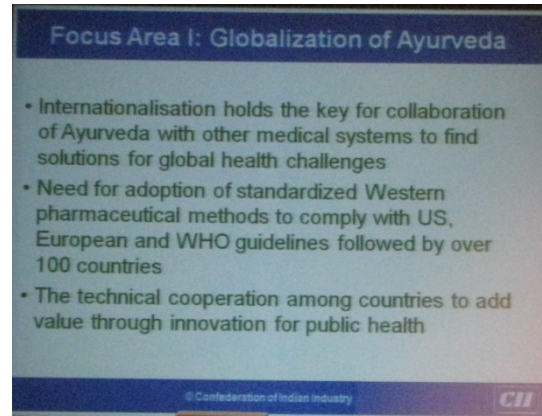
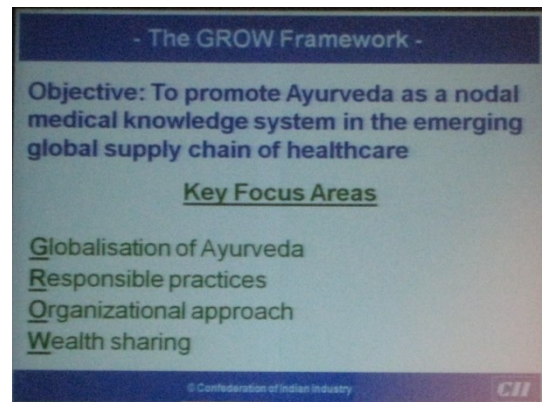
¹⁶⁰“If modern biology were to discover a molecular identity of *dosas*, if plant sciences were to find a biological basis for the *anti-dosa* effect of herbs, if the biochemistry and immunology discover a sequence of chemical and immunological changes brought to pass by Panchakarma, human and drosophila genetics demonstrate the anti-aging power of rasayanas, if chemistry reveals the existence of metals in nanoform in *bhasmas*... No matter how complete and accurate the scientific accounts might be, the whole truth would still elude them because Ayurveda is more than the sum total of scientific studies. Instead, the philosophical tradition of Ayurveda would demand that we conceive the reality of Ayurveda as a whole, which expresses itself not only in scientific insights, but also in innate disposition...(Valiathan 2006: 34).

areas of traditional knowledge, for example, the privileging of “scientific” expertise over farmers’ skill (Stone 2010).

Very few scientists who come from outside experts are trained in Ayurveda, but their image as harbingers of science gives them enormous power to pass judgments and dictate terms to their ayurvedic counterparts. Though there is some resentment about this among a faction of ayurvedic practitioners (see section 9.7), it does not come out into the open because such scientists are seen as the ambassadors of Ayurveda that have the power to take Ayurveda to new heights required for

effective participation in the globalization project. In fact, it is the globalization project that is imposing new pressure on the need to establish standards in botanicals, medicines, protocols, and so on. There is a significant difference between local commodification and non-local commodification in terms of its impetus to homogenization. When the product targets local consumers, variation is tolerated because it is the existing demand that creates the market. But a different scenario results when the demand is created by an outside market which demands homogeneity of identity. Just as the various regional curries get dissolved into a single ‘curry’ formula when it is sold to the West, all regional versions have to merge into one to be sold to the outsider as representing what is construed as one single Indian Ayurveda.

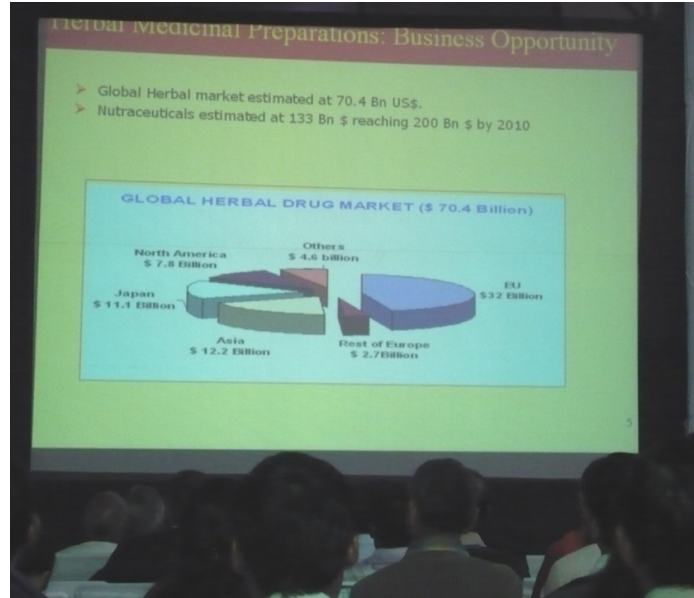
In his keynote address to the 2nd World Ayurveda Congress in Pune in 2008, Dr. R. A. Mashelkar the Director of Central Council of Scientific and Industrial Research (CSIR), the apex body of scientific research in India, emphasized the need for “integrative Ayurveda” and advocated the opening of



*Presentation snapshot
Confederation of Indian Industry, Global
Ayurvedic Business Meet, Kochi 2010*

premier 'International Institutes of Integrative Ayurveda (IIIA) in the model of IITs and IIMs. The call for integration has become shriller with increasing attention to globalizing Ayurveda.

Pordié (2010) provides a comprehensive evaluation of the effects of globalizing forces, demonstrating how therapeutic evaluation project of traditional medicines is heavily shaped by biomedical parameters of efficacy and evidence. With the example of an Indian practitioner of Tibetan medicine, he points out how three interests are salient in shaping this project of scientific



Eying the much coveted Global Nutraceutical Pie: Presentation Snapshot Arogya Conference Thrissur, 2009

validation: 1. Financial interest: motivated by perceived market value of scientifically validated traditional medicine, 2. Quest for legitimacy: to prove to the world that a hitherto undermined 'traditional' practice is efficacious. 3. Intellectual property protection: A perception that patenting is important to safeguard knowledge from outside threat also accompanied by the perception that IPR rights help in generating income (not necessarily an informed view of the legal meaning of IPRs). Pordié is concerned that commercialization driven therapeutic efficacy regime will make the medicine more expensive and less accessible to common people. A similar issue is brought up by Sujatha (2011:115-123) who notes, "subsidies for the export of raw herbs, digitalization of plant resources, standardization of ayurvedic formulas, and integrative research on herbal ingredients are all measures meant to enhance the 'safety' of herbal drugs for the western consumers; they have little to do with Indian consumers for whom accessibility and availability is the criterion". Lack of standards is often touted as the cause for Ayurveda's poor share in the five trillion dollar global nutraceutical pie. A higher level government official in Kerala complained that use of different texts for the same formulation was a problem, that a consensus has to emerge among the industry about standardizing. He attributed the inability of ayurvedic manufacturers to penetrate western markets to lack of such

standards. The golden standard of comparison is China's success in exploiting the international herbal market, which is attributed to its adopting 'progressive' strategies of standardization.

China has successfully promoted its own therapies over the globe with a science-based approach.... Global acceptance of Ayurveda is gearing upThe increasing use of traditional therapies demands more scientifically sound evidence for the principles behind therapies and for effectiveness of medicines" (Patwardhan et al 2005: 465).

The authors point out that various approaches taken by China including standardizing raw material, agricultural practices, are essential "to raise the image of ayurvedic medicines in the global business" (Patwardhan et al 2005: 468). Accusations of heavy metal contamination by Saper (2004) acted as a single largest motivation for the industry to get organized. Mandatory heavy metal testing for export was implemented in its aftermath. This also led to a substantial emphasis on the 'herbal image' of Ayurveda, which benefited Kerala, which has an overly herb-centric pharmacopeia. The ayurvedic community again got into a defensive mood after Saper hurled his second accusation in 2008 (Saper 2008). In his keynote address in the 2008 Ayurveda Congress, Dr. Mashelkar suggested how to go about facing such a threat.

What we should do is put our own house in order . How do we do that? First, encourage clinical research in ayurvedic institutions; second, create a complete ayurvedic pharmacopoeia of one or even two thousand products...; third, create an effective surveillance system, like the post-market surveillance systems for other traditional systems, including support from modern laboratories spread all over India; fourth, we must carry out multi-centric trials of ayurvedic biology; fifth, we must establish a presence in international scientific journals. There is no point in shouting; there is no point in getting angry. We must have a very strong presence in the world's scientific journals.....(Mashelkar 2008: 369)

An additional motivation comes from the need to protect this valuable knowledge from being taken away by others, the most cited issues being the western appropriation of yoga and the turmeric patent. Dr. Mashelkar, who had taken the lead in taking legal action against the US in the turmeric patent emphasizes on the significance of protecting ayurvedic knowledge from being misappropriated.

Most often those involved in the scientizing project are not consciously against metis, but they tend to focus more on textual knowledge. Dr. Madan Thangavelu is a genome biologist researcher from Cambridge University who spoke in a recent conference in Kerala 2012. Expressing awe of ancient ayurvedic science which helped him to find the missing details in the theory of biology, he says,

It was shocking that the *knowledge and awareness about these ancient texts were virtually nil* among people in Kerala, which was said to be the land where Ayurveda had its birth....It is also a

matter of concern whether in these times there are clinicians or *qualified vaidyas who can interpret the wisdom in these texts correctly* (Italics mine).

Besides mistakenly identifying Kerala as a “land of birth” of Ayurveda, Dr. Thangavelu ignores the presence or significance of practical knowledge. Instead of considering the possibility of texts having drawn their strength from practical knowledge, he assumes a natural precedence and superiority of textual knowledge vis-à-vis practice.

Medicines and clinical protocols are constantly improvised by doctors which may not always get formalized, but that does not mean it is less valid or that it does not exist. This “partisan knowledge” is embedded in the holder’s passionate interest in a particular practical outcome in contrast to ‘generic knowledge’ (Scott 1998). Scott points out that practitioners of metis do not pause long to ask why and how it worked, to define the precise mechanism of cause and effect; the intention is not to contribute to a wide body of knowledge but to solve the problem at hand. This problem solving approach is what ultimately leads to innovations, unlike the biomedical lab-centric drug discovery process. In farming for instance, the invention and adoption of agro-scientific knowledge is deeply embedded in daily productive activities and socio-cultural interactions (Stone 2010). ‘Partisan thinking’ might appear to those who are in the effort to ‘scientizing’ Ayurveda as being un-systematic, unsophisticated, inconsistent. The founder of *AyurVAID* (Kerala based chain of hospitals established recently with American philanthropic venture funding), has put in enormous efforts to develop a standardized diagnostic format in line with the principles and guidelines laid out in classics. He finds fault with my use of the adjective ‘traditional’, emphasizing on the ‘scientificness’ of Ayurveda. He argues that ayurvedic doctors seldom go through the diagnostic steps systematically, which, he argues impedes transparency in clinical practice. His aim in developing the diagnostic format is to institute a systematic and transparent procedure, with a combined objective of documenting clinical evidence. He terms this approach as ‘process-driven ayurveda’, a slogan that was initially widely used in advertizing the hospital brand. While this approach has its own merits, it is important to understand why doctors do not go through the steps systematically. Doctors are not oriented towards documenting and generating evidence, because they are preoccupied in solving immediate health problems of patients. “The litmus test for metis is practical success”(Scott 1998: 323). Plans to make a systematic diagnostic

format, while may be extremely useful in some ways, might impede the efficiency of the doctor who is forced to give primacy to procedure rather than insight and intuition. Such diagnostic processes are often too messy to be translated in standardized language, naturally not transparent to an observer, and might be often a subconscious process even to the doctor.

The Ayurveda Vs Science debate has been directly addressed by Trawick (1987) who defends Ayurveda against the accusation that ‘traditional’ systems of thought are relatively less open to external challenges than modern scientific thought, based on the ethnography of a single ayurvedic physician. The physician in his search for the origins of disease consulted varied bodies of knowledge besides Ayurveda including Siddha, allopathy and folk medicine, referring to texts in various languages, Sanskrit, Tamil, Malayalam and English. Trawick points out that the physician,

“puts the principles of these texts to work precisely by treating them as, in themselves, incomplete... In treating patients, he had a wide range of explanatory models of health, disease, and healing and a wide range of therapies to choose from. He avoided dependence upon a small set of rigid categories into which to force individual cases, and he treated patients with creativity and with sensitivity to their particular experiences of illness (Trawick 1987:1036).”

Responding to the allegation of the Kerala Shastra Sahitya Parishad (a powerful organization from Kerala nationally known for its radical rationalist pro-science activism) that ayurveda is not scientific because it is considered divine and stagnant, one of the most renowned ayurvedic practitioner-scholars of Kerala demurs that such allegations are made by those who are distant to ayurvedic practical realities. He states that in his own 50 years of practice, he had never come across a view in any text or scholarly forum that held classical texts as divine or unchangeable. To illustrate how historically ayurvedic textual ‘redaction’ was renovation rather than re-writing, he cites Vagbhata’s quotation *yuganurupa sandarbho vibhagena karishyate* - “I am writing this to suit the times and the examples which are contemporary, explanatory including new subject categories.”(Thirumulpad 2007: 35-36).

Both Trawick and Thirumulpad are essentially emphasizing on the significance of practitioner metis in Ayurveda. Variability is Ayurveda’s best defense against the accusation of it being static and unresponsive to new knowledge. “It is in fact the idiosyncrasies of metis, its contextualness, and its fragmentation that make it so permeable, so open to new ideas. Metis has no doctrine or centralized

training; each practitioner has his or her own angle (Scott 1998:332). Ironically, it is this “variability” that the ayurvedic community has attempted to shove under the carpet to conform to expectations of standardization and homogeneity. The danger of this approach to metis is noted by Nichter, “Bioscience may diminish the importance of local practical knowledge not just by ignoring or suppressing it, but by appropriating and circumscribing funds of knowledge through acts of codification, standardization and theoretical unification” (Nichter 2006: 367).

4.3.2 Formalization of education: disruption in the transmission of metis

Unlike farming, in the deskilling of the ayurvedic vaidyan the industry has a minor role compared to the institution that is responsible for the skilling. As I pointed out earlier, the key difference between the cotton farmer Vs ayurvedic doctor is in the skilling process; farming is acquired informally by practice whereas the latter has a significant formal instruction component. The traditional space of transmission of ayurvedic knowledge was the *gurukula*, i.e., residential master-disciple mode of education taking place in the Guru’s house or in a space attached to Guru’s house. Formalization of ayurvedic education shifted the space of knowledge transmission from the Guru’s house to institutions where gurus were employees and the Guru-disciple relationship was therefore, impersonal and transient. Early attempts towards formalization began in late 18th century with the setting up of *patashalas* (schools), somewhat in lines of the *gurukula* system.¹⁶¹ Though early education was modeled more in the lines of *gurukula*, the Court Physician appointed by the British in the Travancore kingdom intervened to influence a new kind of socialization that included instruction in modern physiology and anatomy (Wolfgram 2009). The next step was formalizing a curriculum and giving out certification in the form of titles akin to degrees¹⁶².

¹⁶¹ The first such institution was established in 1889 by Parameshwaran Moos in Trivandrum. Around 15 students were trained yearly. In 1902, Arya Vaidya Samajam an association of physicians came into being Calicut. It was patronized by the kings of Travancore and Cochin and Calicut and some of the most important vaidyans in the region. In the same year, another important organization called the *Keraliya Ayurveda Samajam* was started under supervision of eminent physicians. Before setting up of *patashala*, Samajam conducted early exams in three towns to award degrees to deserving practitioners. In 1913 a Sanskrit *patashala* was opened in Tripunithara by the Cochin Royal family.

¹⁶² The *Ayurveda Patashala* in Trivandrum was taken over by the Government of Travancore. In 1910 the college began to impart a five-year regular course and those who completed the first four years were awarded LMC (Lower Medical Certificate) and those who completed all the five years were given Higher Medical Certificate. From 1917 onwards the degree course was titled *Vaidyakalanidhi*. Similarly the *Keraliya Ayurveda Samajam* began to award the diploma course *Vaidyapadan*. The Tripunithara *Patashala* began to give *Vaidyabhushan* degree. In 1925, Madras School of Indian Medicine began to award the degree *Licentiate in Indian Medicine* (LIM). In 1957 a special initiative was taken up by the Health Ministry to streamline the subject content of Ayurvedic courses in the State. Following this, ‘Diploma in Ayurveda’ (DAM) was awarded to those who completed the course.

With the establishment of Central Council of Indian Medicine (CCIM) in 1970, the transmission of ayurvedic knowledge came to be governed by a central regulatory authority. The CCIM drew up a uniform curriculum for the entire country, for the award of the degree *Bachelors of Ayurvedic Medicine and Surgery* (BAMS). This 5 ½ year program¹⁶³ has become the single point of entry to ayurvedic practice. With certification of professionals becoming institutionalized, knowledge and practice outside institutions have been delegitimized and the traditional channel of knowledge transmission disrupted. In the struggle between purists (*Shuddha Ayurveda*) and advocates of an integrated system, the latter emerged victorious. Elements of biomedicine were integrated into ayurvedic education, including instruction in modern anatomy and physiology. This brought in a fundamental change in the socialization of the practitioners. Though this led to a subsuming of Ayurveda within allopathic paradigm in rest of India, leading most Ayurveda graduates to mix allopathic medicine in their practice, Kerala maintained what is best described “medical parallelism” that required practitioners to cultivate a “dual subjectivity”, that is, “comparable expertise in both disciplines” (Wolfgram 2009: 158). The extent of practitioners’ engagement with biomedical knowledge varies considerably, but it remains at the diagnostic level; treatment has stayed within the classical ayurvedic framework.

The centralized framework also required standardization of curriculum which not surprisingly, worked against regional traditions. This is recognized by a reputed practitioner-scholar of Kerala,

The kind of ayurvedic education which was in Kerala 50 years ago was just to suit the requirements and specialties of Kerala. In the beginning of formal education in Kerala, curriculum was centered around Keraleeya tradition, and parallelly a *parampariya* (traditional) system was also co-existing outside the institutional system.*keraleeyata* (the kerala-ness) of the treatment tradition that evolved to suit the local realities (*kaladeshochitha*) was lost. Ashtanga Hridayam that was the basis of all the treatment in Kerala was removed from the curriculum. Medium of education became English (Tirumulpad 2007:35-36).

I argue that centralized institutionalization of ayurvedic education and transition from the apprentice system to modern education system was more damaging to ayurvedic metis than industrialization. It endangered transmission of metis in three significant ways.

¹⁶³ Admission to the course was later limited to those who had studied biology at pre-degree level.

4.3.3 It created a break in the traditional channel of knowledge transmission

Forcing the multiple community and regional traditions into a single centralized universal education system that cannot handle regional variations is the greatest disservice to ayurvedic metis, and therefore to local collective knowledge accumulated over centuries of experimentation. This attitude towards knowledge that favored institutional education over informal learning and exchange, has also affected other areas like agriculture (Stone 2010). Inability to comprehend the value of knowledge that is not certified by prestigious institutions, privileging text over practical knowledge, (Scott 1998) are some of the common faults of the modern educational paradigm.

In the early years of formalization of modern Ayurveda for metis-dense branches (for example, *Marma*, toxicology and eye-treatment), ayurvedic institutions in Kerala had used practitioners from the traditional background. Illustrious vaidyans without degrees were appointed as professors in reputed medical colleges. For example, a traditional *Siddha Marma* practitioner was appointed as a professor in Trivandrum Ayurveda College. One of his recipes for wound treatment (*Murivenna*), adapted and popularized by the college continues to be the most important of all medicines in Kerala (Kerala Ayurveda Limited 2011). A small, but locally reputed doctor-manufacturer I interviewed, said that his proprietary pain oil was based on a secret formula obtained from such a *Marma* vaidyan who was a visiting professor in the Trivandrum college hospital where he was doing internship in the mid-60s.



Annual joint regional conference of various unlicensed traditional practitioner associations, Ernakulam

With the freezing of registration for informally trained practitioners in the 70s, those outside the system got delegitimized¹⁶⁴. Today, spaces and channels to bridge the traditional and the formal no more exist; the formal is assumed to have absorbed the traditional making the traditional irrelevant

¹⁶⁴ In 1973, hereditary practitioners of Ayurveda were given chance to appear for an examination and on passing the examination were given 'A' class registration. Those who did not were denied the license.

and illegitimate. Transmission in the traditional style however continued outside formal institutions responding to popular demand for services. With increased symbolic value of Ayurveda, conflict between formal and informal streams has escalated; allegations of quackery have become more strident. Scott (1998) points out that the binary opposition between science and metis was an outcome of a history of competition between the institutions and personnel that sprang among these two forms of knowledge. In fact, I began my very first day of my field work in Kerala, in Feb. 26, 2008, with the witnessing of a state-wide ayurvedic *dharna* (sit-in) (*see image*). The central agenda was to protest the step-motherly treatment meted out by the State to Ayurveda (*vis-a-vis* allopathy). Another issue that some of the speakers were most concerned with was the increasing incidence of “*vyaja vaidyans*’



Ayurveda Dharna (Sit-in), Collectorate office, Ernakulam



(quack doctors). The conflict between the degree holding practitioners and the *parampariya vaidyans* came to a head in early 2009 when the Kerala government allowed a relaxation of registration requirements favoring the latter in a notification dated June 4th 2009. On July 2nd 2009, Ayurvedic Aikya Vedi, a joint forum of students and teachers, went on a state wide agitation demanding a repeal. After a protracted battle that went on for two years, the government was forced to relent following orders from the Center and later from the Kerala High Court. A commission was constituted to evaluate claims of traditional practitioners and award license to genuine practitioners.

4.3.4 Shift in emphasis from practical learning to classroom instruction¹⁶⁵

A major difference between formal and traditional education is that the latter was more hands on. In the modern ayurvedic college, the primary identity of faculty derives from being classroom instructors rather than practitioners. They earn their livelihood from salaries paid by the institution and do not have the compulsion to establish a successful practice. Contrary to this, the *gurukula* was a site of active ayurvedic practice - including treatment and medicine making. Education was just a part of the whole set up, wherein instruction in classics would supplement practical education, and the students contributed to the establishment with their knowledge and skills. An illustration of such a *gurukula* is provided in biography of AVS founder.

While examining a patient and deciding on the course of treatment...the guru would quote a verse from the chapter where the kind of symptoms the patient had were described and then cite the *yogam*, the specific formulation used to process the medicine for those symptoms. The student was expected to situate the verse in the chapter it belonged to, and be able to make up the medicine according to the formulation mentioned in it. A strict guru would often refrain from repeating the verse, if his student had not been quick enough to grasp it. Periods of study varied and so did their intensity; often, students could learn far more from a practical session, watching their guru examine, diagnose and prescribe than from hours of learning a text by rote. Alertness, sharp observation, an ability to consistently relate verses from ancient texts to practical modes of application; these were the qualities that *gurukula* disciple had to train himself to develop (Krishnankutty 2001: 23).

Formal education gave more importance to theory and less to medicine-making or medicinal herb identification, though both continue to be part of the curriculum. One major constraint is that of the time span. A traditional practitioner typically began learning from early childhood if the learning was within the family or at an average age of 12 under a Guru. It would take several years of apprenticeship before emerging as an independent practitioner. Before getting exposure to theory, they would be acquainted with a considerable amount of practical education including identifying herbs, medicine making, observing and participating in the diagnostic process. For students who came to medical college without any knowledge of Sanskrit or previous background of Ayurveda or medicinal plants, the five year term is too short to accommodate more than superficial exposure to all these areas of knowledge. The average formally educated ayurvedic doctor is therefore considered deficient in practical knowledge, especially, of plants and medicine making. This difference is often emphasized by

¹⁶⁵ Discussion in this section is based on Based on narratives of traditional practitioners and of formally trained doctors from traditional practitioner families who were familiar with both formal and non-formal systems combined with information from speeches and discussions in conferences, and from secondary literature, biographical and historical work.

those who are familiar with the traditional system of education, traditional practitioners and formally educated practitioners who come from practitioner families¹⁶⁶. Raw-drug shop keepers too have a lot to say about this distinction without asking, especially because it is the decline of traditional practitioners that had affected their business. Interestingly, an awareness of the shortcomings of modern schooled practitioners is also widespread in popular culture¹⁶⁷.

But modern formal curriculum co-evolved with the industry; the centralized curriculum was formulated almost half a century after industrial production. In Kerala for instance, the founder of AVS was influential in formulating a formal educational program, shaped by his own good and bad experiences with the *gurukula* system.¹⁶⁸ When AVS started industrial production in early 19th century, early attempts of formalizing ayurvedic education was already in place. The Arya Vaidyan Diploma awarded by AVS created a network of vaidyans who naturally became its extended arms. For Varier, it was part of institution building and strengthening of Ayurveda, formalizing it, creating a certification process, manufacturing medicines. Did the interests and perceptions of the industry play into what was expected of the doctor? It is not easy to answer this question, it would require a careful historical analysis of the process of formalization of education¹⁶⁹.

Whether the industry had a hand in deemphasizing medicine-making in education or not, it is likely to have benefited from the decline in medicine-making skills of practitioners. In the pre-formal period majority of students came from traditional practitioner backgrounds, already exposed to medicine-making at home. Post 70s, with the expansion of formal education, there were more and more people coming from non-traditional backgrounds who did not have the advantage of traditionally

¹⁶⁶ For example, an unlicensed eye specialist vaidyan who had studied from a traditional *gurukula* had an interesting story to tell. His father had sent his elder brother to a formal Ayurvedic system and he wanted to send him to a traditional *gurukula* to complement his education so they could practice together. His (late) brother's scholarship and qualification and his own expertise in medicine-making went very well, and they together set up a small clinic and vaidyashala.

¹⁶⁷ The agricultural scientist who has no experience with soil advising the farmer is often caricatured in Malayalam movies. College educated Ayurvedic doctors' plant knowledge similarly looked down upon. Not only traditional vaidyans and raw drug store keepers, knowledgeable consumers too harbor such images. Mary, a retired teacher in her mid 60s in central Kerala can recognize all the plants in her surroundings. Talking about her Ayurvedic doctor sister who was a high level official she said, "She may be an Ayurvedic doctor, but what does she know about plants, she studied in a college!"

¹⁶⁸ An episode of carrying a heavy load for a *guru* without adequate food made him ill disrupting his studies for six months, but he was a dedicated disciple and, far from protesting, he enjoyed his privileged since it gave him greater opportunities to be with his guru, to observe and to learn from him (Krishnankutty 2001:24)."

¹⁶⁹ The *Pathshala* that P. S. Varier was designed to combine the best of old and new systems, as were the most pre-modern formal courses of training mentioned earlier. A close investigation will be required to identify the nature and manner of departure from 'the best in *gurukulam* method'.

acquired metis¹⁷⁰. Formal training created more demand for ready manufactured medicines, and expansion in agencies.¹⁷¹ The agency distribution model (as discussed in Section 2.10), took shape in the 40s and 50s, took wing in the 60s and continued spiraling in growth after the 70s, with the expansion of formal education. Some say the growth peaked in the 80s, some say it peaked in the 90s.¹⁷² Agencies continue to expand as more colleges open and more doctors are churned out.¹⁷³ Manufacturers prefer doctors as agency owners, for they naturally draw more clientele. For the institutionally trained doctors with less hands on experience, the margins they get on dispensing factory-made medicines appear far more lucrative in relation to the drudgery of medicine making. Even if a doctor is inclined towards making medicines for self-consumption, setting up a manufacturing unit is no mean task. Though the equipment needed at small scale is simple, not all have the wherewithal to invest in a business that has low margin of returns. For women doctors, who constitute 50% or more of the ayurvedic practitioner community in Kerala, capital is harder to come by even to set up their own clinics. For these reasons, it is uncommon to find formally trained practitioners without family background in the medicine making business.

4.3.5 Disruption in the transfer of practitioner's personal metis

The revivalist ideology considered practitioners' secretiveness as one of the prime causes for the decline of Ayurveda (Leslie 1976). This argument was internalized by the ayurvedic community without any protest, despite the fact that much of Ayurveda was and continues to be fundamentally open-source. Perhaps underlying this fuelled and aided the confrontation of the more prestigious codified Ayurveda with metis-heavy non-codified traditions. (Like for instance the *single-root practitioners* in Kerala). This self-critical argument was repeated so often that it has become ingrained in practitioner psyche and continues to surface in everyday conversation. After a hair-rising account of his unsuccessful attempts to elicit a secret and powerful medicine from a vaidyan, a formally trained

¹⁷⁰Based on practitioner recollections.

¹⁷¹This would be an interesting correlation to subject to a quantitative study. Had I had this focus in mind from the beginning of the study, I would have put some effort to get these figures, but this data is not easy to get hands on.

¹⁷²from narratives of elderly traditional practitioners.

¹⁷³While until recently only 300 Ayurvedic doctors were produced a year in Kerala, with 6 new colleges opening in the past decade, the annual figures have now touched around 600 within Kerala. Perhaps double that number of students from Kerala would be graduating from self-financing colleges in neighboring states and returning home to practice. There are self-financing institutions in states like Karnataka that are known to specifically target the Kerala population, because of the historical unwillingness of the Kerala government to allow liberalization of education policy.

ayurvedic doctor complained, “It is this attitude that caused Ayurveda’s downfall. There were many reputed vaidyan families in this region, now they are no more, the secrets have died with them”.

Negative perception of vaidyans’ reluctance to share knowledge arises from lack of appreciation of the significance of personal relationships between masters and disciples, a factor recognized by Hsu (1999) in the context of Chinese medicine. She identifies three modes of transmission ‘secret’, ‘personal’ and ‘institutional’, contending that ‘personal’ knowledge often gets subsumed under ‘secret’ knowledge.

To what degree and what kind of knowledge was transmitted depended very much on the personalities involved...even if their personalities clashed, it was perfectly acceptable for mentor and follower to accept and reject each other on grounds of character and personality...Crucial was whether mentor and follower had faith in each other and could build a relationship of mutual trust (Hsu 1999:102).

The *gurukula* provided the opportunity for a personal relationship between the guru and the disciple. The trust built in this relationship was critical in motivating the guru to transmit to the disciple, the valuable knowledge accumulated over a life time of practice including all tricks and secrets of the trade. The institutional set up does not provide the opportunity for such a relationship to develop. In the absence of guru-disciple transmission the knowledge generated during the life time of a vaidyan, remains with the vaidyan.

Even fresh Ayurveda graduates recognize the significance of local practical knowledge that they fail to obtain in colleges. It is common to find Malayalee graduates from private medical colleges outside Kerala, attempting to gain access to ‘the Kerala tradition’ by doing internship with practitioners and hospitals in Kerala. Some prefer to do internships with practitioners reputed for their traditional knowledge. I came across one such student unofficially interning with an unlicensed traditional practitioner in a remote location. Dr. Jojoy Thachil, the General Secretary of the largest ayurvedic practitioner organization in Kerala, AMAI (Ayurvedic Medical Association of India), said they conduct camps to provide training in Kerala tradition, meant exclusively to Malayalis who have had the misfortune of studying outside Kerala.

In the institutional system, there is no robust mechanism to channel feedback to flow from the

individual doctor to the collective and back¹⁷⁴. Research in the modern setting is concentrated in academic institutions that depend on government research grants, and are less connected to everyday concerns of clinical practice. This is not surprising given that even biomedical knowledge, despite its dependence on centralized knowledge production, shares a similar predicament. “In the absence of physician-scientists¹⁷⁵, the bridge between bench and bedside will weaken, perhaps even collapse.... would not only impede the process of questions inspired by a patient's condition becoming a research topic, it would also impede the flow of disease-relevant information” (Rosenberg 1999: 331). The *Guru-Shishya* (student-disciple) program instituted by the central department of Indian medicine in the recent past intends to bridge this gap between formal and informal, between academics and practice. It provides an opportunity for selected meritorious students to do their postgraduate education under senior vaidyans of repute including pre-BAMS era practitioners. A prestigious private institute in Bangalore has recently instituted a ‘Vaidya Scientist Fellow program’, however its objectives are different and not clinical practice oriented. It aims to train young ayurvedic teachers in modern scientific scholarship, with the aim of bridging the gap between ‘Shastra’ and ‘science’.

4.3.6 Summing up

In the *gurukula* system, the guru was the owner of the teaching institution; the disciples stayed with him¹⁷⁶ in his house or in an attached residence. There was no instruction fee. The disciples provided labor and services to the guru. They assisted in everyday household work, and as apprentices, helped in medicine making, handling patients and administering therapies. Those who could afford compensated the Guru in kind, though it was not expected. For instance, Shankaran, a eye specialist practitioner, said that he stayed three years in the residence of a reputed Guru to learn medicine. Though there was no expectation of payment, being from a middle class farmer’s family, he could afford to make occasional donations of rice, vegetables and fruits harvested from their family farm.

¹⁷⁴ It is easy to underestimate this, because the system of knowledge exchange that goes on between physicians is invisible. I have got a few glimpses of this exchange in doctors’ narratives of interactions with other doctors, especially in cross-referencing or exchanging information on difficult cases. Also, at a formal level, practitioner organizations like AMAI in Kerala have been able to provide the forum for exchange and knowledge generation, as evident by the Chikun Guniya protocol (Appendix C) But link between research funding and practitioner associations are poor, the reason why Ayurvedic professionals is slow to respond promptly to pressing contemporary problems, especially epidemics.

¹⁷⁵ The term “physician-scientist” denotes M.D.’s who devote all or a majority of their professional effort to seeking new knowledge about health and disease through research.

¹⁷⁶ *Gurukulas* are usually run by male vaidyans though their wives also could be vaidyans and be part of the establishment.

In the modern institutional system, the teachers are not autonomous; they are employees of an institution and are accountable to students. A reputed Ayurvedic practitioner-scholar who is also the principal of an Ayurvedic medical college in Kerala, points out that “collective responsibility” to students has led to deterioration of ayurvedic academy. “Teaching became just another job. Instead of preceptors (*acharya*) mediocre teachers (*upadhyaya*) flooded the field and teachers are no more ideal idols on high pedestals” (Agnivesh 2002: 230). In the *gurukula* on the other hand, students were obliged to the guru for admission and the feeless instruction. From the modernist perspective, the subservient relationship of the student to a single guru might seem feudal and archaic. But it provided an atmosphere for a relationship to emerge that is often comparable to a parent child relationship. Whether it was authoritarian or democratic depended on the individual guru’s personality.

To a certain extent there were barriers to universal access of advanced education in the *gurukula* system. In the modern system, caste and gender barriers were eliminated, but on the other hand, there is an economic barrier. The *gurukula* mode worked well for those coming from an economically disadvantaged background. In the institutional system, only a few meritorious students get access to free State subsidized education. The rest have to shell out a fortune (close to a million rupees/\$ 20,000) for allegedly poor quality education in self-financing colleges outside Kerala. Besides social inequity in opportunity, this scenario has serious repercussions for practice. Doctor graduates from such colleges, like their counterparts in biomedicine, are under pressure to recoup the investment made, making them profit-oriented, thus making them vulnerable to lure of industry incentives.

4.4 Post-script

The analysis in this chapter was based on narratives of educational experiences of practitioners and significant others. Since ayurvedic colleges were not part of the study sample, I had not paid direct attention to the process of skilling¹⁷⁷. Disquiet about the education system per se is often raised in professional forums. A recent nation wide survey of ayurvedic education showed inadequacy of practical knowledge (Patwardhan 2011). But would today’s practitioners agree with the analysis that unfavorably compares the modern institutional system with the *gurukula* system? Since I had not

¹⁷⁷ an issue that came up as significant only during the later stage of analysis.

collected responses from the stakeholders on this issue that had emerged as significant post analysis, I had no answer to this question. Retrospecting on interactions in the field, I conjectured that the average modern ayurvedic doctor who wanted to move towards a more progressive and scientific system would be wary of the portrayal of *gurukula* system as superior to the modern institution. For example, in an article on *gurukula* system a reputed scholar, a principal of an ayurvedic college criticizes the “extreme conservatism of ayurvedic ‘elite’ that holds that ayurvedic wisdom cannot be imparted in colleges and universities” (Agnivesh 2002: 234). An earlier proposal by the CCIM to create a parallel stream of ayurvedic medical education, to catch younger students and giving them more time (seven years) for a better exposure, had to be withdrawn after stiff protest from ayurvedic doctors. The reason for the protest becomes evident in this statement: “Ayurvedic experts who want to make drastic changes in ayurvedic academy may keep in mind that visiting the past may aid to strengthen the future, but opting to stay back there is historical regression, and will be detrimental to the future (Agnivesh 2002: 235).”

Follow-up field work presented a surprise in the form of an expert panel discussion in the last session of the three day Global Ayurveda Festival in Trivandrum in February 2012¹⁷⁸. The subject of discussion was comparison between the *gurukula* and the modern college education system. The panel represented all the stakeholders - manufacturers, practitioners and academicians. The views of the panel were polarized. There was a clear difference between the two stakeholders, the manufacturers and the practitioners of Kerala as represented by the heads of the two organizations, AMMOI and AMAI respectively. The General Secretary of AMMOI (Ayurvedic Manufacturers’ Association of India), Dr. D. Ramanathan, also a proprietor-MD of Sitaram Ayurveda Pharmacy, expressed dissatisfaction with the quality of output of ayurvedic colleges. His main submission was that graduates from such colleges were lacking in practical knowledge of medicines, including knowledge of plant, raw drug and medicine identities and pharmacological knowledge. This he said was becoming a huge problem for manufacturers like him who have so far depended on the classical market to survive. He was visibly agitated with the status of affairs, and sounded distressed as he said “manufacturers like me would be

¹⁷⁸ This was a surprise because in the three year period of my field work, I had attended five national conferences, business summits and several workshops, but had never come across this topic being taken up for public discussion.

forced to change our strategy to selling branded products”. Representing the practitioner body, Dr. V. G. Udaykumar, the General secretary of AMAI (Ayurvedic Medical Association of India) was unwilling to accept what he considered a sweeping comment on educational quality in Kerala. While admitting some inadequacies in the system, he argued that these should be addressed within the system, vehemently opposing the *gurukula* proposal as a move to go backwards. He argued against the creation of two parallel set of professionals, pointing that such a policy would be discriminatory.

There was active participation in the discussion by a section of the audience. Three students, a few undergraduates and postgraduate students made emotionally charged comments airing their grouses about the education system. The AMAI General Secretary responded with surprise, re-examining his earlier statement about the confidence in the quality of educational institutions of Kerala. Owner-MDs of two reputed manufacturing companies¹⁷⁹ came out strongly in support of the *gurukula* system. Both these companies are heavily invested in classical products and treatment, but are fairly open in their approach to the market. AVP has a new WHO GMP manufacturing unit, AVN has been leading in the re-invention of classical products. Dr. P. R. Krishnakumar, the proprietor of AVP, is a well respected figure in the Kerala Ayurveda circle is also known for his critical view of ayurvedic education. A few years ago, he instituted a *gurukula* mode of education that admits young students between the age of 15-17 providing them with free education for eight years.

In Section 4.3.4, I raised a question with regard to the possible role of the industry in shaping the skilling process on the premise that the industry would benefit by deskilling the practitioner. The panel discussion provided a divergent picture. Manufacturers of classical medicines were losing their market because of lack of adequate knowledge among the new generation of doctors. They wanted to reestablish the *gurukula* system of education to arm medical graduates with adequate training and knowledge, so that they would be able to maintain and grow Ayurveda’s classical therapy market. This was made further clear to me by Dr. D. Ramanathan, the General Secretary of AMMOI later in a personal interview. He reiterated his concerns, and pointed out that when Dr. P S Varier, the founder of AVS, had initiated the process of modernization of education, he had done it on the lines of the *gurukula* model. Though today, his company Sitaram Ayurveda Pharmacy is invested in celebrity

¹⁷⁹ Arya Vaidya Pharmacy and Arya Vaidya Nilayam, both are based in Coimbatore but are manufacturers of Kerala origin.

advertizing for an OTC product, he claims his heart is in classical ayurveda. He got worked up talking about how the modern system of education was killing his business pointing out that there was a vast difference between the capability of average Ayurveda college graduates and traditionally trained vaidyans in their ability to attract patients. As an example he introduced me to a doctor whom he had recently hired to work in his hospital, Dr. Sreejith, a fresh graduate from a remote rural area who hailed from a traditional eye specialist vaidyan family. This doctor, in the very beginning of his career had already managed to attract a steady stream of patients, a practice that graduates without such background would take years to establish. His family knowledge combined with the degree had equipped him with practical knowledge and associated confidence to treat critical diseases like diabetic retinopathy and macular degeneration, competing with allopathic surgeons. Among his patients was an European patient getting treated for Retinal Pigmentosa. Since the treatment was ameliorative, and this was the best cure the patient had found, he visited the hospital once annually for a 30 day course of treatment. For Dr. Ramanathan, this vaidyan was an illustration of how rightly trained ayurvedic vaidyans can establish clientele, maintain the therapy market and consequently create demand for classical products. It was this kind of doctors that he feels are getting rarer with deterioration in quality of education.

But an ex-secretary of the Kerala ayurvedic practitioner body, AMAI, raised questions with regard to the industry's intentions. Until recently, the industry had supported the State's move to relax rules for letting unlicensed practitioners practice. "They do not care whether the professionals are qualified or not, as far as they have more doctors to sell medicines". According to him, unlicensed practitioners are nothing but quacks, the State is driven by political interest and the industry by vested interest in the market. The non-institutionally trained, unlicensed, vaidyan respondents on the other hand feel that the schooled doctors are jealous of their ability to attract patients. At the end of the field work, the plot was certainly getting thicker and murkier.

4.5 Conclusion

Vaidyan's involvement in medicine making is important in keeping intact the process of what I refer to as 'thinking medicine', i.e., the cognitive processes that have hitherto contributed to the production of ayurvedic knowledge. The cognitive processes that goes into the making of the "ayurvedic physician a scientist" (Travick 1987), over several generations of practice and experimentation goes on to produce different cultures of practice. Divergence in practices, whether in term of protocols or formulations have their basis in this experimentation rather than being 'imperfections' resulting from disuse or erroneous use. It was such a process that had led to the evolution of different regional traditions, Kerala tradition being one such outgrowth. Banerjee (2009:21) rightly points out that though heavily based in texts, ayurveda's texts cannot be considered canonical, because while being closed at one end by its epistemology, it is open-ended to improvise from empirical situations. As a result, she says, "there is not only one Ayurveda, but many ayurvedas-many traditions of practice that follow and contradict texts...and in doing so, contribute to further texts and parameters of practice."

Genome biologist Thangavelu is drawn to Kerala because of its fame as the place for excellence in Ayurveda, but his frame of excellence is 'expertise in classical texts', the absence of which shocks him. Many ayurvedic practitioners from other parts of India travel to Kerala seeking a connection to the ancient classical antiquity lost elsewhere. The fact that Ayurveda in Kerala is closer to the original texts because of it being isolated from Mughal invasion (See Section 3.1) adds to this illusion. They fail to recognize the significance of the collective history of practice in shaping 'Kerala Ayurveda.' The revivalist framing of Ayurveda as belonging to a monolithic classical tradition, with its emphasis on theory laid out in the classics as the basis of the 'Science of Ayurveda' has played a formative role in the homogenization of knowledge in modern institutions. There is an implicit assumption that variations are errors to be eliminated. The globalization bandwagon provides the push factor that makes practitioners and manufacturers conscious and apologetic of variability. The political nature of barriers that hinder the international expansion of ayurveda is often ignored, accusations are routinely hurled at Ayurveda's 'lack of standardization'. The ayurvedic community, is quick to internalize the

blame; the 'progressive' among them exhort the 'less progressive' to shed their 'traditional' mindset, to march forward to meet the challenges of globalization.

I argue that the systematic weakening of the skilling process through modern institutionalization is the fundamental factor that contributes to the deskilling of the ayurvedic doctor. Ayurvedic manufacturing industry is more a dependent than an independent variable. Paradoxically, rather than benefiting from the lack of practitioner metis, the industry appears to be suffering from the lack of it. They are afraid that like North Indian manufacturers they will be forced to shift towards branded products. Instead of moving away from the classical context like their counterparts, they seek to bring back to ayurvedic education its lost robustness, in the hope of creating a future market for their therapy products. When asked if the North Indian industry was forced to move away because of a weakened consumer base, Mr. Ranjith Puranik, the CEO of SDL, refused to exonerate the industry. He pointed out "lack of commitment" as a reason for the easy caving in of large manufacturers. Manufacturers in Kerala continue to have the 'commitment factor' lacking in large manufacturers in North India. I argued in Chapter 2 that this was because they were not just medicine makers, but institutions that proffered therapy and education, and that the practitioner logic that governs them overrides the business logic that dictates the industry elsewhere.

Irrespective of difference of opinion and conflict of interest, there is a consensus among the ayurvedic community that practical knowledge of medicine making and plant knowledge in addition to greater exposure to clinical experience is necessary for ayurvedic doctors to establish successful practice. There is no disagreement about the shortcomings of the current education system or on the virtues of the *gurukula* system. The difference of opinion is in the nature of reform. A section of industry calls for an alternative *gurukula* based system arguing that the institutional system has inherent limitations. On the other hand, a section of practitioners oppose the creation of an alternative system, contending that existing institutions can be reformed to incorporate the positive features of the *gurukula* system.

CH 5 COMMODIFICATION OF THE DECOCTION

Ayurvedic medicines can be broadly classified as herbal and herbo-mineral. While the herbo-mineral pharmacopeia dominates ayurvedic practice in rest of India, Kerala has remained faithful to the classical herb-centric pharmacopeia. Unlike the former which is mostly restricted to the expert realm, herbal formulations include both complex and simple forms. Historically, in Kerala, complex preparations like pills and vines used to be made by vaidyans or artisan producers. Simple and perishable forms of medicine like fresh juice, pastes and decoctions were made at home. Local raw material was sourced from surroundings; non-local material was purchased from raw drug stores. One of the simple forms, the ‘decoction’ (kashayam) took the center stage in the ayurvedic pharmacopeia in Kerala. Owing to the simplicity of process and perishability of the product, it hardly made sense for a vaidyan or specialist to provide prepared decoctions. It is the decoction-centeredness of ayurvedic practice in Kerala, I argue, was responsible for familiarizing people with the processing of classical formulations, and consequently, acquainting them with raw drug ingredients. Not only did this promote familiarity with local herbs, but it also created a steady demand for non-local ingredients, leading to a flourishing retail medicinal raw drug market.

Biographies of two index plants, *brahmi* and *kurunthoti*, help us navigate through various levels of people’s relationships with plants, including every day use, seasonal medicinal practices, postnatal care, and classical ayurvedic use. They also provide a glimpse into the confusions that arise when customers are confronted with new commodity ‘forms’. The social life of *brahmi* shows traditional household use for infant care (Section 5.2). As a representative of widespread use in household and classical decoction, index herb *kurunthoti* demonstrates the centrality of decoction in Kerala pharmacopeia (5.7). *Kurunthoti* also plays an important role in popular health care of expectant mothers. With obstetrics being officially relegated to the realm of allopathy, culturally embedded ayurvedic pre and post delivery health care practices come into conflict with allopathic doctors’ beliefs. The exchange between two expecting mothers in 5.8, showcases the everyday turf battle between allopathic and ayurvedic systems of medicine.

The dominance of the Kerala pharmacopeia by simple forms like decoctions and the consequent

popular habit and metis cultivated in processing such medicines posed a social barrier to capital intrusion¹⁸⁰ (Capital in this context refers to large scale industrial processing of medicines). The turning point in ayurvedic practice, I argue, is the commodification of the decoction (Section 5.9). By the simple step of adding preservatives to the decoction, the physical barrier to capital posed by its perishability was irrevocably broken down. It was the first step towards deskilling the consumer. Though the medicine making skill per se is rudimentary, it had led the consumer to develop an affinity with classical medicines and the associated skill of plant identification.

While the preservatives in the decoction remained invisible and less intrusive, with the progress of industrial production, traditional forms of medicine were increasingly being replaced by modern forms. In Section 5.3, index herb *brahmi* provides an illustration to the helplessness of the consumer caught between traditional habits and non-traditional commodities which takes us to the contested territory surrounding ‘form’ changes in ayurvedic medicine. A descriptive note on classical forms (Section 5.4) and the classical logic of ayurvedic pharmacology (Section 5.5) is provided as a backgrounder.

Though the industry has been successful in breaking the barrier of habit and skill, as evident by the widespread market penetration of factory made decoctions, the culture of home cooking decoctions continues to co-exist. Consumers continue to invest time and labor in the pursuit of authenticity. Section 5.9 shows how various new forms have evolved in the crowded space between the factory and home. Instead of stopping the consumers from cooking decoctions at home, these commodities promise to aid them in the process.

5.1 The unyielding Malayalee

Varier had found it easier to persuade ayurvedic doctors to buy finished medicines than to convince consumers to stop making medicines at home. In an article in the AVS-run ayurvedic journal *Dhanwantary*, he lamented that people in general were still “not used to buying medicines or paying for them”, that “they have no idea whatsoever of the costs of manufacture”. “They do not understand

¹⁸⁰ Kloppenburg (1994) identifies technological and institutional barriers to capital in the context of the commodification of the seed.

that medicines processed under the strict supervision of a trained vaidyan could be of a much higher quality than home-made ones” and are therefore reluctant to pay the price marked on them (Varier 1908:52). Compared to his counterparts in rest of India, Varier was functioning in a different milieu; people in Kerala were in the habit of making medicines at home. The pervasive influence of classical Ayurveda in Kerala had created a unique culture of practice and consumption. Traditionally, practitioners would write a prescription that would either list the ingredients or just the name of the classical formulation; the raw drug shop keeper was expected to know the composition. People would buy whatever they could source locally from the raw drug shop and cook the medicine at home. In the early decades of 1900s, the modern working woman was yet to evolve. For women farmers and homemakers, cooking medicine was nothing but an extension of kitchen activity. Even an entrepreneur in the food market would have found the consumer equally recalcitrant to commodification beyond the level of raw ingredients. The boom in the market for branded ground spices is a post 70s phenomena. It

is only in the past decade that branded rice and wheat flours have become popular. Distrust of ground spices and grains about poor quality ingredients or adulteration is still highly prevalent across India. It is common for people to ascribe health problems to adulteration of food (Nichter 1989, Sujatha 2007). The drudgery of chopping and grinding was what was making people vulnerable to branded ground spices. The hurdle in primary processing of raw drugs was overcome with the progress of mechanization; flour mills began to be popularly accessible since late 60s. People were able to make use of these facilities to get both their spices and medicines grounded. During my fieldwork, I have come across five flour mills in Thrissur and Ernakulam districts, that sported boards announcing separate facility for the processing of raw medicine ingredients¹⁸¹.



A flour mill in Thrissur: the display board announces the facility to pulverize raw drugs

¹⁸¹ Two mill owner informants said that their customers included vaidyans, consumers, and small scale manufacturers.

5.2 *Brahmi*, the memory plant

From the day his daughter arrived home for delivery, *Jacob* and his wife have begun an elaborate preparation for postnatal care for both mother and child. Of the various tasks on *Jacob's* list, highest on the priority is getting a *brahmi* sapling to plant in his garden. The herb ought to be ready for harvest by the time the baby is born, so that the new born baby is not deprived of its due; it is customary to feed the infant with a few drops of *brahmi* juice daily for the first couple of weeks. It is believed that it is essential for *buddhi vardhana*, 'development of the intellect.' Equally important for the baby at this time is *Vayambu* (*Acorus calamus*, the drug *vacha* in Sanskrit, meaning speech), for promoting healthy speech development. The practice is to embed a string of gold inside a 2-3 inch long piece of the dried rhizome, which is often done with the help of the goldsmith. This piece is grated on a piece of stone and the paste applied to the baby's tongue once every day, for around a month. The quantity of gold expected to be used is minute, but sometimes people overuse it to make a statement of status. *Mary*, a rich housewife from Kottayam says, "Look at my son's complexion, isn't it glowing? we fed him with half a sovereign¹⁸² of gold with *Vayambu*."

Jacob and his wife are a small farming family in the interior midland region of Kerala. Very little is left of their original diverse home garden style of cultivation, all of the inherited two acres is converted to rubber cultivation. All they have now, like any city dweller, is a small patch of land around the house which is adorned with a number of potted plants, most of which are ornamental. He and his wife are regular consumers of medicinal plants like *kurunthoti*, *cheroola*, *nilamparanda*, all of which are available in whatever little left of the commons, untended roadsides and absentee house owners' uncultivated yards. It is getting harder and harder to find many of these plants because of rubber cultivation and urban landscaping. Formerly, he used to depend on the raw drug shop only for non-local medicinal plants like *Vayambu*, but now he has to go there even for local herbs.

Popular knowledge of medicinal plants in Kerala is closely linked to ayurvedic use, but at the same time it is also part of people's repertoire of home remedies and cultural practices. Though half

¹⁸² = 4 gms. (1 sovereign = 8 gms). Though gold is a pharmacological ingredient, the typical quantity used is ¼ to ½ gm.

the Kerala population is now urban¹⁸³, but for the core large city dwellers, the rest continue to live in houses surrounded by small homegardens. These are not fashionable urban gardens dominated by ornamental plants, but abridged versions of the old homesteads tuned to multiple functional uses. Most medicinal plants are naturally growing weedy plants that are consciously maintained while a few are cultivated. On an average people are familiar with half of around 100 medicinal plant species found in the homegardens and commons.¹⁸⁴ This is not surprising given that 52 species were being used just for postnatal care in South Kerala (Rajith et al 2010). In terms of herb use, Kerala is not exceptional; a recent study (Ved and Goraya 2007) estimated household consumption as 27% of the total consumption of herbal raw drugs in the country. In fact, in terms of number of species consumed, Kerala falls far behind the rest¹⁸⁵. List developed with input from one informant, cross-checked with three other informants shows that 55-65 plants were part of the common knowledge of an average rural resident. Many of these are also popular because of their non-medicinal uses, as vegetable, spice, religious use¹⁸⁶ and so on. Knowledge of medicinal uses is less widespread. This is difficult to extract from a simple checklist because people typically depend on collective knowledge. Every village has a few people who can recognize almost every single plant in the surroundings.¹⁸⁷ It is common to see patients being flooded by advice on home remedies from friends and relatives. Articles in Malayalam health magazines¹⁸⁸ and self-care booklets add to the household remedy repertoire. For example, during the *Karkidakam* month, print and television media overflow with advises and recipes of seasonal regimes.

¹⁸³ The urban population spiked only in the last decade, from 25% (2001 census) to 47.72% (2011 census).

¹⁸⁴ There is significant variation in the number of species depending on ecological habitat, proximity of forest and current status of habitat (extent of urbanization, nature of cultivation, etc.). Collectively the number would go far higher, 150-170. Certain species have restricted habitats, for example, aquatic herbs like *brahmi*, forest-species like *thelli*.

¹⁸⁵ Kerala: 98 Tamil Nadu: 104 Orissa: 130 Andhra Pradesh: 170 and Karnataka: 179.

¹⁸⁶ While a few like *tulasi* have direct religious significance, wild flowers take a central part in religious/cultural occasions in Kerala. The most significant is *Onam Pookkalam*, floral design made on the occasion of the Kerala state festival *Onam*.

¹⁸⁷ These are not necessarily vaidyans, but mostly likely to be people from background in families with medical practice, especially from castes like *Velans*, *Ganikas* and *Ezhavas* or those involved in collecting medicinal plants or working as assistants to vaidyans. They could also be others with exceptional interest. I encountered three such people, a taxi service runner who acquired his knowledge from hunting, a retired woman school teacher, another was a farmer cum petty salesman who used to be a land surveyor. There was no specific gender difference in the distribution of such knowledge.

¹⁸⁸ Every large media house has a health periodical, three of which are highly popular. They give equal space to all systems of medicine, but Ayurvedic products corner lion's share in terms of advertisement. The most popular, Mathrubhumi Arogya Masika has a monthly readership of 826,000.

Jacob's routine represents the typical routine of a farmer's life in central Kerala¹⁸⁹. Practices like this cut across all socio-economic classes. Their neighbor Leelamma, a landless laborer, follows the same set of practices, though she is ready to walk longer distances in search of herbs and to use less valuable substitutes rather than buying from the market. Practices associated with household use of *brahmi* revolve around the faith in its intellect-enhancing properties. For example, people in rural Ernakulam fry *brahmi* leaves in oil for applying on their heads especially for kids to help in 'developing the brain'. The word *brahmi* is derived from *Saraswati*, the Goddess of knowledge.

Like many other plants in the ayurvedic pharmacopeia, *brahmi* suffers from an identity confusion. The ayurvedic drug name refers to two different plants, *Bacopa monnieri* and *Centella asiatica*¹⁹⁰, considered interchangeable in northern parts of India. Both are aquatic and widely distributed across the tropics, but botanically distinct. In Kerala, there is no identity confusion; *Bacopa monnieri* is the only *brahmi*. *Centella asiatica*¹⁹¹ is considered to be in the similar league, but with different properties and distinct therapeutic uses.¹⁹² Here onwards, unless otherwise mentioned, *brahmi* refers to *Bacopa monnieri*. In Malayalam, the Sanskrit name *brahmi* is the most commonly used, but it is also called *Neer-brahmi* (*Neer*=water). *Bacopa monnieri* (family: Scrophulariaceae), is an annual, diminutive¹⁹³ aquatic ground creeper with bright green and tiny succulent leaves. It grows in wet lands and marshes, near streams, paddy fields and tank bunds. For much of Kerala which is water-rich, *brahmi* is easily accessible. People in midlands and towns who do not have access the herb in their gardens¹⁹⁴. But for people who live in cities, especially outside Kerala, following tradition is not an easy task both because of the absence of the cultural milieu and lack of access to the plant. For example Kavitha, a Malayalee Pune resident says she wants to follow at least some important

¹⁸⁹ Typically women take charge of post delivery care, but it is not uncommon to find men equally involved. In this case *Jacob* was in charge because of his wife's illness. Also being a farmer he was more familiar with plants than his semi-urban wife. In another family I interacted with in the same region, the lady of the house, a retired teacher, was in charge of all activities. Her bank employee husband's herb knowledge was limited. The difference in knowledge appears to be larger between farmers and non-farmers than between genders. As a rule, processing medicine is a woman's realm as it is considered an extension of the cooking activity, but men are involved in sourcing and pre-processing material.

¹⁹⁰ *Kodavan/kutangal* in Malayalam and *mandookaparni* in Sanskrit

¹⁹¹ *Centella asiatica* is widely used in medicine and cuisine in South East Asia and has a worldwide market whereas *Bacopa's* commodity life primarily stems from its Ayurvedic roots.

¹⁹² The classical triad of compendiums make a distinction between the two, but the north Indian practice follows from Rajanightantu (C. 14th Century CE). They are different in *Rasas* (bitter Vs astringent), the former is used to treat mental diseases, epilepsy whereas the latter has more of a rejuvenative effect, the former promotes fertility whereas latter has an abortive effect (Sivarajan and Balachandran 1994).

¹⁹³ grows around 10 cm. in height.

¹⁹⁴ One technique used is to grow the herb in the crevice of a dead palm tree trunk that acts as an artificial water body.

traditional practices, but does not know where to get the raw material, language being a significant barrier. She grows essential herbs like *tulasi* (holy basil) and *panikoorka* (*Coleus* spp.) to treat cold and fever. *Brahmi* is easy to grow, but is not part of her daily remedy repertoire.

Brahmi's commonplace appearance belies an extraordinary status in not only ayurvedic but in other Indian classical systems of medicine and in local oral traditions. Like any other ayurvedic herb it has multifarious capabilities, but what makes it indelible in popular culture is its 'memory enhancing property', a feature that has made it highly amenable to modern commodification. However, its traditional use among the general populace in Kerala appears to be limited to child care and hair oil, both meant to promote intelligence.

5.3 Is the capsule the same as the juice?

A question on an online forum best describes the predicament of the clueless modern Indian who desires to follow tradition while living in far flung lands.

My grandmother told my mother to give *brahmi* to my baby as soon it is born. I googled and found that this plant is called Coastal Waterhyssop. Where can I get this plant/herb in USA? Is this plant available in India? If yes, I can ask my mother to bring when she comes. Let me know where my mother can buy in Chennai. My grandmother doesn't remember who gave this to my mother when she was born or to her brothers when they were born, but she remembers someone gave it to them for sure. Rant.. No one remembers having this *brahmi* given to anyone born after my mother's generation and I am the first grand daughter in the family way¹⁹⁵. Any help is highly appreciated.

Equally poignant is the reply that in a nutshell describes the dilemma of the modern Indian who is caught between traditional practices and unfamiliar commodities.

I think *brahmi* helps in memory power. i have seen it in ayurvedic shops here.. himalaya also has it, but in capsule form.. i don't know how u will give to a newborn child in capsule form ?

This is one of the most perplexing questions that plague the consumer who is caught in the crossroads between tradition and modernity; a perfectly straightforward question to which there is no straightforward answer. The manufacturer would no doubt argue that the tablet and the syrup are one and the same. Technically speaking, the capsule encloses the contents of a dehydrated extract of the juice. The consumer is a lay person for whom the juice and capsule can look so different that it is difficult to imagine they could be one and the same. It becomes even more problematic in the situation

¹⁹⁵ in the family way = pregnant, euphemistic usage in Indian English.

above, where a drop of fresh juice is fed to the baby, for which it is near to impossible to gauge the safety of the transformed product, and to solve the question of dosage. The traditional consumer is also justifiably bothered about the safety of the capsule material and the colors used. Problems also arise because of differences in manufacturing practices. It is common for industries outside Kerala to use hydro-alcoholic herbal extracts whereas manufacturers in Kerala by and large have been resistant even to the use of aqueous extracts (see Section 9.6 for further discussion). But the infamy of the former affects manufacturers from Kerala to some extent. For example, a respondent at AVS said that despite using traditional processes to make *brahmi* capsules, they encounter consumers who suspect it as being made with extracts.

In other parts of India, customers are acculturated to medicines and habits of consumption driven by the industry, which in turn were heavily influenced by biomedical forms (Nichter 1989, Banerjee 2002, Bode 2008). But in Kerala, up to recently, manufacturers have stuck to traditional forms except for a narrow range of proprietary medicines. It is only in the past decade that external pressures have come to bear on ayurvedic manufacturing in Kerala. While the transformation of the juice to capsule is in fact the least contentious, many other changes are less straightforward. A host of form changes have gone more or less unnoticed elsewhere in the country, but in the conservative ayurvedic climate of Kerala some of the recent form changes have been actively contested by both practitioners and consumers. On one extreme are traditionalists for whom no alteration is justifiable. On the other extreme are modernists who consider all technologically feasible alterations as not only justifiable, but also superior. A mid-position is taken by manufacturers in Kerala who do not claim the modern form to be equal to the original, but argue that this is the form most 'convenient' to the consumer today. But who gets to decide which is the 'right' form? This question takes us to one of the central concerns of anthropologists studying commodification, that is "who has the power to control the meaning of the commodity" (Radin and Sunder 2005: 16).

It is only after confrontation with the allopathic system in the last century that the form of ayurvedic medicine began to be influenced by extrinsic factors. With the industrialization of ayurvedic production, pharmacopeia began to be influenced by commercial logic. Urbanization and consequent

consumers' demand for convenience had also a parallel role to play. In the pre-industrial era, the choice of form was shaped by the pharmacological logic, physical properties of the material, technological constraints in processing, and shelf life considerations.

5.4 Classical forms

Of the 23 different forms of classical medicines, around ten are most commonly used in the ayurvedic pharmacopeia. At a broader level they can be classified as herbo-mineral (*rasa* preparations)¹⁹⁶ and herbal preparations. The pharmacopeia outside Kerala is predominantly focused on herbo-mineral preparations¹⁹⁷. Kerala pharmacopeia focuses on polyherbal formulations that vary in terms of complexity. *Swarasa* (juice)¹⁹⁸ and *Kalka* (paste) are the most simple and direct¹⁹⁹, but these can be made only when the fresh herb is available. The next in level of complexity are *kashayam/kwath* (decoction), *sheeta phanta* (cold infusion), and *ushna phanta* (hot infusion). these five together are known as *pancha kashaya kalpana*, i.e., 'the five decoctions'. (*Sarngadhar Samhita MK 1:1*, Murthy 1984: 51). However, technically, in classical Ayurveda, only the fifth is officially referred to as the "decoction." The next in terms of complexity are *choornams* (medicinal powders), *lehyams* (jam-like preparations, literally 'lickables') made with herbs in a jaggery base, *ghritams* (ghee-based preparations), *tailams* (oils) and *kuzhabmbus* (thick oil). The most complex of the polyherbal formulations include various types of pills (*vaticas*, *modakas*, *vartis*) and fermented preparations called *arishtams* and *asavams* (hereinafter referred to as ayurvedic wines).

Diehard votaries of modernity consider form as being technology-driven and hence, old forms can be replaced with new, and traditionally prescribed procedures with new labor and time saving technologies. In the Arogya 2009 industrial exposition in Thrissur, a North Indian manufacturer proudly

¹⁹⁶ *Bhasmas* and *manduras* (calcined mineral and metal preparations), collyriums (*anjanas*), distillates (*arka*), ointments, nasal drops, *guggulu* preparations, *Kupipakva Rasayana* (medicines prepared by sublimation), *Parpati* (scale preparation), *Pottali* (metals cooked as bolus) and *Pishti* (fine powder of purified gemstones). Mineral preparations form 51.9% of the non-Kerala pharmacopeia whereas it is just 3% of the Kerala pharmacopeia.

¹⁹⁷ Mineral preparations form 51.9% of the non-Kerala pharmacopeia whereas it is just 3% of the pharmacopeia in Kerala. Further, the categories of formulations show that while the manufacturers are comparable on three categories (Ayurvedic vines, powders and tablets), Kerala manufacturers place far higher emphasis than the non-Kerala manufacturers on four categories: decoctions, oils, medicated ghees and jams. (See Table of comparison, Appendix H).

¹⁹⁸ However, boiling a dry drug in eight parts of water and reducing it to a quarter is also considered *Swarasa*. There are also a few complicated ways of extracting juice by the method of roasting. Roasting is done in many ways, firing medicinal paste wrapped in a ball of mud, firing a bird stuffed with medicinal leaves, and so on.

¹⁹⁹ Other simple medicinal preparations include, *Mantha* (thin gruel) and *Panaka* (diluted juice), porridges and soups, none of which are found in the commodity form.

showcased his ‘modern products’ mainly capsules and pills made by micro-pulverizing raw material. According to him the classical forms were product of an era that was limited by technology. He said, “it is ‘traditional’ backward mindset to continue to stick to them. Our medicines are far superior because in the micro-powdered form they are the most bio-available”. But ironically, his was one of the eighty stalls in the industrial exposition of which 90% were manufacturers from Kerala, 95% of whose product profiles would be obsolete in his eyes. In fact, the stall right across his was that of Santigiri Vaidyasala, who had gone further ‘backwards’ by selling medicine in its crudest form by establishing a network of raw drug franchisees²⁰⁰. In Kerala, practitioners give primacy to classical ayurvedic forms that are governed by a pharmacological logic; modern scientific parameters can do only limited justice in explaining the rationale (for example, Kumar 2005, Vasudevan 2003).

What is the logic that informed the choice of different forms? Choice of a particular form is obviously shaped by constraints imposed by the physical characteristics of the material. For instance, the best thing to do with a fresh leaf would be to express the juice, boil in water or grind into paste; juice cannot be squeezed of dry raw material; it is easier to convert tough roots into decoctions rather than to grind them into



Color Coded classical medicines of AVS

paste or powder. Resins call for different processes.²⁰¹ Dr. P. S. Varier conjectures that a combination of perishability and palatability led to the evolution of different forms. “Originally people would have been taking *swarasa* (juice) of fresh herbs. Then when it became difficult to find, people started keeping dried herbs and roots, to make decoctions. That also marginally improved the taste by reducing the bitterness. But then they started asking for *Mempodi* (substance to enhance palatability),

²⁰⁰ This is despite the company being a large manufacturer of Ayurvedic and Siddha products. The marketing manager said they wanted to promote raw drugs because they would rather have people make medicines at home rather than consume decoctions with preservatives. The company run by a Hindu Ashram combines profit with service goals.

²⁰¹ There is an entire range of classical forms that are based on a resin called *Guggulu*.

like honey and sugar. That is how, other forms seems to have evolved” (Varier 1915: 66).

Need for preservation must have been a critical variable. While all the simple forms are perishable, complex forms (oils, *lehyams*, powders, pills and *ghritams*) have a longer shelf life, ranging between one to two years. Vines and *Bhasmas* (calcined mineral and metal preparations) not only have no expiry date, they are expected to improve in quality with age (Sarngadhara Samhita (SDS) PK 1:51-53, Murthy 1984). According to one interpretation, the North Indian pharmacopeia²⁰² leaned heavily towards the herbo-mineral form because of its non-perishability²⁰³. Among practitioners in Kerala, it is common to come across the perception that these preparations were powerful but complex to prepare, dangerous if not prepared properly or used in the right context and dosage. However, with increasing global interest in the heavy-metal free ‘herbal image’ of Ayurveda, such views are less commonly heard.

The nature of specialization and practice must also have played a role in the selection of form. The traditional pediatric practitioner in Kerala carried a palm sized wooden medicine pouch which contained several compartments, populated with pills so tiny that he used tweezers to handle them. For an itinerant practitioner, pills obviously were the most convenient to carry and to administer. Additionally, for a pediatrician, palatability and ease of administration were important criteria. Pills were also handy in emergencies. Some *Vishaharis* (poison-healers) were found to be carrying a large walking-stick look alike medicine chest full of micro-drawers for pills for emergency use (*see image on the right*). Annakutty, an ayurvedic veterinarian vaidyan, said she depended heavily on pills, it would be difficult to administer any other form of medicine to animals²⁰⁴.



**Poison-healer Vaidyan
with her emergency
medicine chest**

The ayurvedic classic Charaka Samhita defines *dravya* (any substance including the drug) as

²⁰² influenced by *Tantric* alchemic traditions from the 12th century, and by Persian *Unani* 14th century onwards.

²⁰³ “There are many possible reasons why minerals displaced plants in northern India, and to some extent in eastern and western India as well. Incinerated minerals make good medicines because, by and large, they get better with age and so there is no expiry date and no danger of waste. There is no need for yearly expeditions to collect and preserve herbs, since minerals can be handed down from generation to generation. Their taste is no more neutral and they are less cumbersome to administer. They are also more powerful than all but the most potent (or poisonous) of herbs, and so small doses produce large effects faster than most herbal products can” (Svoboda 1992:263).

²⁰⁴ Pills for animals are given hidden inside food, for example inside bananas for cows and elephants.

“that were actions and properties are located and which is the material cause (of its effect) (*Charaka Samhita Su 1: 51*, Sharma 2000).” A herb would qualify as a drug if it meets all the four criteria: of abundance (*bahuta*) so that it remains affordable, efficacy without side effects (*yogyatva*), transformability into various types of pharmaceutical preparations (*anekavidha kalpana*) so that it can be tailored to the ‘need’ and ‘convenience’ of the patient and finally, the potency to produce desired pharmacological action (*sampad*). Some other qualities expected of drugs are: they should be broad-spectrum (*bahudhoshaharam*), easily digestible (*laghupakam*), mood-alleviating (*sukhasvadanam*), not produce depression (*natiglanikara*), should have pleasant smell, color, and taste (*gandhavarnarasopetam*), must not have any adverse effect (*avikari*) (Ojha et al 2004).

Interestingly, convenience, one of the top reasons quoted by manufacturers in designing medicines today seems to have been an important criteria two millennia ago, though there is evidently a vast difference in the threshold of convenience. “Need” includes the constitution (*prakriti*) of the individual, the type of disease, the strength and stage of disease, and many other factors that are part of the diagnostic framework. Digestibility is an important criteria. The classic on pharmacology mentions the order of difficulty in digestion for the five decoctions, in ascending order as, hot infusion, cold infusion, decoction, paste and fresh juice (*Sarngadhar Samhita MK 1: 1*, Murthy 1984). According to a doctor informant from Maharashtra, the choice of fermented vines over other forms were mainly due to digestibility; decoctions were hard to digest, so she would recommend them only to patients with good digestive power.

As important as the drugs are the *yogavahi* (carrier or vehicle of the drug) and *anupana* (adjuvant). Adjuvants act as a catalyst to facilitate the action of the drug. They may enhance digestibility or bio-availability or mediate the action of the active ingredients in any other way. Drugs are also classified into three groups based on the effect they have on each of the three *dosas*, as having stimulatory effect (*prakopaka*), depressing effect (*samaka*) and replacement (*dhatuposhaka*). An important cornerstone of ayurvedic treatment is the attention given to fattening (*brhmana*) or slimming (*langhana*) the body as per the requirement of the person and disease. Medicated ghee and oils are especially used in the former case and avoided in the latter case. Different routes of drug

administration, (mouth, nose, eye, ear, anus, urethra, vagina and skin) were another criteria for the selection of a particular type of formulation.

Dr. Sheela Karalam, the Head of R&D of Oushadhi, the Kerala State ayurvedic company pointed out that each form had its own pharmacological implication, and that the physician's logic had to be applied in choosing a particular form of medicine. She provided a few examples. Decoction being not easily digestible, is not a preferred medication at the first stage of fever, whereas *panakam* (light juice), tablets or powders are preferred. When fever subsides, medicated ghee (like *Indukantaghritam*) or medicated jam is given to protect the patient from the damage caused by fever. Topical application of medicated oil is commonly preferred for external injuries and wounds, but it is not advisable in the case of suppuration; decoction is the most preferred form. Fermented preparations are given commonly in the case of respiratory and digestive complaints, though they are also used in many other general conditions as well. A fermented preparation called *Chandanasava* is the most commonly used medicine for UTI. Much importance is given in ayurvedic treatment protocols to stimulating appetite and digestion. *Arishtam* (ayurvedic wine) is known to be producing *Deepana*, that is stimulating digestion at tissue and cellular levels. *Ghritam* (ghee) which is based in animal fat in comparison to oil which is vegetable fat also is used for the same purpose. She also added that "the advantage of ghee is that it does not react with anything that it comes into contact, without losing its identity, compared to honey that reacts with other substances".

One major topic for debate is the use of various kinds of fats as solvents, mainly oils and ghees. Classical texts also recommend the use of various animal fats like tallow and fat from marrow, though their use is limited. This is a controversial point in Kerala because of the preponderance of the use of fats in the pharmacopeia, both for internal and external uses. It is common for ayurvedic practitioners to be confronted with questions on the rationality of the use of fats. An editorial in an ayurvedic journal (Agnivesh 2005) brings up this issue as one of the most troubling to Kerala ayurvedic practitioners. Though this issue has become more strident with the predominance of 'lipid' hypothesis, it has been around for long as evident by the narrative of Dr. Verghese Pattarumadom, an Ayurvedic doctor based in suburban Ernakulam. He narrates a hilarious incident that occurred when he was a

student in Trivandrum Ayurvedic College in the late 50s.

An allopathic doctor had written an article in a popular forum alleging that application of oils is nothing but superstitious and that it demonstrates how unscientific Ayurveda was. This naturally infuriated the ayurvedic community. An ayurvedic professor in his college known for his eccentric behavior, decided to take the writer to task. He invited him for a one to one debate on the issue, with the hidden agenda of subjecting him to an experiment. He arranged his students to be accomplices. As soon as the doctor-writer got on to the stage, he had his students tie him to a chair. He then proceeded to apply on his head, an ayurvedic oil known for its extreme heating properties. Within a minute, his eyes began to turn red. In a few minutes, he began to sweat all over and was in a bad predicament. On the condition that he retract his statement, the professor allowed the students to apply on his head the counter-remedy, the cooling *Ksheerabala* oil, which got him back to normalcy. The doctor ended up publishing a retraction and a written apology.

In cases where a 'form' would significantly influence the 'content', a modification that does not take this into account would certainly be problematic. Though certain forms and processes could be technology-driven and can be argued to be replaceable, often forms might also be based on the foundation of the complex logic of ayurvedic pharmacology. According to modern pharmacology, plant chemicals can be either fat soluble, water soluble or soluble in alcohol. This would mean that different preparations lead to the extraction of different set of metabolites. Of the classical forms, juices, decoctions and infusions are water extracts of medicinal compounds; oils, ghee-based preparations and confectionaries function as fat-extracts; and, the self-fermented wines work as alcohol-extracts. The last two might also be based on water-extracted medicinal material. An understanding of the difference in medicinal qualities between these preparations must have influenced the design of various formulations. A telling example of the significance of processing comes from the story of the discovery of the malarial drug *Artemisinin*²⁰⁵. Reference to a Chinese classical text led the researchers to try the use of a low heat infusion specified in the text, instead of the aqueous extract they were using. The resultant solution showed very high anti-malarial activity that finally led them to the most potent anti-malarial drug in the world today (Tu 2011). There are some research studies who attempt to understand the rationale of classical formulations by modern pharmacological parameters. For example, a study showed that the ayurvedic preference for milk decoction of raw drug *pippali* (Piper chaba) to the water decoction was ratified by researchers who showed that the former was 27 times more pharmacologically active (Sudha and Venkat 2004). Dr. A. Sindhu, General Manager, R&D and

²⁰⁵ A national project against malaria was set up in China in 1967. In the first stage, 2000 herbs were screened that resulted in 640 hits. More than 380 extracts obtained from over 200 herbs were subjected to animal testing. Of these, *Artemisinin* showed pharmacological promise, but was weak and inconsistent.

Technical Department of Arya Vaidya Pharmacy, said they engaged a biotechnologist from a University in Kerala to study *Bilwadi Guliga*, a pill that had to be wet ground for 30 days as per classical procedure. They were astounded by the findings that showed that the ground paste started to show remarkable pharmacological activity on the 29th day of processing (Thankamani et al 2005). For this reason, she said, they prefer to stick to classical procedures, however ridiculously pointless or laborious they might seem.

5.5 Ayurvedic Pharmacology: A brief introduction²⁰⁶

The material philosophy of Ayurveda, including physiology or pharmacology are based on the evolutionary scheme of *Samkhya* (School of enumeration) (See Section 1.2.3). According to this scheme, the body which is the microcosm is a subset of the macrocosm, that is composed of five basic elements (earth, fire, water, air, and ether), and characterized by three qualities (inertia, equilibrium and activity). These are manifested as three *doshas*, loosely translated as humors (*Vata*, *Pitta*, *Kapha*), the proportion of which along with the qualities produce the *prakriti* or individual constitution. Illness is understood as the perturbation in these *doshas*. The physician is expected to use the three means of valid knowledge (See Section 4.1) in assessing the pathology in terms of these elements and to compose the right medicinal combination to correct the imbalance, based on the principles of *Samanya* (similarity) and *Vishesha* (dissimilarity).²⁰⁷ For example, a substance having *Vata* characteristics will increase *Vata* and decrease *Kapha*. As the material in nature is constituted of the same elements, logically, by the principles of similarity and contraries, substances can be used to manipulate the condition back to the desirable state. To address the bodily imbalance with the right combination of substances, the vaidyan follows a complex logic based in the theory of ayurvedic pharmacology laid down in the classics.

The classificatory system of ayurvedic pharmacology is based on a synthesis of the two schools of *Vaisheshika* (atomism)²⁰⁸ and *Nyaya* (logic), according to which the world is made of “six objects of experience” (See Appendix D). Ayurvedic pharmacology classifies medicines by taste (*Rasa*), quality

²⁰⁶ Based on Kutumbiah 1962, Svoboda 1992, Wujastyk1998

²⁰⁷ Substances having similar constituents/characteristics increase each other and those having dissimilar constituents/characteristics decrease each other.

²⁰⁸ postulates that all objects in the physical universe are reducible to a finite number of atoms (*Anus* and *Paramanus*).

(*Gunas*), potency (*Veerya*), post-digestive taste (*Vipaka*), pharmacological action (*Karma*) and special effect (*Prabhava*) (*Sarngadhara Samhita PK 1: 22-23*, Murthy 1984:12).

- **Rasa (Taste)**, recognized by the tongue, is categorized into six types, sweet (*madhura*), pungent (*katu*), sour (*amla*), saline (*lavana*), bitter (*tikta*), and astringent (*kashaya*) each attributed an elemental composition and a corresponding effect on the doshas.
- **Gunas(Quality)** are 41 in number and are classified into four. 1. *Vishista* consisting of sense-objects (sound, touch, color, taste and smell) 2. psychological (intellect, desire, aversion, pleasure, pain, volition). 3. *Guruvadya Gunas* (physico-pharmacological) including ten pairs of physical attributes, heavy-light, hot-cold, dull-sharp, unctuous-dry, and so on. 4. *Paradya Gunas* (Para-pharmacological) are abstract qualities, for example, primacy Vs unimportance, magnitude, and so on (See Appendix D.1 for complete list).
- **Virya (Potency)**: is classified into four pairs: hot-cold, unctuous-dry, heavy-light, and dull-sharp.
- **Vipaka (Post-digestive taste)**: The transformed state of the taste after digestion is called *Vipaka*. six tastes are reduced to only three post-digestive tastes, sweet (*Madhura*), pungent (*Katu*) and sour (*Amla*).
- **Karma (Action)** refers to pharmacological action of a drug. The materia medica is divided into classes of drugs (*Ganas*) based on their Karma, 50 in Charaka Samhita (See Appendix D.3), and 36 in Sushruta Samhita. There are two additional classes, *rasayana* (rejuvenative) and *vajikarana* (aphrodisiacs).
- **Prabhava (Special effect)**: Action of a substance that is not explainable by the understanding of its constituents and qualities is called *Prabhava*. Two substances with similar properties may have different *Prabhavas* for reasons that cannot be explained.

Some drugs act by the total effect of all these properties, some by one of the properties.

Another concept considered in combining drugs is that of *Virodha* i.e., incompatibility. Drugs can be incompatible with each other in various ways, such as quality, taste, potency, post-digestive quality or action. They could also be incompatible with various other variables such as diet, place, time, digestion, dose, and so on. Given this factor, diet regimen (*pathya*), forms an inseparable component of traditional ayurvedic treatment. In fact, Ayurveda considered food as *Mahabhaishajyam*, that is, the “supreme medicine” (Thirumulpad 2007). A related concept is that of *Anupana* a substance given along with the drug with various intentions. It is used as a simple vehicle or carrier of medicine or to improve palatability or to aid the action of the drug by improving absorption and digestibility or to ameliorate the drug’s side effects. Honey and milk are among the most commonly used adjuvants. In Kerala pharmacopeia the Malayalam term *Mempodi* is often used to mean *Anupana*. But there is a difference of opinion in meaning, as *Mempodi* is a powder of one or more drugs that are used as adjuvants that some scholars feel is equivalent to another classical concept, *Prakshepa*. This is an example for the evolution of regional nuances in practice that are likely to be perceived as unwanted variations in the

path of homogenization.

The choice of medicine and the form would be based on various criteria, including the assessment of the nature of perturbation in the three humors, the constitution and temperament of the individual, the nature, strength and stage of disease, the constellation of symptoms, environment, season, digestive strength, age, and so on.

Pharmacology of *brahmi* (*Bacopa monnieri*) according to API P.1. Vol. 2 (2008: 37)

<i>Rasa/Taste</i>	<i>Madhura, Tikta, Kashaya</i>	<i>Sweet, bitter, astringent</i>
<i>Guna/Quality</i>	<i>Laghu, Sara</i>	<i>Light, fluidity</i>
<i>Virya/Potency</i>	<i>Sheeta</i>	<i>Cold</i>
<i>Vipaka/Post-digestive effect</i>	<i>Madhura</i>	<i>Sweet</i>
<i>Karma/Action</i>	<i>Kaphahara, Medhya, Rasayana, Svarya, Vatahara, Vishahara, Ayushya, Matiprada, Prajasthapana, Mohahara</i>	<i>Kapha alleviating, intellect promoting, rejuvenative, beneficial to the voice, vitiated Vata alleviating, poison neutralizing, intelligence enhancing, fertility promoting, passion destroying.</i>

Brahmi is beneficial for *Kushta, Jvara, Sopha, Pandu, Prameha*, and *Manasavikara*, which can be loosely translated as tuberculosis, fever, edema, leucoderma, diabetes, and mental abnormality (API 2008). It is used in ten classical medicines²⁰⁹ (out of 635 listed formulations in API 2008). Despite the numerous virtues of the herb, only around seven use *brahmi* as the primary ingredient. In Kerala, *brahmi* gets into a few more classical medicines besides those listed in the API²¹⁰. It meets Charaka's criteria of being amenable to multiple forms; it is found in various forms including powder, pills, fermented preparations, medicated ghee preparations and herbo-mineral preparations. Of these, the most illustrious is *Sarasvatarishtam*, a brain tonic used to correct speech and enhance intelligence in children. The common uses, other than mentioned earlier, include treatment of speech disorders, amelioration of anxiety, degenerative neural diseases, post-stroke rehabilitation, and as a secondary drug to treat a variety of problems ranging from skin diseases to digestive disturbances. Ayurvedic diagnostics gives much importance to the role of stress in disease etiology. *Brahmi* is one of the common herbs that enter poly-herbal combinations as an anxiety-alleviator.

²⁰⁹ *Sarasvatarishta, Panchanimba Churna, Brahmi Vati, Sarasvata Churna, Ratnagiri Rasa, Krimi Kuthaara Rasa, Balarka Rasa, Smrtisaagararasa, Brahmi Grita, Brihat Arbhacintamanirasa.*

²¹⁰ Common medicines are *Sapthachadarishtam, sarasvatarishtam, Brahma rasayanam, Brahmi doorvadi kera tailam, Chandanadi enna, Padoladi and thikthakam ghrutams, manasamitra vadakam, Mahamanjishtadi, padolamooladi, and thikthakam kashayams.*

Though its classical use appears to be relatively low, straightforward and non-glamorous, the commodity life of *brahmi* reveals a far more dynamic story, a story that also takes us through the confusions and controversies commonly encountered in the new era of commodification (See Section 9.4-9.6). A focus on commodity lives of herbs like *brahmi* can be misleading because most herbs used by the ayurvedic industry are low-profile invisible ingredients in complex polyherbal formulations; very few have a distinct identity and social life outside them. Index herb *kurunthoti* is hence more representative of the trajectory of commodification of a typical ayurvedic herb.

5.6 *Kurunthoti*: the star of decoctions

Kurunthoti (the ayurvedic drug *bala* in Sanskrit) has a far less conspicuous presence in the commodity scene, which might seem surprising given its place in the ayurvedic pharmacopeia; not only is it used three times more often than *brahmi* in classical formulations²¹¹, it is used for a range of ailments. In fact, it is more representative of a typical ayurvedic herb than *brahmi* is. In ayurvedic pharmacology, however potent a particular medicine, its utility lies in its ability to play a supporting role in a polyherbal formulation. The multiple properties of *kurunthoti* makes it an ideal candidate. Unlike *brahmi* which is a celebrity all over India, *kurunthoti* in Kerala is like a next door neighbor who is always part of one's daily life. It is this ubiquity that has earned its place in three commonly used proverbs, one of which helps in illuminating its centrality in the Kerala ayurvedic pharmacopeia. *Kurunthotikku Vatham Vannal* (what will happen if *kurunthoti* itself gets afflicted with *Vata*?)²¹² Though *kurunthoti* has multiple pharmacological properties, it is most known for its *Vata* mitigating properties (See Appendix F for its pharmacological attributes). Typical *Vata* disturbances include rheumatism, joint pains, muscles spasms, sciatica, Parkinson's disease, motor-neuron disorders and so on. *Kurunthoti* is an



Kurunthoti

²¹¹ Based on analysis of formulations listed in Ayurvedic Formulary of India (AFI 2008).

²¹² Though *Vata* is a humor, contextually it is used in a sense to indicate perturbation, just as the term *Dosa* is used both as humor and a perturbed state. This is perhaps comparable to the popular usage of terms 'sugar' and 'cholesterol', to refer to diabetes mellitus and hyperlipidemia respectively.

indispensable ingredient in anti-arthritic medicines, both classical and proprietary. Its role becomes critical as arthritis accounts for almost two-thirds of patients in ayurvedic hospitals.²¹³ It is an important ingredient in pain oils and massage oils used in therapeutic procedures. Commodification of Kerala therapy procedures in both tourist Panchakarma centers and domestic wellness centers, must have significantly increased demand for this herb²¹⁴. It is also an important rejuvenative, as its Sanskrit name *bala* indicates. It is considered to be especially effective for promoting muscle tissue, boosting strength, vigor and vitality. This makes it a popular ingredient in tonics and aphrodisiacs. *Sida* species have been subject to extensive pharmacological investigation. The most important alkaloids are found to be ephedrine, hypaphorine, vasicinone, vasicine and vasicinol (Ghosal et al. 1975). Because of its ephedrine content, it has been one of the plants banned by the FDA (Rados 2004). *Bala* being one of the most common ingredient in ayurvedic formulations, the ban poses a problem for manufacturers who seek to export products to the West.

Kurunthoti is one of those plants that meets all the four of the classical criteria discussed above (See section 5.4) to be selected as a drug. It is not only among the most potent, it is usable for multiple conditions and adaptable to multiple forms. Roots of the plant along with 4 finger-lengths (angulas) of the stem is the expected part to be used, though almost double the length is in use now. Indian pharmacopeia lists 53 classical preparations of which *bala* is an ingredient, 12 of which it is the primary ingredient (AFI 2008). There is no form which it doesn't manifest²¹⁵. In Kerala pharmacopeia, it is used in around 73 formulations. It is a prime ingredient in *Dhanwantaram Kuzhambu* and *Bala tailam* that are among the most commonly used in wellness treatments. *Kurunthoti* is also a principle ingredient in medicinal herb infusions used for therapeutic procedures like *Njavara kizhi*.

As for the criteria of abundance, there is hardly any other medicinal plant that can compete

²¹³Arthritis is primarily a geriatric disease. Due to lower mortality and fertility, Kerala has undergone a rapid demographic transition resulting in a larger epidemiological transition due to increased proportion of the aged to the population (Soman et al 2011). The predominance of life style diseases (Joseph et al, 2000; Soman et al 2011) might have also been caused by the transition from farming to service. Sector-wise contribution to GDP of agriculture, industry and services are India (52%), (14%), (34%) (2003) and Kerala 14.5%, 24.6%, 60.9% respectively.

²¹⁴ Commodification of 'brand Kerala' in rest of India also has led to demand for Kerala commodities mainly medicinal oils and to a certain extent decoctions. Though classical, these were made only by manufacturers in Kerala. But in a polyherbal system it is difficult to identify individual growth trajectories, which not only requires historical quantitative data on herb demand in relation to other herbs, but also an analysis of demands for various medicinal formulations. In the case of *Kurunthoti*, the increasing internal demand for arthritic application can be a confounding factor.

²¹⁵ Of these 4 are fermented preparations, 2 are jam preparations, 9 are powders, 4 ghee preparations, 2 types of pills, 4 types of Rasas, one *eranda paka* and the maximum use of it is part of medicated oils, 27 are oil preparations.

with *kurunthoti*. There is no wasteland in Kerala, wet or dry, coastal plains or elevated hill ranges where the plant cannot be found. It is especially luxuriant in disturbed habitats, like roadsides. Even now, despite intensive cash crop cultivation, it grows luxuriously in homegardens, unless meticulously weeded out. *Kurunthoti* is also interesting because of its widespread use, both popular and classical. Its independent identity at the household and the raw drug shop continues to co-exist with its identity as part of finished medicine. It has a vibrant social life as it passes through all the commodity chains, the forest, the commons and homegardens, providing insight into the dynamics of supply chain at various levels (See Sections 7.2.4, 7.5.1).

5.7 Centrality of the Decoction in the Kerala Pharmacopeia

The ayurvedic pharmacopeia of Kerala stands apart from the rest of India, in the importance given to two forms of medicine, the oil (*tailam*) and the decoction (*kashayam*). *Kurunthoti* figures prominently among herbs that are most commonly used in both these forms. In fact, it is so often used in both homemade and classical decoctions that it has become synonymous with the very identity of the decoction form. A popular Malayalam proverb says, *kurunthoti illatha kashayamundo?* (Is there a decoction without *kurunthoti*?). *Kurunthoti* decoction is considered a common home remedy for arthritis. When Sumathi, a bank employee in her mid-40s, developed a knee pain a year ago, she was not surprised because *Vata* problem was prevalent among her family members. She would consult the ayurvedic doctor if it were to aggravate²¹⁶, but at this stage her treatment is limited to the episodic use of *kurunthoti* decoction and a topical application of an ayurvedic pain oil. In her homestead in rural Ernakulam, *kurunthoti* grows like a weed, she needs to do nothing but save a few plants from weeding.

Kurunthoti is particularly important in the care of expecting mothers as indicated by another Malayalam proverb, *Ayiram kurunthoti parichal 'avoo'nnu parayumpozhekkum peru (prasavam) kazhiyum*. This literally means, “if you pluck 1000 *kurunthotis*, the delivery will be over just in the time you take to say “*avoo!*” (an exclamatory sigh)”, implying that the delivery will be effortless. It

²¹⁶ In Kerala, *Arthritis* is one of those problems that are typically considered the domain of Ayurveda. For example, patient profile of AVP's hospital for 2007 of 120 beds shows 45% are rheumatology patients.

should be noted that the proverb says ‘pluck’ not ‘consume’. It obviously implies consumption, but the effort that goes into plucking is part of the prescribed regime. Disguising life style recommendations as medicine is not uncommon in ayurvedic practice²¹⁷. *Kurunthoti* is consumed by pregnant women, as a decoction or as rice porridge cooked in the decoction. There are regional differences in the time and mode of consumption. Sumati says that in her hometown in rural Thrissur, the practice is to consume a decoction of a different leaf each of the nine months, one of which is *kurunthoti*. In some regions in Kerala, expecting mothers are required to consume *kurunthoti* decoction from the seventh month onwards. Sahasrayogam, the bible of Kerala Ayurveda, recommends seven decoctions for pregnant women, one of which is *kurunthoti kashayam*. The text also recommends a decoction with *kurunthoti* as one of the two prime ingredients for complaints of post-delivery fever.

The typical home made decoction involves boiling a handful of *kurunthoti* root in water and letting it simmer overnight. The classical decoction on the other hand, is more elaborate, and requires close attention. A regular decoction is made of one part of coarsely powdered drugs added to 16 parts of water, boiled and reduced to one-eighth of the original proportion²¹⁸. The pot is not be covered with a lid; the rationale being that if covered the decoction will not be easily digestible (*Sarngadhara Samhita MK 2:7*, Murthy 1984:57). The idea is to allow the volatile material to evaporate. In other words, decoction is nothing but water extraction of active ingredients from medicinal raw material²¹⁹.

Kashayam also happens to be the term used for one of the six *tastes (Rasa)*, “astringency”, perhaps derived from the typical taste of an ayurvedic herbal decoction. It is this connection that has given birth to a common usage, “your face looks like you have just drunk *kashayam*” used to describe an expression of disgust. Another popular usage of the term *kashayam* is in the verb form, “*Kashayich*,” to mean, “putting a lot of effort.” Preparing decoctions at home, though simple, is a task that takes up

²¹⁷ A traditional vaidyan narrated this incident. He had prescribed a patient with a treatment that required him to consume juice of a herb to be freshly plucked from the forest every day. The hidden agenda was to make him walk a long distance every day, as being sedentary was one the root cause of his illness. The vaidyan said, “There was no guarantee he would have done it if I had told him to walk. People want medicines as short-cuts, modifying life style or diet is too much of work you know. The same is true with food prescriptions. If you get an emaciated patient for whom you realize require a bit of fattening up, and if you recommend to take more milk or ghee they will not do it. They expect the medicines to do all the work. The medicines are important, but in such cases they won’t work without some additional nutritional input. Prescribing a ghee-based medicine is a better way of getting some fat into them.”

²¹⁸ While water based decoctions are the most common, there are also other types like *Ksheerapaka* (decoction in milk) and *Tandulajala* (decoction in rice washings).

²¹⁹ *Arishtam* (a fermented form of Ayurvedic medicine) is also used in the same sense in the verb form *Arishtich*. These terms are an indicator to the ubiquity of Ayurvedic medicine making in popular culture.

time and labor. It is customary to cook decoctions on a firewood stove. Janakiamma talking to her daughter-in-law about her current medicine routine fondly recollects the decoction making process, “Once it is boiled, the decoction has to be left to simmer on the heat of the cinders over night, and then in the morning you can just boil it once and consume. But these days with gas you can’t do that!” This is however not a problem in most ‘modern’ Kerala households, where the gas stove and the fireplace continue to co-exist. In other parts of India, with the switch from firewood to gas, the kitchens in modern middle-class houses underwent a irreversible transformation. The messy traditional fireplace disappeared, and along with it, the suit-layered walls and roof. Vessels switched from clay and aluminum to swanky steel, housewives no more had to struggle scrubbing soot-layered vessels. But in Kerala, kitchens in modern middle-class houses usually have two parts, a swanky part meant for gas stove cooking and a less sophisticated anteroom providing for the fireplace and space to store firewood. The material used for walls, tiling and countertops tend to be likewise different, the traditional kitchen sporting more rugged and less showy material like for example, clay tiles for flooring. Perhaps one more symbolic representation of the Malayalee’s faithfulness to tradition.

“Keraleeya Chikitsa Kashaya Pradhanam” (“Kerala treatment is decoction centric”) is an often repeated saying among Kerala Ayurveda practitioners. Of the 1000 formulations in Sahasrayogam, the master recipe book of Kerala Ayurveda, 400 are decoctions. The pharmacopeia of Kerala is heavily dependent on Sahasrayogam.²²⁰ Manufacturers in Kerala make around 50-70 decoctions (17% of pharmacopeia) whereas the large and medium North Indian manufacturers make less than 4 (1.5% of pharmacopeia). (See Appendix E.1). Kerala pharmacopeia is also unique in its emphasis on medicinal oils.



Decoction making demonstration by Production Manager, AVP, Ayurvedic Pharmaceutical workshop, Coimbatore, 2008

²²⁰ Estimated proportion of dependence being anywhere from 40-70%. Analysis of product portfolio of one large pharmaceutical company showed 40% were based on Sahasrayogam.

There could be regional variations in pharmacopeia on which there is no data available, but there is no report of decoction predominance in the ayurvedic pharmacopeia elsewhere in India. The closest suspect is the region adjacent to Kerala in Karnataka State. As mentioned earlier, the Secretary of the State's Manufacturing association considered this region to be an extension of Kerala with regard to Ayurvedic culture. Analysis of secondary data available from a survey (Shivprasad and Chandrashekhara 2003),²²¹ shows that the region's pharmacopeia is in between Kerala and North Indian. It has a low proportion of decoctions like the North Indian pharmacopeia, but is more similar to Kerala in the importance given to medicated oils, jams and powders. It is also unique in that it has no medicinal ghees and has an over-emphasis on medicated wines that account for nearly 50% of the pharmacopeia.

An exchange on an internet forum between a North Indian patient and a doctor from Kerala²²² shows the enormity of the difference between the pharmacopeia.

North Indian Patient

Jan 19, 2011

Hello Doctor,

I visited a Kottakkal physician for my joint pains and a few other complaints recently. To my surprise, they have never heard of common ayurvedic preparations like Mahasudarshan and Kamadudha Rus which have been used in our household since my mother is an ayurvedic consultant with the Government. Not only are these readily available by Dabur and Zandu, these are widely used in Ayurveda as classical preparations. I could not make any sense of medicines available at the AVS as most of them do not have any reference/common name in Ayurveda. *Could you please explain if Kottakkal AVS is a different branch of Ayurveda as it certainly does not seem to have much in common with the Ayurveda practiced worldwide.*

Doctor from Kerala

Jan 20, 2011

Hello, I have heard about these medicines but not used yet because there are a lot of medicines which have the same action of medicine specified...I think most of the ayurvedic doctors of Kerala or south India are not using this type of medicines because Rasa preparation if not purified clearly is very dangerous²²³... the main reason why these medicines are not used widely... other thing to tell you is that all ayurvedic medicines are not available in all pharmacies because there are thousands of medicinal preparation in Ayurveda...it's impossible to manufacture all..only those...needed...are manufactured...thank you.

The patient is so confused on encountering an alien pharmacopeia that he arrives at a

²²¹ Sample of manufacturers includes 17 industrial and 21 household manufacturers of erstwhile Dakshina Kannad district (including Udupi district)

²²² <http://ayurvedictreatmentmethod.blogspot.in/2010/06/kottakkal-ayurveda-medicine.html>

²²³ Among practitioners in Kerala, it is common to come across the perception that these preparations were powerful but complex to prepare, dangerous if not prepared properly or used in the right context and dosage. In a meeting of traditional practitioners in Kerala, a vaidyan was advocating the use of a particular Siddha medicine, a herbo-mineral preparation as effective for a particular ailment. Speaking of it, he said, "I make all my medicines, but I wouldn't dare to make *Neet Marunnu* (Malayalam term for mineral-based medicines). The process is very complicated and you need expertise and experience in making them. The materials used are poisonous and therefore cannot afford to make mistakes. You have to be also careful about the source from which you buy."

conjecture that AVS Kottakkal must be a different branch of Ayurveda.

That Kerala traditional practice is principally based on prescription, depending on people to make medicines at home. Traditional practitioners' narratives in Kerala reveal that depending on a service model primarily based on consultation is a practice neither uncommon nor recent²²⁴. This is also noted by many local practitioner-scholars (for example, Namboodiri 2000, Thirumulpad 2002). An extensive interview of Ashtavaidyan practitioner provides a clear picture of historical practice.

There were no dispensing pharmacies (*vaidyashala*) in former times. Therefore, all patients had to prepare their medicines like decoctions at their homes. We (Ayurvedic doctors) just had to prescribe the medicines with appropriate methods of preparation for each patient. Ayurvedic doctors had only a few prepared medicines at hand, like a few tablets and so forth [in former times]. All the other medical preparations, such as decoction (*kashayam*), medicated paste (*lehyam*), medicated ghee (*ghritam*), and oils were prepared by patients themselves. Their methods of preparation were also given along with the prescriptions (Yamashita and Ram Manohar 2007: 125)

Thirumulpad (2002) points out that ayurvedic medicine in Kerala was focused on simple forms that people were expected to make at home using local resources, which made it less expensive. Even among herbal medicine forms, Kerala practitioners did not use much fermented medicine preparations unlike in the North. This was contrary to the classical textual expectation that patient to be wealthy enough to afford ayurvedic treatment. *Abdulla*, a traditional pediatrician from rural Thrissur said, neither his father nor he ever made medicines (See profile in Section 3.6.2). He was getting paid a consultation fee of ₹ 20-50 (\$0.4-1) per patient that was more than sufficient for his livelihood. Medicine-making he felt was an unnecessary bother, a drudgery not justified by the returns. Back in the 1960s, the average consultation fee was a rupee. But unlike the allopathic practitioner they never 'asked' for a fee, it was left to patients' discretion; they could pay more or less depending on their affordability. People would also pay in kind, usually with farm produce. Consultation fees was considered adequate enough for vaidyans to their livelihood, but not to accumulate wealth. This changed gradually with the transition from the vaidyan to the doctor status, reports a doctor from a vaidyan family. He earned a pre-BAMS degree in the late 50s and his value began to soar when he changed from the local *mundu* to western pants; people began to pay double the consultancy money.

The emphasis on simple medicines in classical medical practice in Kerala, therefore, is integral

²²⁴ Until late 19th century, be it in Britain or India, it was uncommon for physicians to earn their livelihood from consultation fee (Kapil 1988).

to the wide prevalence of household processing of medicine in Kerala²²⁵. The simple inconspicuous decoction seems to have played a significant role in connecting people to medicines and medicinal ingredients. The simpler of the decoctions, especially home remedies, are based on locally found herbs that are familiar and available to people. Classical formulations on the other hand, also include ingredients that are non-local or non-seasonal for which people have to resort to the raw drug shop. Such widespread use of raw drugs must have led to the evolution of the raw drug shop as a key node in the traditional consumption of medicines. Though the use of decoctions appears to be uncommon in the classical pharmacopeia in rest of India²²⁶, it seems to be common in the medical systems in other parts of Asia, China (Zhan 2009), in Vietnam (Craig 2002), in Thailand and Indonesia (Esterik 1988).

5.8 The curious case of *kurunthoti* decoction and two confused, young, expecting women

In a pluralistic system, patients are often caught between the egos, ideologies and professional jealousies of doctors of different systems. The struggle is especially intense between allopathy and ayurveda; allopathic doctors given their historic status of privilege often have an upper hand in passing on their judgments and prejudices to their patients. Patients are constantly caught in this conflict. Some submit to the doctors' authority and follow their advice in rejecting home remedies or other systems of medicine, whereas some choose to keep the doctors in the dark about their non-allopathic practices²²⁷. *Kurunthoti's* biography reveals one such story of two young expecting mothers caught between two medical systems. Both modern young professionals who live outside Kerala have landed at their mother's homes in Kerala a few months before delivery, they are exchanging notes on an online forum²²⁸. *Kurunthoti decoction* dominates the discussion.

Comment by an expectant mother from a consumer's forum

So far I have not taken any ayurvedic medicines. But yes, people have been suggesting a lot. We have a good ayurvedic doctor who suggested some good tablets (for *Garbha Raksha*) which we can take since 7th month. But when we checked with my Gynaec, she asked me not to take it since she doesn't know how it will interact with the other prenatal Vitamins I take. But according to ayurvedic doctor, it doesn't affect the allopathy medicines. However I did not take it, since I

²²⁵ As mentioned earlier, North Indian pharmacopeia is dominated by complicated forms, especially herbo-mineral preparations that could be made only by experts. In Kerala, simpler forms like juice of the herb and decoctions are processed by the consumers themselves, complex forms like vines and pills are invariably made by practitioners. (Said earlier?)

²²⁶ It is however not clear whether there is a use of decoctions at popular level. The absence of evidence can be taken to mean absence of practice, but it might also mean lack of researcher attention to popular medicine.

²²⁷ A common behavioral pattern of non-disclosure of CAM use to their biomedical practitioners (Robinson and McGrail 2004).

²²⁸ www.industladies.com/forums/pregnancy

wanted to listen to my Gynaec since she is the main doctor for my delivery...However I may start doing the following two things from 8th month onwards. One is *Kurunthoti kashayam*. i.e. Boil water using a medicinal herb and drink it. Second is External application of ayurvedic *thailam* (oil) like *Dhanwantaram tailams* for relief of body pain. These two are of no side effects at all.

Regarding post-natal care, yes my mother arranged one lady who will take care of me and the baby during the initial months. This lady is experienced in post-natal care. My mom asked her to come by August 1st itself though my due-date is only on 24th...These days it is really really difficult to get these people and they ask a lot of money. My mother started searching for this lady from the time she came to know I'm pregnant, ha ha. Many other families were also looking for same lady for august but since we booked in advance and agreed to pay more, we finally got this lady. last time for my sister's delivery we tried for the same lady, but she was booked by someone else. These people demand a lot and needs VIP treatment. for e.g. she needs a car to pick her up from her home everytime !!! ha ha ...

Response from another expecting mother from Kerala

Yes, I'm at Kerala now. I'm working from home since last month, till end of June. From first of July I'm on leave. It's really good to be at home , eating mother's food...My Gynaec advised against *Kurunthoti kashayam*, since she said she doesn't know what effect it may cause. Hence though i believe it is harmless (in fact i know 100s of women take it) i dropped the idea of having it...But she said I can use external application of ayurvedic oil. We bought "*Dhanwantaram Thailam*" from Kottackal. I'm applying warm *thailam* (oil) every Tuesday and Friday before taking bath (for 10 mts) and take bath in warm water. I started only last week, but I can already see results. My body pain has reduced.

In the above exchange, the first mother was told not to take the ayurvedic medicine by the allopathic practitioner. Since obstetrics/child delivery has almost entirely shifted to the realm of allopathy, people have become increasingly dependent on the advice of gynecologists and obstetricians, a trend that people from earlier generation criticize. Though she particularly mentions that she got some 'good' tablets prescribed by a 'good' ayurvedic doctor, she had no choice but to listen to the allopathic gynecologist on whom she was dependent for delivery. However, note that she does not find it necessary to ask the doctor about using *kurunthoti kashayam*. This could be either because she thinks it is a home practice akin to food that does not fall into the 'medicine' category or because she has trust in a traditional practice that she suspects an allopathic doctor is likely to be unappreciative of. The second mother on the other hand, mentions this to her doctor who promptly advises her against it. A popular Malayalam health care monthly brings up this discordance for discussion (Manorama Arogyam 2012). The article presents a balanced perspective on the commonalities and divergence in the views of allopathic and ayurvedic doctors on the matter of post-delivery care. It points out that since 100% of the deliveries take place in hospitals where adequate care is provided, allopathic doctors are dismissive of the need for elaborate ayurvedic treatments, but in spite of it,

Malayalees by and large prefer to follow the ayurvedic post-delivery treatment even today. This is reminiscent of use of *Jamu* (traditional Javanese medicine) in Indonesia as a parallel system of postpartum care (Esterik 1988). Note also the comment from the first mother about the lack of skilled people for treatment and the consequent bargaining power enjoyed by the service providers. This has scarcity has resulted in the evolution of new forms of service commodification (See Section 7.16)

Ambika, a professor in an ayurvedic medical college in Northern Kerala said she had a tough time as her allopathic gynecologist was dead against her following the traditional ayurvedic regimen. This being the case, the plight of the average *Malayalee* is not surprising. Complaint about allopathic doctors' hostile attitude towards Ayurveda is often heard. Ayurvedic doctors feel that allopathic doctors' attempts to indoctrinate patients as an important reason that contributed to patients moving away from ayurvedic medicine. Ayurvedic doctors also express their distrust with allopathic diagnosis and medicines, but unlike allopathic doctors who are dismissive of patients taking other medicines, they say that it is acceptable to take ayurvedic medicines along with allopathic, that they are complementary and not conflicting²²⁹. But the trend of advising against the use of traditional herbal practices is not universal. There are allopathic practitioners and nurses, especially of the earlier generation who are themselves rooted in such traditions and practice seasonal routines. Unlike allopathic doctors outside Kerala who prescribe ayurvedic drugs as a result of marketing done by pharmaceutical companies, in Kerala there are many who do it from their personal experiences. For instance, Jancy a farmer in her early 50s, was prescribed decoction of the herb *Cheroola*²³⁰ by an allopath for her chronic kidney complaints after allopathic interventions failed. There are also allopathic practitioners who refer patients to ayurvedic doctors. Dr. Vasudevan Namboothiri of Vaidyamadham Vaidyasala said, "Allopathic doctors have done much damage by spreading wrong ideas about Ayurveda through their patients. However, there are also a class of doctors, who are much enlightened whom we have a very good relationship with. They even refer patients to us, for illnesses

²²⁹ This has developed as a convenient, perhaps unconscious strategy to accommodate themselves within the dominant system challenging which might be counterproductive to them in the long run. Homeopathic doctors on the other hand usually proscribe the use of other medicines, contending their minute dosages are easily neutralized by other substances.

²³⁰ A herb well known for its diuretic properties, used for the treatment of urinary ailments and kidney stones.

that they think our medicines work better”.²³¹

I got an illustration for cross-reference from a story recollected by one of the respondents, *Anju*, a retired nurse in her mid-60s. In her late 50s, she had consulted an orthopedic in a neighboring large, private allopathic hospital, after a bad fall. Following an x-ray, the doctor confirmed that she had a hair-line fracture after an x-ray. After weighing the pros and cons, the doctor told her, “given the location of your fracture (hip) and age, putting a plaster cast and getting confined to the bed for a month is difficult for you. I recommend that you visit Pooanampatti.”²³² She took the advice, and went through the procedure. Though she had to travel 70 km up and down twice for the treatment, she was back in action in a matter of three weeks²³³.

5.9 Breaking barriers: commodification of the decoction

Complexity of processing and perishability are important factors influencing commodification. Most of the classical forms already had a long shelf-life²³⁴; no advanced technology was required to turn them into shelf-ready commodities. The ayurvedic manufacturer who began to dream big by converting the small scale *vaidyashalas* into a centralized mass production, had little else to do besides convincing practitioners to buy from them. It was not difficult to convince them as artisan production was already in place, and the vaidyans were already accustomed to outsourcing the processing of complex medicines. Decoctions posed a problem, as they were highly perishable. They had to be used within two to four days of making, depending on the nature of ingredients and climatic conditions. The greatest challenge to mass production therefore was the polyherbal decoction. Given its centrality to medicinal practice in Kerala, unless decoction could be put on the shelf, the penetration of the manufacturer into the ayurvedic market would be limited. So, in early 20th century, when Dr. P. S. Varier of AVS took a small and simple step of adding Sodium Benzoate to the decoction to make it

²³¹He said that they do send patients to allopathic or homeopathic doctors depending on the case. He usually prefers to send patients with acute infections to allopathic doctors. During a consultation I witnessed him recommending a patient complaining of warts, to try homeopathic treatment instead. However, cross-referencing to other systems from Ayurveda to allopathy happens less often as usually patients make the choice based on the strength of the system.

²³² A place in Tamil Nadu bordering Kerala, reputed for traditional bone-setters. Treatment involves setting right the broken limb with the help of bamboo splinters, following an application of medicated oil.

²³³ The cost of treatment was ₹ 300 (\$6) (a tenth of allopathic treatment). Despite the cost of private taxi amounted to ₹ 1500 (\$30), she saved half the money she would otherwise spend.

²³⁴ Fermented preparations (*Asavas and Arishtams*), medicinal jam-like forms based in jaggery (*lehyams*), ghee-based forms (*Ghritams*), Pills (*Gulikas and Vatis*).

shelf-stable, the biggest step in commodification of Kerala Ayurveda was taken. It certainly met with opposition from the conservative practitioners, however it did not take much time to become an established practice. In the words of an eminent ayurvedic practitioner-scholar from Kerala,

One does not have to roam the sunny fields or the grassy hill slopes anymore in search of the herbs! The involved process of grinding the ingredients and preparing the medicine by boiling, reducing to one fourth on a low fire...was done away with. The day we did away with the family '*kashaya kalam*' (the decoction pot) we became entirely dependent on the market and had to be satisfied with whatever it dished out (Agnivesh 2010:83).

When Dr. P. S. Varier started production, he was talking about the difficulty in convincing people to stop making medicines at home and buying the market. But the Kerala ayurvedic market has come a long way since then. The market for finished medicines has expanded enough to accommodate thousand odd manufacturers. In the words of a reputed practitioner-scholar from Kerala,

This convenience was cleverly maneuvered to make the preparation of medicine look like a bothersome inconvenience and the customer was gently persuaded to step back from the preparation of medicine (Agnivesh 2011:84)

Traditional practitioners who used to only limit their consultations to prescriptions moved to medicine-making using new technologies like pulverizers and mechanized grinders. Two respondents, small practitioner-manufacturers from vaidyan families said they began to make and sell medicines when patients began to buy medicines from the market. One claimed that he was motivated following a moving account of a patient, a daily wager who had to take a day's leave just for making medicines. Whatever be the stated reason, for practitioners it must have made economic sense to cash in on their regular clientele, instead of letting them buy from elsewhere. According to Kabir (2002 cited in Harilal 2008) average self-trained practitioners who could not compete with institutionally trained ayurvedic graduates, turned into manufacturers and salesmen of medicines.

The first pre-packaged decoction came in 500 ml bottles that lasted for ten days, the typical dosage being 30 ml twice a day to be consumed directly. Another form of decoction soon emerged called *kuruku kashayam*, which was nothing but concentrated decoction that had to be mixed with water. This did not make much difference to the consumer, but made a big difference to the industry in terms of packing and carting, as bottles reduced to a manageable size of 200 ml. Most manufacturers prefer this format now, though there are some who continue to make the older form.

But as we can see from the continuing consumption from raw drug shops, factory medicine has not yet stopped people from cooking decoctions at home. This is not surprising; a similar trend is seen in the food market. Despite the inroads commodification has made ranging from spice mixes to ready-made food, it is still common for people to make their own spice mixes. The reluctance of the Malayalee patient to consume and practitioner to prescribe factory-made decoctions contaminated with preservatives, allowed space for other forms of commodity to emerge. A common commodity in this space is the *kashaya churnam*, i.e., “decoction powder”, powdered form of decoction that needs to be boiled for a short time. This segment is mostly dominated by small manufacturers, but a few large and medium manufacturers do sell a narrow range of powders of commonly used decoctions. At a further lower level of commodity is the *kashaya-koottu*, i.e., ‘decoction mix,’ finely chopped ingredients packed and labeled by formulation. Branded commodities are not common in this segment. The most common of the decoction mixes are those packed by retail raw drug sellers (see Section 6.1). There are also some disease-specific proprietary products from micro manufacturers who capitalize on family knowledge of traditional recipes, commonly aimed at urinary stones, hemorrhoids, etc. This is in a way nothing but an extension of the single-root (*ottamooli*) practice in the commodity form. Decoction powders and mixes are among the highest selling commodity for Oushadhi, the Kerala State-owned manufacturer. For this company, the policy is more rooted in a sense of commitment than business. The marketing manager of Oushadhi is unhappy that these products eat into their profit margins; they could achieve better turnovers if they eliminated or scaled down such products.

Another commodity in the space, invented and dominated by a single company, is the *kashayam sookshma churnam*, (decoction micro-fine powder) which is just another level of simple processing. Everest Pharma, a newcomer to ayurvedic manufacturing is the single handed inventor of this product category. The company began with decoction powders on the advice of the vaidyan (see page 80). The purpose was to aid patients to make decoctions at home by making the process less time consuming. The business model was successful; Everest has now grown to a ₹ 20 mn (\$0.4 mn) company. The product form continues to remain their mainstay. Their brochure, complete with a pictorial representation of the process, emphasizes on the marriage of convenience with tradition,

Everest Pharma developed the concept of *kashaya sookshma choornam* (KSC) after thorough study of all parameters and consulting many scholars of Ayurveda....KSC updated traditional *kashayam* into the instant age and hence considered a landmark in Ayurveda....KSC is the modern version of *kashayam*, better than the other forms available, suitable for present life.

The absence of preservatives is emphasized, elevating it above the industrial decoction which is contaminated with a non-ayurvedic chemical. Everest Pharma displays on its website a newspaper report that summarizes several arguments and counterarguments regarding the appropriateness of this form (Davies 1995). There is an argument voiced by a few reputed scholars that the use of decoction micro-fine powder instead of the regular decoction mix can cut down the material requirement by 60%, that this would be less expensive for the patient and would help in conserving valuable medicinal resources. The dissenters including the Secretary of the Kerala Ayurvedic Medicine Manufacturers' Association argue that the form is not recommended by the classics. They advice caution and they suggest that more research needs to be undertaken to ascertain its efficacy and safety. In the past decade, the decoction has got dragged to the next level of value addition in the form of '*decoction tablet*'. Unlike other forms, it has become a bone of contention between ayurvedic manufacturers and conservative Malayalee practitioners. The Kerala consumer is now faced with a new dilemma. Is the decoction tablet the same as the decoction? This issue is taken up for discussion in Section 9.2.

5.10 Conclusion

Index plants *brahmi* and *kurunthoti* provide a glimpse into popular culture of medicine and also showcase people's involvement in processing classical medicines at the household level. To make a definitive statement on the reasons that have contributed to producing the distinctness in the medicine making in culture in Kerala Vis-à-vis rest of India, is not possible without a comparative investigation. I suggest that the nature of pharmacopeia in vogue, is one important contributor to this distinction. North Indian pharmacopeia is dominated by herbo-mineral preparations, that tend to be complex and have to undergo time-consuming processes of purification. As a result, medicine-making might have evolved as the province of the expert practitioner. Even the herbal pharmacopeia outside Kerala is skewed towards more complicated forms, fermented preparations, pills, and ghee-based preparations. Decoctions and oils are the least preferred. Kerala pharmacopeia on the other hand is not only

predominantly herbal, it also was centered around simple forms like oils and decoctions, heavily based on herbs from the surrounding commons. The ubiquity of the decoction in the ayurvedic pharmacopeia in Kerala made home processing of medicines a regular activity. The only challenge for the North Indian manufacturer was to wean off the practitioner; Kerala ayurvedic manufacturers had the additional task of breaking the barrier of household medicine-making. Commodification of the perishable decoction can be therefore considered the most important step in deskilling consumers, that was done with the promise of saving people from the drudgery of cooking medicine.

Everyday involvement in making medicine binds lay people in a relationship with ayurvedic ingredients. Etkin (2008) in her discussion of Hausa medicine, discusses the importance of organoleptic (sensory) qualities in people's evaluations of food and medicine. Consumers in Kerala, in being involved in the making of medicines, had developed familiarity with commonly used raw material and sensory qualities of medicines and medicine ingredients. In the process of making medicines, the pungent aroma of the decoction simmering on fire, the unpleasant astringent flavor of the decoction had come to be associated with healing; the smells and tastes conveyed a sense of comfort and reassurance absent in the experience of consuming factory-made medicine. This personal knowledge of and affinity with medicinal herbs, I argue, served to promote both active and passive conservation of medicinal resources in commons and homegardens. Accumulation of organoleptic knowledge of ingredients also made lay people knowledgeable of ingredients and therefore, perceptive of their quality. This in turn made them sensitive to minor changes in the 'form' of medicines. Distancing people from medicine making therefore deskilled them in several ways, an important effect of which can be seen on conservation of resources in homegardens and commons (for detailed discussion, see Section 7.4). But the metis and habit that developed due to the historical household involvement in medicine making has made the average Malayalee resistant to the deskilling effects of mass production. Though factory made decoction has made significant inroads, the process of commodification of ayurvedic medicine in Kerala is far from complete. Finished medicine still has to compete with home made medicine, and in the space between the older 'slow' medicine and the ready made 'fast' medicine, numerous other forms have emerged that offer a mid-way solution.

CH 6 UNPROCESSED AYURVEDA

Raw drug shop: the key node of pre-industrial Ayurveda

If there is a single node that can be identified as key in the network of ayurvedic metis in Kerala, it is the raw drug retail store. From ancient times to up to half a century ago, these shops were the nerve centers of ayurvedic medicinal consumption in Kerala. The landscape of Kerala, both urban and rural, is dotted with retail raw-drug shops. Be it in the city of Kottayam, a town that is known for its gulf and rubber wealth, or in the capital city of Trivandrum, or in the financial capital Ernakulam, raw drug shops can be seen jostling for space amongst swanky textile shops and gold marts. For example, as we can see in the image on the right, in the heart of Trivandrum, a raw drug shop (shop in the extreme left corner) stands neck to neck with up market malls and textile stores. There is no statistics available on the number of raw drug shops, but in the seven districts that I traveled for field work²³⁵, the average density is one shop in every second or third village centre (within a distance of 5-8 miles). In a larger town, the number of shops range anywhere from 3 to 6, in a smaller town 2 to 3 (See Section 2.8). In the past decade, with urbanization, many new shops have opened to occupy hitherto unrepresented villages or to match the demands of growing towns.



Raw drug shop jostling with modern malls in the heart of Thiruvananthapuram city

Lack of attention to this market segment in social science research on Ayurveda is not surprising because elsewhere in India their presence is restricted to market centers in big cities and towns where they mainly cater to traditional practitioners and manufacturers rather than to the

²³⁵ Three in Central Kerala, Four in North Eastern Kerala, and one in Southern Kerala.

general public.²³⁶ In Kerala, on the other hand, only a few large raw drug shops in markets cater to wholesalers; the rest cater to the retail market. Some wholesalers also have a retail front end. An ayurvedic practitioner from Rajasthan expressed his envy of Kerala practitioners because people in Kerala had access to raw drugs which made ayurvedic medicine affordable to patients from lower economic classes²³⁷.

Following detailed ethnography of popular and traditional medicinal practice in coastal Tamil Nadu, Sujatha (2007) identified the raw drug shop as a key node in the knowledge network of 'medical lore'. The presence of raw drug shops was noted in 18th century Punjab (Sivaramakrishnan 2006). In both cases, these appear to be a urban feature, present only in towns and cities. In fact, the ayurvedic raw drug market outside Kerala appears to be recent. Kumar (2001) points out that during the Moghul era, a class of druggists (*attaris*) had developed to supply raw drugs, extracts and compounded medicines to *Unani* practitioners, but ayurvedic practitioners had no such network; they had to source raw drugs from the grocer, villagers, forest-dwellers and other vendors.

As discussed in the last chapter, in pre-industrial Kerala, household processing of simple medicines was common; non-local ingredients were sourced from raw drug shops. Medicines sold in the shop are called *Angadi Marunnu* ('market medicines') because they were historically sourced only from the market²³⁸. In fact, the typical name of a raw drug shop is suffixed with *Angadi* (e.g., *Angadi merchants*). The shop is referred to as *Angadi Kada*, literally 'market shop'. In some regions, it is also called '*pacha marunnu kada*' (the fresh/raw medicine shop). If a businessman is said to be involved in '*angadi business*', i.e., 'market business' it is understood that he is into raw drug business. How raw drugs came to be the most representative of all commodities for market activity, is an intriguing matter that begs further investigation. But prima facie, it is an indicator to the historicity of the raw drug trade in Kerala, that appears to have been as old as spice trade. There is evidence of raw drugs

²³⁶Conversations with doctors from other parts of the country including Rajasthan, Karnataka, UP and Maharashtra and a pharmacognosist from Rajasthan who was familiar with raw drug market field revealed the lack of such widespread raw drug retail network. Inquiries with a few residents of Tamil Nadu, Karnataka and Maharashtra, substantiated this view.

²³⁷"During my training in Kerala I found *Jadibhuti* (Hindi term for raw-drugs) shops everywhere. We have large shops only in major cities, people in rural areas have no easy access to raw drugs. I envy the practitioners of Kerala. I used to be working in a government hospital, and I have come across a lot of poor people who cannot afford medicines. If raw-drugs were available to people in rural areas, it would have made health care affordable to the needy". (Dr. M. Gupta, participant, Global Ayurveda Conference, Jaipur, Dec. 2008/9).

²³⁸ Even those collected locally (e.g., *Karimkurunji*), but for a few exceptions (e.g., *Kurunthoti*), first enter the wholesale market, from where it may travel to any of the retail markets in the country.

being part of ancient transnational spice trade stretching from China to Greece. Evidence about medicinal plants being part of the global spice trade network between 10th and 12th centuries is available from the Geniza documents²³⁹ (Hall 1978)²⁴⁰.

Islamic physicians who visited India between 14th and 19th centuries translated several ayurvedic texts into Persian and Arabic, and integrated therapies and drugs of ayurvedic practice into their system of medicine. This would have further expanded the import and export of raw-drugs between India and the Middle East. A Manipravalam (old Tamil-Malayalam) document between 14th to 16th centuries²⁴¹ provides a list of 42 raw drugs (Rajagopalan 2008)²⁴². Another 600 year old Manipravalam manuscript collection (*Alathur manipravalam*) shows that by then though local fresh herbs were used, dependence on raw drug market was high (Varier 2009). If non-local medicinal material had to acquire the status of spice, it would indicate the historicity of Kerala practitioners' connection to the classical ayurvedic system and a consequent demand for a pan-Indian materia medica.

The chapter begins with an ethnographic account of transactions in raw drug shops in section 6.1. The number, complexity and variability of raw drugs makes selling a metis-dense activity. Moreover, consumption of medicine commodities unlike most others is expected to be mediated by an expert. Though this is the doctor's role, raw drug shop keepers are expected to be knowledgeable about composition, processing and dosage. A discussion on the nature of knowledge and skills demanded of raw drug sellers in everyday transactions, is presented in section 6.2. Being at the cross-roads of transition from raw to finished medicine, raw drug shops provide an ideal ethnographic vantage point. Section 6.3 documents the transition of consumption from home-processed to factory-made medicines, the reasons for such shift and the implication for raw drug shops. It is surprising to

²³⁹ Geniza documents are scraps of paper, letters of correspondence, and figures of business transactions maintained by a group of Jewish merchants between 10th to 12th centuries, found hidden in a room in a synagogue at Fustat in Old Cairo. Fustat merchant families established branches of operation in the ports of Malabar and Coromandel coasts.

²⁴⁰ This was the coastal trade route between Arabs, Egypt, India, China and rest of South Asia. There was also an Himalayan trade route that traveled both towards south and through Afghanistan to the Port of Petra on the Red Sea. This is probably how the famous Spikenard used by Mary Magdalene to anoint the feet of Jesus, traveled from the Himalayas to Rome through Arabians and Parthians (Thorley 1969).

²⁴¹ The fact that market items included food that is considered subsistence in Kerala even today (e.g., jackfruit, plantain stem) suggesting the existence of a substantially urbanized civilization.

²⁴² The list ranged from plant material like turmeric, spikenard, *ashwagandha*, to animal derivatives like *gorochona* (stone taken from the gallbladder of a cow), civet cat secretion.

note that despite the inroads made by finished medicine, raw drug shops continue to co-exist. Section 6.4 provides an analysis of factors that drive continuing raw-drug consumption. These include: predominance of decoctions in the Kerala pharmacopeia, narrow range of manufactured pharmacopeia, people's perception of home-made medicine as authentic, and also economic considerations. *Traditional-popular formulations*, a category based in popular seasonal and post delivery diet regimes, is an important segment that drives raw drug consumption; section 6.5 provides two illustrations. The example of seasonal medicine porridge shows the vulnerability of this segment to commodification (6.5.1) whereas home-processing of post-delivery medicine (6.5.2) shows resistance to factory-produced commodities.

6.1 Key node of an ancient commodity chain: a descriptive account

A routine week day in Thrissur, Central Kerala. The city has just begun to warm up in the morning sun. The market street located at the heart of the city is already teeming with people and traffic; the usual nightmare of a busy city street in India where all are equal in their claim to the right of way, irrespective of the direction they are heading to. Every half minute, a private bus zooms by, gulping in and spitting out hoards of people. For an unaccustomed pedestrian like me, it is a long wait to cross the street. Across the street is a row of shops, all colorful and smart looking with the new flex boards and neon signs. One tiny spot catches the eye; at first glance, it looks like a piece of a vegetable market cut and pasted on a posh urban landscape. As the swarming customers thin out, the shop becomes more visible - strange shaped roots and herbs are seen hanging from the roof, gunny bags stuffed and overflowing with roots are lying all around the shop spilling over to the pavement. By the time I try to make sense of the stuff, the shop has again collected a crowd. Perhaps it is the busiest shop on the lane, though in all likelihood, selling the lowest-priced goods compared to other shops on the street. Given the value of land in Kerala, it is a wonder that a business like this continues to thrive on such prime real estate. What makes it look even more outlandish is that its neighboring shop sells the priciest commodity in Kerala next to land - gold. Ironically, the board of the jewelers' shop has extended over and literally swallowed the adjacent board. Is it metaphorically portending an ominous future? A mixed aroma of raw drugs envelop me as I approach the shop. The board announcing the

name of the shop, *Country Drug Merchants*, becomes visible only on entering the shop. It is an ancient hand painted board that appears in stark contrast with the adjacent modern flex boards. The shop is over a hundred year old, now run by the fifth generation of the business family. The shop has two faces, the retail one that opens out to the busy street and a wholesale outlet that opens out to the market. Significant business now comes from bulk door deliveries to pharmacies. Nevertheless the retail segment continues to attract substantial revenues because of continuing demand and high margins.



Raw drug shop adjacent to a gold jewelry shop, Thrissur

In the shop, the activity is on at a hectic pace. The crowd of customers, around 10-15 in the small space in front of the ten feet long counter provides an ideal opportunity to hang around and observe without being intrusive. Of course, in the bustling of the street, the transactions are hardly audible, especially because the raw drug names are unfamiliar to me. Most of the customers are seen buying small quantities of raw material to make medicines at home. Practitioners do not prefer to buy from retail stores in such regions because of the proximity of the wholesale market. Retail prices can be two to three times the wholesale price.

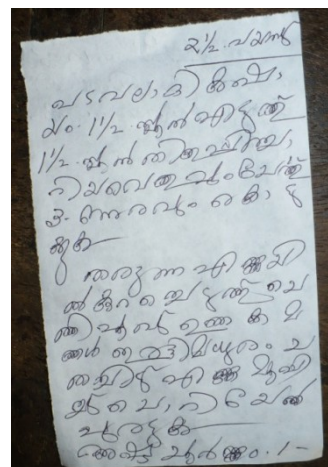
Customers without prescriptions typically ask for either single herbs or popular compound medicines. For example, customers are seen asking for *vayambu*, a rhizome which is usually used for neonatal care or for digestive complaints, or *njerinjil* for diuretic purposes. One customer asked the price for *ekanayakam*, a thick tree root. He exclaimed when he heard the price, that had gone up from ` 25 (\$0.5) to ` 75 (\$1.5) within two years. He wanted a whole chunk, unbroken, preferably weighing less than a kilogram. The shopkeeper took a piece weighed it and said, “this is 1.5 kgs. Why don’t you take it, I will give it for 100 rupees (\$2)”. After some hesitation, the buyer agreed for the deal. Many

shop-keepers reported an increase in demand for this tree root, an anti-diabetic drug.²⁴³

Specialist vaidyans who dealt with large volume of certain categories of patients had ready-made formats for prescription. One customer, a patient under treatment by a traditional bone-setter for a fractured hand, carried a neatly printed prescription from his vaidyan, that read like this (translated from Malayalam, italicized words are names of raw drugs):

K. M. Chikilsalayam Mekkad - 68xxxx Phone: _____ Date: _____ Name: _____ <i>for kuzhambu (balm/ointment)</i> Rock salt, <i>chanchalyam</i> , <i>chenninayakam</i> , <i>kantharam</i> , <i>kanmadam</i> , <i>kunthirikkam</i> , <i>shatakuppa</i> , <i>panchamampalukka</i> , all in the quantity of one <i>kazhanju</i> (equivalent to 4.5 gm.), ground in the juice of the bark of drumstick tree along with <i>arikkadi</i> (rice washed water), mixed with two chicken egg whites, in a spoon of honey and ghee (clarified butter) to be applied on the fractured area continuously, as and when it dries. Dietary Restrictions Do not take cold water, meat, fish, egg, butter milk, milk, curd, tamarind, tubers, legumes, oil- fried snacks. Office Hours: 7 a.m. to 1 p.m. , 4 p.m. to 6 p.m. Sunday Holiday
--

At the raw drug shop, it is more common to see prescriptions from traditional vaidyans rather than modern ayurvedic doctors. There are regional differences in this trend. In a small town in Thrissur, raw drug shop sellers reported that but for a small number of young doctors, most other qualified doctors regularly prescribed raw drugs. They attributed this to the fact that most of these people hailed from traditional vaidyan families. It is also a common practice to combine raw drugs with classical medicines in a single prescription. For example, one customer who was buying medicine for arthritis, had a prescription listing four ayurvedic classical medicine formulations, along with which she was also prescribed a raw drug, *njerinjil*, considered an important diuretic.



Raw Drug prescription from a traditional vaidyan

The centerpiece of attraction in the raw drug shop is a large wooden medicine chest. The chest, measuring six by three feet, is raised by one and a half feet from the floor on the support of six wooden legs.

The box is divided into 64 small compartments of equal dimensions to accommodate the most important of the *angadi* (market) medicines. The compartmentalized chest is convenient for such

²⁴³ Kerala is one of the states in India reporting dramatic increase in the incidence of diabetes (Thankappan et al 2007).

purposes because it minimizes the requirement of moving around. The shop-keeper could hold the handy traditional weighing balance (*velli kol*, literally silver stick) over the box, the weighing bowl could be dipped into the chest and the excess material could be poured back by tipping the bowl. This would be especially useful for medicines with a large number of ingredients, some decoctions and certain traditional medicines like *Angadi 64* and *Valiyangadi Kashayam*, that require 64 and 48 raw drugs respectively. But today shop-keepers use their spare time to keep high-demand assorted stuff in packets so that they can save time during peak hours. The centrality of this box in the medicine business is visible by the Malayalam name of the medicine shop, *angadi petti* (*angadi* = market and *petti* =box). In fact, in Northern Kerala the dry raw drugs are called *petti marunnu* (literally, *box medicine*). With the advent of modern storage shelves, these grand chests have gone out of use. However, most shopkeepers are reluctant to dispose of the chest that stands as a symbolic icon of the long-standing business tradition.



Raw drug chest displayed at an ayurvedic industrial exposition

But most raw drugs do not yield to neat arrangement, so a typical look of a raw drug shop is messy and chaotic. They are spread all around the shop, in tin boxes, gigantic glass bottles and gunny bags. The typical inventory consists of 150-300 dry drugs, 5-20 fresh herbs, and 100-300 semi-processed and factory finished medicines. The drugs are not limited to herbs but also include minerals like five-salts, alum, asphalt and animal products like deer horns, coral, marine shells and ambergris.²⁴⁴



Raw drug sacks in front of a raw drug shop

The prices of medicinal drugs range from dirt cheap, as low as ₹10 (\$0.2)/ kg for local fresh herbs and

²⁴⁴ A solid, waxy, flammable gray or blackish colored substance regurgitated by sperm whales.

roots to highly expensive ones like *atividayam* (Aconitum) at ₹ 4000 (\$80)/ kg.²⁴⁵ The inventory is not limited to dry and fresh raw drugs, but includes a range of items like spices, dry fruits, semi-processed food like sago, arrow-root powder, millets like *ragi* and barley, oils used as medicinal base, incense and perfumes. Some shops also include *pooja dravyam*²⁴⁶ (material used for ritual offerings), on their nameplates. To the traditional assortment are added a large range of packaged herb powders/chunks either in single ingredient form or popularly used combinations. Not to lose on the growing market in finished medicines, many also take up ayurvedic pharmaceutical dealerships.

The fresh medicinal herbs (*pacha marunnu*) sold in the shop are locally collected herbs and roots, mostly from commons and home-gardens, and occasionally from the forests. Though *pacha marunnu kada* has become a popular alternative name for the shop, and in some regions more in currency than the older name, fresh medicines here are a small number, ranging from 5 to 20 items.²⁴⁷ At one of the shops in Idukki district, a medicinal plant collector delivering his daily collection to one raw-drug shop addressed the onlookers teasing the shop-keeper, “He calls his shop *pacha marunnu kada?* (fresh medicine shop) What is there which is *pacha* here, everything is dry, he should be calling it *onakku marunnu kada* (dry medicine shop)!” Amidst people’s laughter, the shopkeeper sheepishly tried to defend himself, “I don’t have much space here to be able to keep them spread so that they don’t rot.” What the collector failed to note was that the local herbs are mostly available to people in the rural region, and therefore does not easily acquire commodity status. For a herb to acquire a commodity status it has to be non-local, seasonal or rare. For instance, *njerinjil*, a herb common in the arid regions, has a market demand in the non-arid region. The number and quantum of fresh herbs is larger in urban centers where people have less access to commons, farms and forests. In some regions, decline in the inventory of fresh herbs is owing to the near disappearance of collectors, but those located near wholesale markets have no dearth of suppliers. Two ST communities, Ulladans and Nayadis, who lived in marginalized areas in the non-forest regions of central Kerala were historically dependent (almost up to late 90s) for their livelihood on collection and sale of medicinal herbs. Now

²⁴⁵ Sale of high priced rare endangered material like *Kasturi* (Musk) and *Rakta chandana* (Red Sandal) is banned.

²⁴⁶ *Pooja* = worship, *Dravya* = material

²⁴⁷ The most common are *Aloe*, *Dantapala*, *Neeleamari*, *Kaiyunniyam*. Others include fresh or partly dried barks of *Nalpamara* (the four ficus trees), roots of *Kurunthoti*, *Ramacham*, tubers of turmeric, ginger, partly dried whole herbs like *Cherulam*.

they have better alternatives; the few remaining collectors supply only to the wholesale market. Despite proximity to forests, raw drug retail seller Raghavan was in short supply of fresh herbs owing to lack of reliable pluckers.

The older generation of herb collectors are gone...there is enough money to make as a side-income, but the new generation is not familiar with the plants. I do get some of my supply from the *Mannan* tribals. But they are not innocent any more, they have also become crafty now, like us. There is one single old-time plucker who supplies to all the shops in this region. Raman Kutty is his name.

His narrative was interrupted by a sudden commotion. A person approached the making a high pitched announcement, and the idling shop keepers nearby had come to the pavement to watch him. "There he is, he has 100 years of life!²⁴⁸ That is *Raman Kutty*, the plucker I was talking about, and as usual he is drunk!", said *Raghavan*. "It may not be advisable to talk to him now", he said, afraid that he may utter some profanities. But as an afterthought, he added, "But probably it is very difficult to get him in his senses anyway; he is always drunk when he is in the market. He spends his entire day in the market region, everyone knows him and everybody is fond of him".

By 11 a.m. in the morning, *Raman Kutty* seemed to have already finished his day's work of collecting and supplying raw drugs to local shops, and decided it was time to make merry. Surprisingly, despite his inebriated state *Raman Kutty* was well focused when it came to the subject of his trade, though once in a while he got caught in flights of fancy. When asked about his age, he said, "I am not sure, I feel like I am 16. But probably I am around 84." The small crowd that had gathered around came to a consensus that he was in his mid 70s. His speech was not just eloquent because he was drunk, it showed a knowledgeable mind. His language was literary and spicy, peppered with proverbs, stories from mythology and Sanskrit verses. Today he is the sole plucker who supplies local raw herbs to the five raw drug shops in a migratory hill town in Idukki district. Migrated to this region from the plains at the age of 18, he took up this vocation learning the skills from the market and vaidyans. Two decades ago there were a dozen pluckers, but none is left now. Today forest regulations have also become problematic. "I used to collect from Marayur forest, but for the past 10-15 years they don't allow me to take medicinal plants through the check post. They would have let me if it was Sandal, ivory, they might even accompany me", he quips tongue in cheek. If there is excess collection, he

²⁴⁸ A common utterance made when one encounters a person who is the subject of a recent or ongoing conversation.

temporarily stores it with one of the shop-keepers. He takes it to the wholesale market when prices are better. “Look at this”, he picked up a root of *nagadanti*, a giant tree from one such sack sitting in *Raghavan’s* shop. and asked the onlookers, “Can you imagine how difficult it is to pluck this out!” When asked if there is a steady income flow from this activity, he asked, “Why else would I be doing this?”. One of the onlookers, owner of a neighboring shop who was privy to the conversation, defensively interjected with a sentiment that was a mixture of fondness, respect and despair, “You don’t know, he earns more than this shop keeper here, though most of it goes into drinking”. *Raman Kutty* added, “I earn more than a wage laborer. But now you don’t even get labor to work on the farm, how will you get someone for this work?” When asked if he had plans to teach anyone the skills and tricks of his trade, he said with an air of resignation, “Youth these days are not interested in this kind of demanding work, they just want to make a fast buck”.

6.2 Demands on knowledge

Knowledge and skills required of the raw drug seller are comparable to that of the biomedical pharmacist, but unlike the latter which is highly standardized, raw drug selling becomes a ‘high metis demanding activity’ because of the non-standardized nature of ayurvedic medicine and raw material. Customers do not always carry a prescription list, they tend to ask for standard formulations by their classic names. Some prescriptions mention the names of popular formulations without listing ingredients. The shop-keepers are expected to be familiar with commonly used formulations and measures of each ingredient. They keep with them a couple of reference books to look up when in doubt, the most common being *Sahasrayogam*, a popular Malayalam ayurvedic recipe book (for details, see Section 3.4). It takes an experienced hand to apportion and dispense the raw drugs. Most customers hand out prescriptions that list anywhere from one to three dozen items, each of which has to be weighed in small quantities and wrapped separately. In most shops the traditional weighing balance, *velli kol* (silver-stick) has given way to the digital balance, though traditional measurements (*kazhanch* and *palam*²⁴⁹) are still followed. Ashokan, a traditional vaidyan who owns a raw drug shop, reported with anguish that the Weight and Measures Department had heartlessly confiscated his old

²⁴⁹ *Kazanch* = 4 gm *Palam* = 48 gms according to Indian Pharmacopeia, 5gm and 60 gm. respectively in Kerala tradition.

balance, without taking into account its symbolic significance as a relic of a bygone era.

Some of the raw drug items, like large roots and whole dried plants, have to be cut to size. A large round block of wood, 3 ft high and around 1.5 ft diameter length, sits at one corner of the shop; it is used as a table for crushing and slicing large roots and barks, done with the help of a heavy curved knife. It is a time-consuming operation. While small shops are managed by the storekeepers themselves, large shops have 2-3 helpers. Some wrap the entire contents of a decoction together, leaving the customer to apportion it according to the dose while some patiently pack each dose individually. If a decoction is prescribed for ten days, this would mean ten different packets of the combination. Though this is tedious work, it makes for ease of use, and accuracy of dosage. At times customers ask for specific raw drugs, but may not be aware of the quantity required. After finding out its intended use, raw drug sellers recommend the dosage and mode of processing and consumption.

They are also expected to have some knowledge of medicine. People often approach them for solutions to minor health complaints. Formerly, many of the shop-keepers were also known to be vaidyans or as adept as vaidyans in their knowledge of medicine. Four respondents were in family business for generations and had naturally imbibed the knowledge of raw material and to some extent the knowledge of medicine. Two of the sampled shops were run by unlicensed vaidyans, who were affiliated to traditional practitioner associations for legitimacy. Though they did not openly advertize their services, locals were aware of their expertise and would frequent them for consultation.

In medieval Punjab, raw drug shop keepers (*attaris*) were known to have played multiple roles; they also made medicines and competed with doctors in providing consultation. They were often considered quacks because they lacked systematic theoretical training (Sivaramakrishnan 2006)²⁵⁰. But in Kerala, it is rare to come across such practice. Though there has been a demand from a small section of people in raw drug business for the right to prescribe, none of the respondents but for the unofficial vaidyans were sympathetic to the demand. Prescribing medicines is seen as a serious activity that needs theoretical competence. Besides, the raw drug shops had co-evolved with the vaidyans and have been in a symbiotic relationship with them; after all it was the vaidyans who sent them customers.

Just as biomedical pharmacy degree holders are expected to be knowledgeable enough to

²⁵⁰ This is reminiscent of the account on apothecaries in 17th-18th century England (see Gevitz 1999 for details).

recognize prescription errors or potentially harmful drug interactions, raw drug shop keepers tend to be vigilant in handing out medicines. *Mathew*, the raw drug shop owner at Arimbur, once came across a prescription that appeared suspicious; the classic formulation had been altered substantially. It is customary for traditional practitioners to vary one or two ingredients in a formulation to individualize treatment, but it was rare for someone to make drastic changes. Concerned, he asked the customer to hold on and went to meet the doctor, an internee in the nearby ayurvedic hospital. He had assumed that the doctor being a fresher had made a mistake, but to his pleasant surprise, he found that the doctor had intentionally substituted drugs to meet the patient's requirement. To recognize such errors and to be concerned enough to follow up, would require a far deeper knowledge and involvement in medicine than being just a seller of raw drug commodities. Similar role is played by Chinese medicine pharmacists (See Zhan 2009:70-71). In another transaction, I saw a raw drug seller dissuading a customer from buying *shilajit*. On probing further, he found out that it was meant to treat a critical ailment for which he felt that the quality of material he stocked was not up to the mark. Instead, he recommended a pure herb capsule of a reputed North Indian manufacturer (which he did not stock). The raw drug seller not only has to be knowledgeable to do this, but to place professional ethics over business, he had to have a level of involvement in medicine close to that of a *vaidyan*²⁵¹.

Respondents who had newly set up shops said they had acquired basic knowledge of raw drugs and medicine while working as salesmen in raw drug shops. Keshavan said that in addition to that, he studied the whole book of *Sahasrayogam* diligently to equip him for the business.

Knowing medicine is essential for managing the business, for growing your customer base. Occasionally customers ask your opinion on minor illnesses. Quite often they expect you to advise on the manner of medicine preparation and consumption. If you are knowledgeable, they will respect you. It helps in developing a personal relationship with the customers.

This shop-keeper, in his mid-40s represents a generation for whom aptitude or family background in medicine did not always mean an opportunity to learn medicine. Raw drug business provided the closest alternative²⁵².

Though a certain amount of complexity of knowledge is common to all trade, identification of a

²⁵¹ It was evident that the gesture was not intended to build long-term good will either; the customer in question was a transient Tamil laborer.

²⁵² Given the entry criteria in the institutionalized era that emphasized standardized school performance.

couple of hundred dry raw drugs especially in the form of roots and barks, calls for a far greater expertise. This knowledge is essential to be able to assess the quality and value of material, to recognize adulterants and substitutes. The experience of a couple running a large raw drug store in a town in eastern Kerala illustrates the significance of such knowledge. *Lakshmi* and *Sridharan* had come to settle in this migratory town two decades ago, with the idea of setting up some business. They took the advice of an experienced local elder and set up a raw-drug shop. Since they knew nothing of the business, they hired a knowledgeable helper. It took them a few years to realize that they were being royally swindled. After chasing him away and decided to learn everything on their own. *Lakshmi* said, “It was an uphill task; neither of us are from a family with any background knowledge of medicine. It took us almost two to three years to get a minimum hang of things.”

On the other hand, demand on knowledge and skills on the sellers of ayurvedic finished medicine is close to nil²⁵³. But recently the excise department in Kerala raised a demand that ayurvedic doctors should be present in shops that sell ayurvedic wines, a demand that drew the ire of the ayurvedic community and led to a long-drawn conflict culminating a state-wide sit in demonstration in December 2008. The excise department’s objection is based in a widely known problem of ayurvedic *arishtams* being used as a cover to sell illicit liquor. Several other concoctions are also sold in petty shops (*petti kadas*) in remote regions, sometimes in innovative forms and names (e.g., ‘Asava soda’). My first encounter with this practice was during the pilot study when I went to a remote rural shop at the edge of the Vazhachal forest, accompanied by the taxi driver. Surprised seeing a general store sporting a board of ayurvedic medicines in such a remote region, I went to speak to the shopkeeper who vehemently denied, “No! no! we do not stock any ayurvedic medicine here!”. Though I was puzzled at this reaction, I assumed it was a language difference I was misreading (Thrissur Malayalam has a distinct accent and vocabulary). As we walked back, a an inebriated assistant from the shop began to follow us, screaming at us. Before I could blink, the taxi driver told me to rush back into the car and we drove off. He later explained that we must have been mistaken as informants or journalists.

Though the Excise Department has a valid argument, manufacturers feel that it is used as an

²⁵³Handling of inventory is fairly automatic and fully supported by the manufacturer. In fact, there are very few businesses that is as less demanding for a investor without background knowledge, except for low-end businesses like Kerala Milk Corporation outlets or high-investment businesses like garment and footwear.

instrument of harassment; even establishments of repute are subject to raids. The problem is traced to the very origin of the four decade old licensing regime that made it mandatory for ayurvedic doctors to obtain SP7 license. Ayurvedic practitioners', manufacturers' and hospital management associations have submitted memoranda requesting the government to protect ayurvedic interests. One main argument put forward was the impracticality of implementing the rule given paucity of qualified pharmacists (Editorial 2010b, AMAI 2010). But in the past decade, there is a steady rise in the number of institutions offering diploma and degree programs in pharmacy, and it will not be surprising if over the next decade formal qualification in pharmacy will be considered a requirement for vending medicines in an ayurvedic pharmaceutical agency. In mid 2010, a compromise was reached by the excise department which agreed to give five licenses to each ayurvedic doctor and to allow existing sellers in the agency to continue provided they pass a qualifying test.

6.3 Old Medicine in New Bottles: Transition from unprocessed to processed

A large raw-drug shopkeeper at Adimali has just redone the shop, lining up all the available space on the walls with wooden shelves. The shop owner is proud of the new modern decor. Colorfully labeled and branded bottles stand in neat rows in stark contrast to the messiness of the roots and barks spilling around the shop. They stand as living testimony to the shift in consumption from unprocessed to processed medicine, from home to the factory. Raw drug shops typically used to sell a few dozen bottles of the more complicated formulations, usually manufactured by local pharmacies and vaidyans. But gradually with shift in consumption towards finished medicine, they could no more rely on raw drugs as their main source of income. Today, the inventory of finished medicines in a raw drug shop ranges anywhere from 50-300.

Though modern ayurvedic factories in Kerala began to roll out bottles of medicines in the early part of the 20th century, it took several decades for them to overtake raw drugs. While there were numerous companies manufacturing ayurvedic medicine by the 1950s, widespread expansion in pharmaceutical agencies occurred only post 80s. Since then, there has been a steady shift in the consumer base towards finished medicine. Some raw drug sellers try hard to attract clientele by arranging traditional vaidyans to consult in their shops on a weekly or bi-weekly basis, but such

vaidyans themselves have become an endangered species. Shops that rely solely on raw drugs do exist, but they are increasingly becoming rare. All raw drug seller respondents had shifted part of their allegiance to finished medicine. Of the sampled shop-keepers 60% had taken up exclusive agencies of ayurvedic companies. Others preferred to maintain their freedom to stock multiple brands.

It is rare to find a raw-drug shop owning an agency of a large manufacturer. Medium sized manufacturers are preferred because they offer better commission (25-30% compared to 18-20% offered by large companies). Established shops have a better candidature to pharmaceutical agencies²⁵⁴. A shop keeper in suburban Kochi who has not preferred to take up franchise of any pharmaceutical said, “I prefer smaller pharmacies because many of them are from families of local traditional reputation”. He keeps products of Bindu pharmacy, an old local pharmacy disinterested in expanding its scale of operation.²⁵⁵ A factor that a business analyst may consider retrograde, in his eyes, becomes an attribute of authenticity and commitment to real tradition. “Often, people want to grow and as they do, they lose control over quality. If you taste their medicine three times, they will differ in taste.” His shop is dominated by a different range of commodities that fit in various points on the continuum between raw drugs and factory finished medicine. Such products can be collectively referred to as *semi-processed* medicines.

Typically sold in sealed transparent polythene covers these come in various forms ranging from crude unbranded packets with hand-written labels to neatly sealed sachets with well-printed labels. Many are sachets hung on strings from the roof, adding to the overall messiness and



Mobile shop of Gandhigramam, a small company with focus on semi-processed products

colorfulness of the shop. Some are single-herb items one step removed from raw-drugs; processed in more convenient forms, mostly large roots and barks disintegrated into small chunks. Manufacturers

²⁵⁴An established shop-keeper said that he wanted an agency of a reputed manufacturer, but he was not inclined to pay the deposit of ₹ 20,000 (\$400). The manufacturer refused to give at a concessional rate. Later when the company tried to run its agency in the town and failed, they offered him the agency unconditionally without any upfront payment.

²⁵⁵With an estimated turnover of around 10 million rupees (\$0.2 million).

avoid fine grinding the raw materials, so the user is still able to identify and evaluate the quality of each component. Fine grinding results in powders and pastes, where it is impossible to detect substitution, adulteration or sub-standard quality drugs. Most of such products are produced by micro-units, i.e., those with a turnover of below ₹ 2.5 mn (\$50,000). Of late, many women's self-help group cooperatives²⁵⁶ have also entered this segment. Another set of packets consist of raw drug combinations of classical decoctions. Such products save the time of apportioning and weighing, but at the same time remain transparent to the consumer unlike finished medicine. Some are traditional products typically not found in the manufactured pharmacopeia.



Semi-processed ayurvedic products: those hanging from rooftops of this raw drug shop

In this category, one ubiquitous commodity has emerged from a routine cultural practice unique to Kerala. A common sight that catches the attention of visitors in Kerala is the colored water served in hotels along with meals. Malayalees are historically accustomed to drinking boiled water because of the high water tables that characterize much of the State. One of the most commonly used herbs, *karingali* gives the water a rich pink hue and it is a favorite among hoteliers for a unique feature that adds authenticity to the water - the bark releases color only after the water reaches boiling point. Though some of the tourists get suspicious of the colored water that appears more synthetic than natural, many are fascinated. The colorful glass becomes a part of their memoir collection in their Kerala picture album. For the more Ayurveda-inclined, it symbolizes the ubiquity of Ayurveda in everyday life in Kerala. Today, this simple household practice, has evolved a new product category *Daha Shamani* (thirst quencher), now a regular in the product portfolio of small and large manufacturers in Kerala.

There are also various medicine mixes, the most common being those meant to treat urinary problems and hemorrhoids. But there are also some that address serious disease like for example,

²⁵⁶ Including many units of *Kutumbashree*, micro-credit women's groups organized by the Kerala government.

diabetes (see image below). For problems like urinary stores, people routinely used to consult

traditional single-herb vaidyans, not ayurvedic practitioners. Today, either because such vaidyans are rare to find or to save the trouble of traveling long distance, people find it convenient to consume such products. These are not typically advertized. Shop-keepers play an important role in pushing them. However, respondents said they have to be careful because it is important to maintain good will; they are dependent on a loyal customer base for their



A proprietary decoction mix for treating diabetes, named 'Prameha Shamani'

survival. Chandran, who keeps a large number of semi-processed products in his shop, says he is wary of this class of products. He exercises his judgment and purchases only from a few reliable manufacturers whom he is comfortable with, because there is a much fraudulent stuff peddled by fly-by-night operators. Pointing to a bunch of semi-processed products made by a new company (VS), he explained,

This family was a neighbor of K. pharmacy (a manufacturer of repute). Both families have the tradition of ayurvedic medicine, but this person was not into Ayurveda. He took up an employment as a marketing manager in a company in Bombay. Recently he met with an accident after which he decided to settle here, and set up his own ayurvedic company. The family had a lot of ancient *tali ola* (palm leaves) at home. Nobody knows this, but in fact the K. pharmacy had got many of their recipes from this family. Look at this product for example (picking up a decoction mix for hemorrhoids), I am sure this will be effective because it is based on such traditional knowledge. It also works out cheaper than products of established companies. Not everybody these days want to go the vaidyan and consult, so they find it convenient when medicines are packed in this fashion.

The older raw drug sellers have plenty of such stories to tell. Their narratives also point to a distinct pattern in consumer preference. There seemed to be prime importance for local brands that are built over the traditional reputation of a vaidyan family. In regions where there is no local pharmacy worth its name, other factors came into play, like the history of distribution and doctor preference. For example, in a migratory town in eastern Kerala which has no established historic family vaidyan tradition, a particular brand was found to be popular. Further inquiry revealed the reason. The largest local distributor, who until recently was the sole distributor of ayurvedic products had a long-term liaison with the manufacturer concerned, which created brand loyalty in the long run. Customer

preferences also varied in terms of preparations, one company was known for their *arishtams*, another for their *oils* and a third for a particular product. Some such preferences are rooted in old memories of the fame of a particular product or reputation of a particular family in treating certain illnesses. But raw drug sellers acknowledge that ayurvedic doctors have begun to play an important role in influencing patient preferences. One raw-drug shop keeper said tongue-in-cheek, “different doctors have preference for different brands,” obliquely poking fun at the promotional technique. One shop keeper reported the practice of the “letter pad technique”²⁵⁷

Some shop-keepers these days print letter pads with addresses and leave with the doctors. After giving out a certain quantum of prescriptions, come and demand money from the shop, like 1000-2000 rupees (\$20-40). But I don't get into that kind of business. Very few customers fall for such techniques. Most people tend to have long-standing loyalty to a shop. They don't necessarily buy from the address on the letter pad. Why should we pay the doctor for no reason?

Despite stories of decline, it is remarkable that raw drug shops continue to do brisk business in the face of rapid proliferation of finished medicines. The high margins involved in retail raw drug business²⁵⁸ (50-200 % Vs 20-30% in finished medicine) compensates for various other drawbacks: the scale, labor intensity, slow movement, storage loss. There are mixed reactions from sampled retailers on the present and future of raw drug trade. Equal numbers of them are both pessimistic and optimistic about the present and future of raw drug retail market.

That it is still considered a viable business option is evident by the fact that four respondents had established their shops within the past decade²⁵⁹. Verghese, who runs a shop in the inner row of the main street in a large town in Central Kerala, is one such newcomer to the business. He had opened the shop two years ago using his seven year experience as salesman in a raw drug shop. Though he has an agency of a medium scale manufacturer, raw drugs are his mainstay. He claimed his business is actually growing every day rather than declining. It certainly showed; when others were in the process of discarding the traditional chest, he had upgraded his from 64 to 100 compartments. Kumaran, whose shop is located in the inner lane of a busy main street in the suburb of Kochi, is from a third generation raw-drug business family. He stocks several brands of finished and partly processed

²⁵⁷ I came upon this in my last visit to a shop in a migratory region, I could not follow up to see how widespread this practice was, and whether it was prevalent in other regions.

²⁵⁸ Menon's (2003) study shows an average retail margin of 65% for forest plants and 55% for non-forest plants with margins for some raw drugs going up to 400%.

²⁵⁹ New shops are established either in newly urbanizing villages or in expanding towns.

medicines, but a little more than half his turn-over continues to come from raw drug sales. Though his business is upbeat, overall use of raw-drugs must have certainly declined as many other shops had closed. During his grandfather's era there were eight shops in the region, all except his had closed down forty years ago. Another interesting case is that of *Shaji*, a raw drug seller in interior Thrissur, despite having a D. Pharm diploma is not keen on running an allopathic drug shop. He feels there is sufficient business in Ayurveda. His father's shop located in the nearby town continues to substantially depend on raw drug retail. His own shop is just six years old, and yet to establish a regular clientele base. A substantial part of his clientele comes from the local government dispensary. He supplements his business with the small manufacturer's agency. He is disadvantaged not only because he is located in an interior village, but also because he has to compete with the State's largest wholesale market located just 9 km away. But he makes good use of this opportunity and doubles up as a wholesale agent to doctors and small manufacturers, also value-adding by supplying pre-processed raw material²⁶⁰.

Commonly cited reasons for decline in retail consumption of raw drugs are: declining medicinal knowledge among consumers, the modern consumer's demand for ready-made medicine, decline of traditional practitioners, ignorance of raw drugs making modern practitioners rely excessively on standard formulations, commercial incentives to prescribe certain brands, and rise in the trend of doctors making medicines to corner additional profit. In Idukki district, the transition I observed between two visits in the interval of two years was phenomenal. In two small shops, the proportion of turnover from raw drugs to finished medicine had come down from 50-60% in Oct. 2008 to 20-30% in Nov. 2010. But during the same period, hardly any change was perceivable in Thrissur district²⁶¹ where even formally trained vaidyans continued to prescribe raw drugs. Even in the capital city Trivandrum, between 2008 and 2011, there was no decline in raw drug sales, and the shop-keepers were upbeat about the retail market. But in both these places, the erosion of retail customer base might have gone unnoticed because of rise in small scale wholesale consumption that has arisen with the proliferation of hospitals, therapy clinics and massage centers.

²⁶⁰ Usually nothing more than fine chopping/coarse grinding. He sources local plants like *Kurunthoti* through six regular pluckers, all in the age group of 60-70. They earn ₹ 150-200 (\$3-4) per day but this is not attractive to younger people, as wage labor fetches ₹ 350(\$7). He also cultivates some critical medicines that is in short supply in the market.

²⁶¹ considered the cultural capital of Kerala.

6.4 Factors that drive continuing consumption of raw drugs

Continuing consumption of raw drugs by Kerala consumers, despite the penetration of finished medicine in the ayurvedic market begs for explanation. Based on interactions with various respondents including raw-drug shop dealers, consumers and practitioners, five factors can be considered important in driving continuing consumption of raw drugs:

1. *Predominance of decoctions in the Kerala ayurvedic practice* (for detailed discussion, see 5.6, 5.7).

2. *Consumers' perception of home-made medicine as authentic*: Perceptions of authenticity of home-made medicine is perhaps the most significant of all reasons why people shop for raw drugs. When people buy raw ingredients of classical formulations, the cost is almost equal to or marginally lower than prepared formulations²⁶². A larger majority of consumers of raw-drugs are from the older generation, typically age 50 and above who share a traditional value for home-made medicine similar to many who swear-by home-made food. They do not trust the industry to use the right quality and quantity of ingredients. Typical response from such consumers is, 'When you buy raw-drugs, you are personally able to evaluate the quality of the raw material, and when you cook it at home, you are sure that the right procedure is followed'. There is someone at such households familiar with the skills of medicine cooking, and has the time and patience to devote to such a cumbersome task. This someone is almost always a woman; medicine cooking happens to be just an extension of the routine kitchen work involving the same processes of grinding, boiling, and cooking. Not surprisingly, ayurvedic manufacturers refer to their factories as extended kitchens. Though it is the woman who cooks the decoction, men usually buy raw material from the market, quite often traveling long distances in search of authentic sources. For example, one young gentleman was found traveling from Kuravilangad in Kottayam to Kaladi in Ernakulam (70 kms.) for purchasing raw drugs for postnatal care, clubbing a trip to visit a distant relative. Though there is no dearth of shops in his neighborhood, a reliable personal source had recommended the shop in Kaladi.

3. *Requirements for medicines that are not commonly manufactured*: The ayurvedic finished product portfolio is far smaller than the pharmacopeia. The largest of the manufacturers produces around 500

²⁶² For example, a seven-day dose of *Dhanwantaram Kashayam* costs ₹ 85 (\$1.7) whereas the raw drug mix for the same cost ₹ 80 (\$1.4). Note that the former does not include the cost of fuel and labor of cooking decoction at home.

formulations, the others make an average of 300-400. Ayurvedic texts consists of far larger number of formulations. The most commonly referred Ayurvedic recipe book in Kerala mentioned earlier, *Sahasrayogam*, literally means ‘thousand formulations’. Likewise different texts have different formulations, the total with all variations are put to around 75,000 (API 2008). Texts approved as official pharmacopeia by the Central Drug and Cosmetics Act are 56, there are also many local texts that are not approved and popular recipes that are not part of texts. Furthermore, industries produce standard formulations based on one particular text. Formulations vary between texts and the version preferred by the doctor might not be the one commonly available in the market. Furthermore, practitioners might also want to tweak an existing formulation to suit individual patients’ requirement.

4. Flexibility to manipulate formulations to meet budget constraints: Making medicine from raw-drugs is sometimes more economical than buying finished medicine because of greater flexibility in tailoring the formulation to the patient’s pocket. Even Charaka Samhita which is accused of being affluent-focused has mentioned ways to tailor the treatment to meet the needs of poorer patients (Valiathan 2003). Doctors in government dispensaries and those who practice in rural areas, tend to prescribe either all or at least part of their prescription in the form of raw drugs. A doctor in Ernakulum, while talking about the increasing expensiveness of ayurvedic medicine said that he always tried to tailor the medicine to the affordability of the patient. When asked about rising prices of medicines and impact of tourism selling on the lower income patients, he said,

The advantage of Ayurveda is that, if the doctor is sensitive and service-minded he can see to it that the medicine remains affordable to the poorest among the poor. This can be easily done by prescribing raw-drugs instead of finished medicine, and by using cheaper acceptable substitutes when raw drugs themselves become expensive.

In this context, many raw-drug shop keepers blamed modern degree holding doctors’ poor knowledge and over-reliance on standardized formulations for killing their market.

5. Resistance to commodification from the traditional-popular practice: An important category of raw drug consumption is devoted to what I term *traditional-popular medicines*. These lie in the boundary between medicine and food, and are widespread in the popular culture of Kerala, deeply rooted in household traditions. Their consumption is not necessarily mediated by the vaidyan. They are either based on oral traditions or on officially approved local texts (e.g., *Sahasrayogam*) or unapproved local

texts (e.g., Chikitsa Manjari). Consequently, this segment has been most resistant to commodification, and hence a critical contributor to the maintenance of retail raw drug business.

6.5 Traditional-popular formulations: Two examples

The most important in this category of consumption are *seasonal practices* and *special diets*. Important among the former are those followed in the season of *Karkidakam* (July-August), and among the latter, post-delivery care diets. Four popular diet routines during *Karkidakam* are *Karkidaka-Kanji* (medicinal rice-porridge), *Kozhi Marunnu* (Chicken-medicine), *Attin Marunnu* (Goat-medicine), *Pathila curry* (a vegetable curry made with 10 medicinal leaves). Besides this, there are several other routines that vary across regions and communities like various types of leaf-curries, and several types of medicinal rice. There are also a few that have no proper name, but are referred to as combination of *Angadi* (market)drugs. For instance, *Valiyangadi Kashayam* with 48 raw drug ingredients literally means, “big market drugs *kashayam*.” *Angadi 64*, is a combination of all significant 64 raw drugs mostly used for post-delivery care. Most such products are not found in the finished product market. Some are available but restricted to small local pharmacies with limited spread (e.g., *Attin Brath*, *Ulli Leahyam*). Some products, though commodified by large companies, are of recent origin, and are yet to displace the culture of home-making (e.g., *Tenginpookuladi*, *Ajamamsa Rasayanam*). They are almost an extension of regular cooking, and unlike medicine-making that is specialized and occasional, these have stayed fresh in people’s memories because they are seasonal routines. They are typically required in large quantities because they are consumed by entire households unlike medicine which is restricted to the afflicted few. The scale makes it more viable and more meaningful for home processing.

Traditional-popular formulations have helped keep the culture of medicine making alive in Kerala homes, contributing a large extent to keeping the retail raw drug segment alive and kicking. In the past decade, many small and medium manufacturers have begun to produce commodities to tap this market. Two case studies provide a glimpse into the transformation this market is undergoing. The first, commodification of the medicinal rice-gruel is an example of the emergence of new commodities in the segment, whereas the second case illustrates a conservative attitude of a typical farming family in Kerala that finds ways to resist such commodification.

6.5.1 When the month of famine becomes a month of profit

In recent years, the State has been aggressively promoting monsoon tourism as part of its Ayurveda tourism campaign. Monsoons in Kerala are among the harshest in the country bringing down around 300 cm precipitation in 3-4 months. But it is neither the charm of the monsoon nor the leanness of the season that is the motivating factor behind the campaign. *Karkidakam*, the peak monsoon season from July 15th to August 15th has a special significance in ayurvedic practice in Kerala. It is considered the right season for wellness treatment²⁶³ and also a season when people are expected to follow specific medicinal diet regimes.²⁶⁴ Different reasons are attributed for the ayurvedic significance of the season, all of them equally convincing. Firstly, since the season is considered to be the most conducive for the spread of infectious diseases and hence, naturally leading to emphasis on preventing health care practices²⁶⁵. Secondly, this is one of the most relaxing times during the year for people centered around a farming economy. After sowing rice, the fields are left to the care of the rain gods; the only chore left is occasional weeding. Torrential rains make any other activity impossible, therefore it is also a lean time for wage laborers. Thirdly, and most importantly, *karkidakam* is considered the “famine month” (*panja maasam*) during which period food grains from the previous harvest would be depleted and tuber crops hardly available. For the working class, lack of wage labor worsens the food security situation. Some suggest it is this food-paucity situation that has led to the development of diverse food diet prescriptions, many of which include rare resources, mainly those collected from forests and uncultivated commons.²⁶⁶ All these reasons must have together contributed to the emphasis on Ayurveda in the *karkidakam* season. Some of these conditions might have become irrelevant in today’s lifestyle that is unaffected by seasonal contingencies of a subsistence agrarian economy. But the cultural practices stay and provide an avenue for new commodities to emerge. It is ironical that the medicine-cum-diet regime created for the *famine month* has led to a boom time for Ayurveda business. Raw drug store keepers say that monsoon time was historically a peak time for their business.

²⁶³ *Sukha Chikitsa*, *Sukha*=well-being/pleasure, *Chikitsa*=treatment.

²⁶⁴ The classics of Ayurveda do not mention a particular season for wellness treatment.

²⁶⁵ The disease-proneness of this tropical rain-forest region is probably high during this period, the combination of summer heat and humidity providing a breeding ground for infectious diseases.

²⁶⁶ It is also interesting to note that their Tulu speaking neighbors across the border who share the same ecological biome, attribute similar significance to this month, prescribing diverse nutritional practices and medicinal regimes.

Today, there are many other stakeholders rushing to cash in on the increased affordability of the expanded middle class combined with the decline of traditional household knowledge and skills.

Among the many dietary practices adapted during this month, one that has remained in the household realm is the consumption of *marunnu kanji* or *oushadha-kanji*. *Marunnu* in Malayalam and *oushadha* in Sanskrit both mean medicine; *Kanji* means rice gruel. The Production Manager of the State-owned Oushadhi claim it was they who first introduced a ready-made kit. Within three years after the introduction, that is in 2007, 40 different brands had entered the market. The sales had gone up from ₹ 50 mn (\$0.1 mn) in 2006 to ₹ 55 mn (\$1.1 mn) in 2007. In 2006 An estimated 500,000 kits were sold. In the same year, manufacturers and hospitals estimate a total business of ₹ 500 mn (\$10 mn), including the cost of in-patient treatment. This is almost 1/5th to 1/6th of the total annual market turnover in Kerala (Anoop 2006). In 2010, the monthly turnover of the kits has risen to ₹ 200 mn (\$4 mn) (Ajayan 2010).

A typical kit contains medicines with or without rice for a week's or fortnight's consumption. The contents are typically in the raw form, with each ingredient separately packed in individual packets. The number of medicines vary, but most kits include around 20 odd herbs. The price ranges from ₹ 30 (\$0.6) to ₹ 100 (\$2) based on brand and composition. High-end packets include the medicinal rice *njavara* (one of the index plants). A variety of sellers have entered the fray. Almost all large and medium ayurvedic companies have their own versions. Branded rice sellers have found it a great opportunity to value add to their product. Small scale food producers, self help groups and rural co-operatives have also added the item to their product list. Unlike finished medicine, the kit provides people with ready ingredients to be made at home. The time and hassle of purchasing and measuring each ingredient is saved and for those without traditional know-how it solves the pain point of figuring out the right recipe. Recently, a medium scale Ayurveda manufacturer Pankajakasthuri took the medicinal gruel to the next level of commodification with ready-



Karkidaka Kanji Kit with rice

to-eat kits packed in aseptic pouches.

Expansion of the commodity market for the medicinal gruel does not necessarily mean decline in consumption of raw drugs. Among those who buy such commodities are those who had long stopped following the seasonal routine. There is a large section of population which is short of knowledge or/and time, but are eager to maintain traditional cultural practices and can afford to buy such commodities. *Sheela*, a 40 year old a bank employee from suburban Cochin said she could not afford the time to make this from scratch. “Of course, if I wanted to make it I could have always ask others for the recipe. But the problem is that the process is so time consuming. One doesn’t even have time to cook normal food these days. I was very happy when I saw the *Karkidaka Kanji* kit in the market”. The Nair family from rural Thrissur on the other hand is totally against the idea of buying the kit. Mrs. Nair asked, “Why pay the companies when you know how to make it anyway? Such things are either for lazy people or for those who are so rich that they don’t mind throwing away money.”

Medicinal porridge has begun to appear both in commodity and non-commodity form in many other ways. In suburban Kochi, an ayurvedic agency owner had erected a large banner announcing he would deliver *Karkidaka Kanji* and *Pathila curry* (a vegetable side dish made with 10 medicinal leaves) on order²⁶⁷. In suburban Thrissur, a push cart vendor was found selling two other seasonal diet preparations²⁶⁸. By virtue of being in the category of food, such products have also begun to appear in some restaurant menus during he season. The medicinal gruel also circulates outside the commodity realm. Recently, the PTA of an elementary school in Northern Kerala decided to serve the gruel to students, to “save a traditional practice from extinction... in this era of fast food and tin food culture” (Asianet Television 2012).



*Medicinal porridge served at the Oushadhi Panchakarma Hospital canteen.
Photo: K.C. Sowmish (The Hindu news report)*

²⁶⁷ The charges were nominal, meant to cover just the expense of material and labor. He claimed that this was a goodwill gesture to promote the cultural practice. This was his first attempt, he had got only 50 orders and was hopeful of adding more customers in the future. He also offered free consultation and medicines at concession rates during this period, for which he had to spend some money from his pocket. He spent about ₹ 20,000 (\$400) for medicine and doctor’s fees, but earned the good will of about 500 customers which he expected to provide long-term returns.

²⁶⁸ *Kozhimarunnu* = medicated chicken curry. *Attinmarunnu* = medicated mutton (goat) curry.

It has become a trend among some Hindu temples in Kerala (The Hindu 2012) to offer medicinal gruel twice or thrice a week during the season. This is not surprising given the historical connection between medicines and temples in Kerala. Firstly, while temples for the Hindu medicine god Dhanwantari is unheard of in the rest of the country, in Kerala there are four major Dhanwantari Temples. Secondly, many temples in Kerala offer medicine to devotees as *prasadam* (consecrated offering for devotees' consumption)²⁶⁹. Murali (2005) mentions that two of the temples also had *vaidyashalas* (pharmacies).

A media report (Hindu 2008) carried a complaint from the General Secretary of the Kerala Ayurveda Labor Union that “image of Ayurveda” was being misused for unbridled commercialization of the traditional gruel. Pointing out that the gruel originated as an alternative diet for the poor during the famine month, he complained that it has now become a ‘fashionable health diet’, sold at exorbitant prices. He complained there were too many companies coming out with porridge kits, the ingredients were not always listed. His complaint to the Kerala Ayurvedic Drugs Control Department was ineffective as there was no regulation to check the proliferation of such products. This is because commodities like *Karkidaka Kanji* fall in the grey boundaries between food and medicine. Differential tax for ayurvedic medicines (4% compared to 12.5% on food products and cosmetics) is an issue that quite often drags the question on the meaning and categories of food and medicine into the legal realm. Ironically, *Oushadhi*, the ayurvedic manufacturer which introduced the concept into the market was the first to feel the brunt of this vagueness. Though the product was a runaway success, the company, despite being state-owned, got caught in a legal bind; the revenue department considered *Karkidaka Kanji* a food item, and slapped extra tax with retrospective penalty²⁷⁰.

6.5.2 Borrowing skill from the factory to cook medicine at home

Elisa, the pregnant daughter of Mr. and Mrs. *Jacob*, a farmer's family in Central Kerala, had come home for delivery. In Kerala, like in many other parts of India delivery care of daughters is considered a right and responsibility of her parents. The expecting daughter is ceremoniously invited to

²⁶⁹ For example, Thakazhi temple gives medicinal oil, Thiruvizha temple in Aleppy gives medicine for mental problems and Sri Krishna temple in Kaladi stomach related problems. Two other temples, Maruthorvattom in Aleppy and Nelluvaya, Thrissur, gives *Mukkudi* (a special combination of herbs) to treat stomach problems; both have legends that connect them to *Ashtavaidyans*.

²⁷⁰ As told by the Marketing Manager of Oushadhi.

her parental home on the seventh or eighth month of pregnancy. During this period, much emphasis is laid on nutritious food; in some regions consumption of various medicinal herbs are recommended. The greatest emphasis however is on post-delivery care that besides oil massage and bath includes consumption of a variety of medicines. Among the various medicine-diet practices, post-delivery care is one of the most colorful both because of its complexity and the mood of celebration that surrounds the household that is engaged in the process. Though it is managed almost totally by the women of the household, men participate in procuring raw material and also labor, if pre-processing is done at home²⁷¹. A typical protocol in central Kerala consists of seven medications²⁷² of which two are readily available classical decoctions part of the mainstream ayurvedic pharmacopeia.

Two others, the medicated goat-jam and coconut-inflorescence jams were not in the market until recently. Since it has been popularized by Kandamkulathy Vaidyasala, a manufacturer based in central Kerala, a few small and medium sized companies have added them to their product portfolio. Onion jam and medicated goat broth are occasionally seen in regionally restricted circulation, made by enterprising small local pharmacies. Such formulations do not figure in the official pharmacopeia, and are therefore registered as proprietary medicines, despite being based on traditional knowledge. These are still part of widespread household practice, but more and more households are lacking in the knowledge and skill of making them.



Full page ad for a post-delivery maternal care medicine, Attinbrath (medicated goat broth) in a popular Malayalam health care magazine

²⁷¹ There are minor regional and community variations in the protocols followed, but overall similarities cut-across these differences. Typically post partum care begins from the end of the first week after delivery lasting for two more months. Since Elisa had a caesarian section, they had to wait for a month to begin associated internal medicine.

²⁷² The new mother has to first consume a combination of two classical restorative vines, *Dashamoola Jeerakarishtam* for 5-7 days. A medicinal jam made from ginger and onion, *Ulli Leahyam* aimed at shrinking the stomach flab, is also consumed during this time. Following this *Dhanwantaram Kashayam*, is consumed for a week. The next in line is a jam-like preparation made of medicated goat meat called *Ajamamsa Rasayana*, which is consumed for a month. This can also take a simpler form as *Attin Brath* (Goat Broth). And then, the first medicine is repeated for a week, following which *Idimarunnu*, another medicine is consumed for a week. The final touch to this elaborate medicinal ritual is *Thenginpookoladi Rasayanam* (jam with coconut-florescence as the main ingredient), which is consumed for a month or two.

Elisa's parents wanted to make at home everything except the fermented preparations. But the medicated goat-meat jam (*Ajamamsa Rasayanam*) was complex. Given its importance as a restorative medicine, they did not want to buy it from the market. Though usually it is the women of the household who took the lead, in this case due to his wife's delicate health condition Mr. *Jacob* had to organize everything. He said, "If my mother was around she would have known how to make. An option is to consult a traditional vaidyan, but then we still have to make the whole thing. It is not enough to have the recipe. Unless you have experience making these kind of things, it is not easy." So they found an idea middle ground; they hired a foreman from a nearby medium scale Ayurveda manufacturing company, to cook the medicine at home. *Jacob* went hunting for the items that the ayurvedic cook asked him to buy. First, he had to buy a goat that weighed around 5-6 kilograms. To buy the raw drugs, he went to the wholesale shop in a neighboring town as he did not have much faith in local retailers. But the shop-keeper tried to push powdered raw drugs. *Jacob* did not fall for it, though he justifies the shop-keeper's behavior as being motivated by the desire to cut down on the labor of cutting and packing each ingredient. Together the material cost him ₹ 400 (\$8). He hired a farm hand to chop the *koovalam* root and crush into smaller bits with a heavy iron pound. She took a whole working day for the job, and had to be paid ₹ 150 (\$3). The next step was to get the rest of the 20 raw drugs crushed into fine pieces. Formerly they would have had to manually chop them into small pieces and crush them using a wooden pound. Now the electric dry grinder does the job. When quantities are large, the job is outsourced to flour mills that specialize in medicine disintegrating and grinding²⁷³.

The first step in the preparation of the formulation is to process the goat meat to produce broth²⁷⁴. Once the broth is prepared, the expert takes over. He adds jaggery, honey and ghee to the broth, and constantly stirs the mix on low fire for about 6-7 hrs till it reaches the right consistency. And then, powdered raw drugs are stirred in and the dish is kept away to cool. Only a seasoned hand can identify the right consistency. If the product gets under-cooked it will putrefy fast, if it is overcooked it will become hard and inedible. The rightly cured end product can have a year's shelf life

²⁷³ Since early 90s, beginning with the introduction of the mechanic pulverizer. Mills that typically grind flour and *Masalas* in this region, sport a signage on their boards announcing 'medicines will be disintegrated and ground here.'

²⁷⁴ Typically this involves boiling the meat in water and then simmering it on moderate fire to reduce the water to an eighth of the original quantity, an activity that takes 3-4 days. These days one can also hire machines to extract broth.

without refrigeration. The expert and his helper were paid ₹ 500 (\$10) and some drinks for their trouble. The end product, *Ajamamsa Rasayana* (medicated goat-meat jam) was around 8-9 bottles (4-4.5 kilograms) all of which would be fed to the delivered girl within 3-4 months after delivery. His face radiated with satisfaction as he narrated the story,

I am very happy with the product since all the raw material has undergone my scrutiny. The shops put a lot of jaggery and save on the meat. I am not very sure of their raw material quality. The guys from the raw drug shop also told me that it is best to make this at home, so that nothing would be compromised, after all this is a very important medicine.

The material and labor that went into making of the medicine together cost him around ₹ 5000. This being a classical ayurvedic product, would have been available at half the cost in the market (₹ 500(\$10)/kg). *Jacob* considers this as a definite indicator of the branded product's poor quality. But he fails to take into account economies of scale. The price *Jacob* paid for his raw drugs is likely to be two to four times higher than what the pharmacy pays for bulk purchase²⁷⁵. But at the same time, the superiority of personally supervised homemade product is undeniable, not to mention the additional fizz it adds to a celebrative atmosphere. In planning and engaging in this activity, the family is producing much more than medicine. The medicinal food certainly has a nutritional value, but the process of making and consuming it has an equally strong ritualistic and symbolic value. Home-made medicine emphasizes the centrality of 'home' as a site of authentic consumption and also expresses parents' love and care for daughters who have left their home. This is comparable to the construction of meanings and identity of home-made food.

Homemade has some singular qualities absent in market-made products... some of these imperfections of homemade food mark its singular quality in relation to the homogenizing, serial quality of market-made food. Hence, while the capitalist system appropriates food products and makes them into mass commodities, the production processes result in a loss of domestic meanings. The love of family associated with homemade signifies an opposition to the commercial, instrumental interests of the market (Moisio et al 2004: 368).

²⁷⁵ Customers buy mostly in traditional weights (5-60 gm.). Given the number of ingredients that go into a single medicine, it is hard to track the per kilo price.

6.6 Conclusion

Being a key node of traditional ayurvedic consumption, the raw drug shop provides a glimpse into the pre-industrial culture of ayurvedic practice. Sujatha (2007) writes that the raw drug store keeper in Tamil Nadu is a vaidyan or a person knowledgeable about medicinal substances and their properties; the store is a meeting-point for folk, professional practitioners and the common people, a site of consultations and exchange of information. This would be true of the raw drug shop node across India, except that in Kerala it is diffused across urban and rural regions, catering to end consumers unlike other regions where they are concentrated in urban centers and focused on practitioners. Though the role of the raw drug shop has been on the decline since industrialized production of medicine, it still cannot be written off as irrelevant in the Kerala ayurvedic milieu. It not only continues to hold ground, but is flourishing in regions like Thrissur and Trivandrum. Raw drug shops today rely heavily on two classes of consumption: home processing of classical medicine and traditional-popular medicine. With the former being increasingly displaced with finished medicine, the latter remains the mainstay. Though new commodities like the packaged medicinal rice kits are rushing in to occupy this space, they are not yet able to displace household level practices. Resistance to finished commodities is still vibrant as illustrated by *Jacob's* family which went to great lengths to undertake the laborious process of cooking post-delivery medicine at home. Though there is a positive correlation between the decline of raw drug consumption and the progress of finished medicine, rather than one causing the other, both appear to be linked to other factors. I have identified the most important contributors to decline as being, on one hand, the gradual replacing of traditionally trained practitioners by institutionally trained practitioners, and on the other, the reluctance of the urban consumer to devote time and labor to cooking medicine. Of various factors that continue to drive consumption of raw drugs, consumers' perception of home made medicine as authentic may not last for long, but tailoring medicine to suit one's pocket is a requirement that is likely to have continued relevance, especially for lower income families. Another most important factor that would determine the continuity of raw drug consumption is prescription practices of ayurvedic practitioners, which in turn is linked into several other factors as already discussed in chapter 4.

CH7 ALIENATION AND DESKILLING IN THE SUPPLY CHAIN

Alienation induced by industrial commodification has adverse affects on both ends of the supply chain - the product and the resource base, in addition to affecting those involved in the transaction. In the Global Ayurveda Festival in Kerala in early 2012, the secretary of ayurvedic Manufacturers' Association of India stated that availability, price and quality of raw drugs were the biggest problems plaguing the ayurvedic industry today. Aspersions are often cast on the product quality of ayurvedic medicines alleging widespread adulteration and substitution (for example, Dubey et al 2004). This is linked to unsustainable collection and overexploitation of resources. An estimated 81% of the species used in the Indian medical systems are collected from the wild (Ved and Goraya 2007). This has raised conservation concerns²⁷⁶ that led to the formulation of policy guidelines for medicinal plant collection and farming in 2009²⁷⁷. Another angle of concern is the exploitation of medicinal plant collectors by middlemen. In the national context the collectors' share is found to be lower than 33% (Subrat et al 2002). In Kerala too, there is allegation of similar exploitation (e.g., Harilal 2008, Menon 2003), but studies show that collectors get a fair share of the wholesale price, i.e., 42-55% (Sasidharan and Muraleedharan 2009) and 15-50% (Abraham 2003).

The chapter begins with a brief overview of the upstream supply chain in Section 7.1. Section 7.2 discusses the consequence of increased distance between raw material source and production. Index plant *koovalam* provides insight into issues that affect large scale production (Section 7.2.1) and also showcases small manufacturers' attempt to use their knowledge to get access to genuine raw material (Section 7.2.2). The 'morally ambiguous aura' caused by large scale production is conducive to "myth-making" (Appadurai 1986); the resultant information asymmetry creates room for rumors regarding the quality of factory produced medicines (Section 7.2.3). Index herb *kurunthoti* provides a glimpse into problems that arise from confusion in plant identities, especially in the context of mass production (Section 7.2.4). It also shows the knowledge-intensive role of large fresh herb traders and

²⁷⁶ 86 medicinal plant species from Kerala find mention in the national Red List, 50 of which are endemic and also have a global Red List status (FRLHT 2011). According to the Kerala State Medicinal Plant Board, only 22 in Kerala are endangered.

²⁷⁷ Good Agricultural Practices (GAP) and Good Agriculture and Field Collection Practices (GACP) based on 2003 WHO guidelines adapted by National Medicinal Plant Board and AYUSH, as of now, meant for self-certification.

their influence in the construction of raw material identity.

Significance of people's stake in promoting conservation is well acknowledged both by those who argue for privatization of resource and those who defend common property regimes. The former hold that commonly held resources are vulnerable to overexploitation (e.g., Andreoni 1988). Three decades of work instigated by Hardin's (1968) infamous paper showed that much of the commons were wrongly assumed to be open access; they were governed by collective cultural regulatory mechanisms that came to be known as 'common property regimes' (McCay and Acheson 1990, Vellan and Ostrom 2010). To understand the problem of overexploitation of medicinal plant resources, it is important to understand the status of cultural control over collectively held property.

It is useful to differentiate between stakes people hold in medicinal plant resources as 'cultural' and 'economic' though there is some overlap between them. I refer to "cultural stake" as that which derives from the meaning a plant holds in people's lives with respect to its various cultural uses including religious, food and health care. "Economic stake" derives from the value of the medicinal plant as a market commodity disengaged from its use value. I argue that cultural stakes are central to the conservation of medicinal plants in both forest and non-forest regions, though the stakes involved and sources of alienation are different. Distancing of people from these cultural stakes has made room for overexploitation. In the forest region, alienation of people from forest resources and decline of *Vamsheeya Vaidyam* (tribal medical systems) and in the non-forest region, decline of traditional vaidyans, and home level processing of classical medicines are proximate causes. These are in turn influenced by macro-socioeconomic factors like urbanization, change in occupational and land use pattern, and so on. Collectors having economic stake in resources per se is not conducive to conservation unless the stake is long-term, which is possible only if the property be controlled by a finite community. In the forest a certain degree of exclusivity has been created by restricting collection rights to Scheduled Tribe co-operative societies, which ensures fair prices to collectors and forces traders to pay better prices. But their inability to gear up to a competitive market situation makes room for illegal exploitation. In section 7.3.1, examples of two successful societies show that the mechanism can be effective given captive labor and dynamic leadership.

Discussion in sections 7.3.2-7.3.4 illustrates the superiority of cultural stakes over economic stakes. The Kani-CSIR benefit-sharing model, an internationally acclaimed model initiated by scientists from CSIR (Council for Scientific and Industrial Research) to commodify exclusive tribal knowledge is compared to a participatory training cum certification program for tribal healers. The success of the latter shows that combining cultural and economic stakes creates internal incentives that ensure long term sustainability. Ethnobotanical approach on the other hand, relies on an external revenue model that has an additional disadvantage of being potentially conflict-generating.

Non-forest commons are devoid of coherent common property regimes and hence inherently vulnerable to overexploitation. But some extent of cultural regulation was present in the form of traditional rules of harvesting that are flouted in the industrial production era (as discussed in section 7.2.1). In section 7.5.1, index plant *kurunthoti* illustrates conditions that can promote or hinder the development of long-term economic stakes. Farmed medicinal plants constitute an insignificant part of the supply chain, but much attention has been heaped on this segment in the past decade. Section 7.6.1 describes factors that contribute to making medicinal plant farming unviable in Kerala. Section 7.6.2 provides a brief account on three major types of farmers. Farming in the forest has different set of constraints and potentials which is described in Section 7.6.3, further illustrated by the ethnography of the index herb *kattupadavalam*. Ethnographic evidence in Section 7.6.2 shows that variability of material and complexity of ayurvedic medicine production are factors that inhibit direct connection between ayurvedic industries and collectors/farmers. The newly initiated ayurvedic industrial cluster, the Confederation for Ayurvedic Renaissance (CARE Keralam), promises to build a bridge between manufacturers and suppliers (See Section 7.7).

7.1 Upstream supply chain: An overview

According to a recent extensive survey of consumption of medicinal plant use (Sasidharan and Muraleedharan 2009), 400 species are regularly used by the ayurvedic industry in Kerala²⁷⁸. Of these, 230 are used in quantities above 1000 kg. annually. Ayurvedic plant material is classified into *dry raw*

²⁷⁸ Of the total 6000 plants identified as medicinal value, 2400 are used by various ISMs, of which Ayurveda uses 66% i.e., 1587 plants. Of the 960 medicinal plants found in trade, 72% (688) are used by the Ayurvedic system. Of the 491 that used in the 188 surveyed herbal industries, 117 were consumed in quantities over 100 MTs ((Ved and Goraya, 2007).

drugs (petti marunnu) and fresh herbs (pacha/pari marunnu). The estimated contribution of each is almost equal in value²⁷⁹. The dry raw drug market is mainly centered around non-local commodities and is concentrated in the wholesale markets. There are 6 major, 21 medium and 37 minor markets spread across the country (Subrat e al 2002). In Kerala, there are major raw drug markets in Thrissur and Cochin and minor markets in Kottayam, Kozhikode, Badagara and Trivandrum.



Raw Drug Market

Between the medicinal plant gatherers and the industry there is a chain of agents, beginning from small aggregators to large wholesalers. Manufacturers source non-local dry raw drugs either from the wholesale markets in Thrissur or through agents who source material from other raw drug markets in India or through commission agents who have direct access to the point of origin²⁸⁰. Traders can be classified into two: dry and fresh herb traders, though some combine both. The former aggregate material from across the country; the component of local material in their trade is minor. They are rarely connected directly to the point of origin of the herb. The major markets are dominated by 4-6 large dry raw drug traders who have been in business for several generations.

Fresh herb suppliers are a specialized set of actors who are much more than traders; they are closely connected both to the source and production. There are around 20-24 large fresh herb traders in the Kerala market. Many of them have personal relationships with manufacturers that go back to the beginnings of industrial era. For established manufacturers, trust in such relationships continues to be the most important modulator of raw material quality. Given their perishable nature, fresh herbs come to Kerala mostly through a local supply chain that includes Kerala and immediate neighboring states, mainly Tamil Nadu. The major fresh herb gateway from the neighboring State Tamil Nadu is Kozhinjampara (in Velanthavalam) in Palakkad district.

²⁷⁹ Typically, non-local items are high priced and used in low quantum; the local are low-priced, used in large quantities.

²⁸⁰ One manufacturer sourced the bark of *Saraca asoka* from Bengal and the root of *Salacia reticulata* from North Karnataka. Oushadhi, the State owned company often sources material through Forest Departments of other states.

Based on source, the local supply chain can be classified into two: *forest produce supply chain* and *non-forest produce supply chain*. The forest belt that accounts for 29% of Kerala's land area, stretches from Trivandrum in the South to Wayanad in the North along the Western Ghats, traversing through six Eastern districts. As per the regulations of the Kerala State, collection of forest produce is the exclusive monopoly of members of Scheduled Tribe



Unloading fresh herbs from the truck

communities. The SCST Federation (Schedule Caste and Scheduled Tribes Federation), a State level co-operative organization, with its 4 branches and 36 affiliated co-operative societies (Girijan Service Co-operative Societies, GSCS) is the nodal agency for collection of Minor Forest Produce (MFP) from the forests of Kerala. The Kani community in Southern Kerala also participates in a direct market in Kottur (*Kani Chantha*) twice a week. Most of the forest collection is dried and stored in the four branch depots and annually auctioned to manufacturers and traders through the Federation. Fresh herbs required in large quantities are directly supplied to manufacturers on order (e.g., *karimkurunji* (*Nilgirianthus ciliatus*)). Some enter the raw drug wholesale market legally through auctions or illegally through middlemen. A single herb might enter both dry and fresh commodity chains, depending on whether the use is local or nonlocal, immediate or long term (e.g., *kurunthoti roots*). Perishable fresh herbs from Kerala or neighboring states like Tamil Nadu are consumed directly (e.g., *brahmi*). Typically, production in companies follows a routine annual plan made to suite material availability, especially fresh herbs with seasonal constraints. Production of decoctions and oils that require bulk fresh herbs are arranged during monsoon and post monsoon when they are available in plenty. The fresh herb season starts in June after the monsoon arrives and stretches up to mid March, the peak season being July-September.

Non-forest supply chain obtains medicinal raw material from commons and homegardens that are source to around 80-100 of the around 400 species in use. In terms of value, they account to nearly

50% of the resource used by the industry²⁸¹. There is some amount of overlap between forest and non-forest sources (e.g., wild brinjal varieties like *puthari chunda*). Non-forest supply chain also includes an insignificant portion of farmed herbs, less than 8% according to Sasidharan and Muraleedharan (2009). These enter the market mainly through fresh herb traders and hill produce (*malancharakku*) traders. According to manufacturers' estimate 5-15% of material is bought directly from households including gatherers and cultivators. Sasidharan and Muraleedharan (2009) give a species-wise break up for the 230 most heavily used species in the Kerala ayurvedic industry as follows: 92 from forest; 34 from non-forest areas; 40 sourced from both forest and non-forest; 10 sourced from cultivation; and 30 items were from outside Kerala, mostly North India.

The knowledge base of fresh herb suppliers is far more complex than dry drug traders, because of their connection to the source, perishability of material and complexity of ayurvedic medicine production schedules. The domains of knowledge that concerns this node include knowledge of identity of herbs, quality, availability and location, knowledge of the market and skills of negotiation, skills in strategizing and organizing collection according to complicated production schedules. A typical large fresh herb trader collects around 200 different kinds of material of around 100 plant species and they have to identify different parts of the plant, in both fresh and dry condition, the locality they grow in, and various conditions of maturity in the wild. With the decline of professional collectors, such knowledge is now concentrated only with aggregators.

7.2 Implications for Production

The crisis in quality arose in the exigencies of mass production that led to increasing distance from the source of raw material. In the golden jubilee souvenir of the AVS, a vaidyan writes about "ayurvedic 'doctors' emerging from modern courses who get infuriated if addressed as Vaidya...Many of these ayurveda doctors don't identify medicinal plants - they say it is the duty of pluckers. If they don't know how will they make medicine in pharmacies?" (Nair 1954:42). *Ali*, a fresh herb collector-aggregator says that when he began collecting herbs in his early teens (early 1950s) he had to struggle

²⁸¹ Estimate based on accounts of 3 of the largest manufacturers in Kerala. According to Sasidharan and Muraleedharan (2009), the fresh herb category accounts for 51.4%, entirely met by supply from Kerala and Tamil Nadu.

to acquire the knowledge of herb identification; the knowledge of medicine making vaidyans in *vaidyashalas* was superficial. He picked up all his knowledge and skills from an elderly woman who agreed to let him tag along with her on her medicinal plant collection trips.

A century of pre-industrial artisanal production²⁸² seemed to have already had its toll by the beginning of industrialization as evident from the founding day address of AVS in 1902.

We have reached a stage where it is generally only those who work for daily wages who now gather, stock, sell, buy, process and use these raw materials, mainly herbs....Apart from this, because of a growing lack of familiarity with them, innumerable medicinal plants and roots have now become impossible to identify....Since outsiders to the system are thus being given total responsibility and vaidyans themselves refuse to take any....vaidyans themselves are in the process of losing all acquaintance with the medicines they prescribe.(Krishnankutty 2001:49).

Industrialization led to greater concentration of production and as the scale increased, so did the physical distance from the production center²⁸³. But in the early era of industrialization herb collectors were closely linked with manufacturers in a one to one relationship, many of the old timers have continued to depend on these long-term ties. AVS, since its inception has been faithful to 40 families who meet all their fresh herb requirement and also handle complex inventory management, i.e. providing combinations of fresh ingredients tailored for individual formulations. Large pharmacies like Vaidyaratnam, AVP, Oushadhi, KAL continue to have one to one relationship with a few old generation collectors. However, all these collectors including the families supplying to AVS have evolved with the industry to become large scale aggregators who employ daily wagers to do the collection. Many have organized themselves as medicinal collectors' societies. There are very few household level individual collectors left except in regions with high concentration of ayurvedic industries (e.g., suburbs of Thrissur). Due to unavailability of regular gatherers, most companies rely for their fresh herb supply on commission agents who have the capacity to organize labor for large scale collection.

Increased distance between collectors and medicine makers is alleged to be leading to overexploitation of the former by middlemen. But research findings on price spread, as mentioned in the introduction above, are inconsistent, This could be either due to variation in the nature of raw

²⁸² Harilal (2008) divides Ayurvedic production phase in Kerala into three phases: up to 1830s - service dominated production; 1830s-1880s - period of petty commodity production, and 1880s-1920 - shift from service to industry.

²⁸³ Locally sourced herbs like *brahmi* and *koovalam* are increasingly sourced from neighboring states Tamil Nadu.

material²⁸⁴ or failure to account for fresh Vs dry and temporal price variations, and wastage component in calculating traders' margins. Besides these, an inherent expectation of marginalization of medicinal plant collectors, appears to be leading to selective bias. For example, Menon (2003) and Harilal (2008) have alleged overexploitation of collectors based on retail raw drug margins instead of wholesalers' prices²⁸⁵, ignoring the narrow margins between wholesaler's purchase and selling prices²⁸⁶. Traders get much attention as ruthless exploiters who eat into production margins and shortchange the already marginalized plant collectors, but their role as knowledge mediators is almost always ignored. Though the industry complains of losing a large chunk of margin to them, it is at the same time highly dependent on their knowledge and skill sets.²⁸⁷ Some manufacturers also depend on them to provide aggregated material tailored for individual formulations. This dependence on knowledge-intensive and reliable services provided by traders combined with long-term trust based relationships makes the industry reluctant to accept raw material directly from collectors and farmers.

7.2.1 *Koovalam*: the icon of Industry's profligacy

Madhavan vaidyan, a 70 year old traditional practitioner from Idukki district, gets worked up whenever he talks about the quality of raw material used by ayurvedic manufacturers.

When I was trained in medicine by my uncle, we were expected to follow strict rules in harvesting medicinal plants. For *koovalam*, the rule was that the bark of the root which goes to north to be harvested without the aid of any iron (metal) tools, before sunrise, without clothes, after bath. This was probably to restrict overharvesting. Of course, we were not following all the rules, it was not practical, but we cut only northerly roots because medicinal properties are supposed to be greater in them. We are vaidyans, and unlike medicine making industries, we want the best quality medicine. It is only if we are able to cure that we can build trust in our patients, on which our livelihood depends. But nowadays medicine makers do not follow such rules, that is why you will not get quality medicine. Forget northerly root barks, industries no more use even roots, first they switched to heartwood, and now they use any part of the wood they lay hands on.

²⁸⁴ in terms of rarity, habitat, demand, perishability, and so on. For example, unlike an abundant herb like *kurunthoti* that is collected in large scale, rare herbs are affected by information asymmetry and are more conducive to overexploitation.

²⁸⁵ Retail raw drug market is a different offshoot of the chain whose prices are affected by different set of conditions.

²⁸⁶ Menon's study of price spread for 79 non-forest and 19 forest plants shows that the wholesaler's profit margins are narrow and the collector is given a fair share of the selling price, but when retail raw drug shop are included, margin spread goes up to 500%.

²⁸⁷ Veteran local researchers have not been able to make much headway with this set of actors. While their secretiveness is the main cause, their inaccessibility to researchers gets compounded by the prejudiced perception of them as 'exploiters.' Economists and forestry researchers tend to be interested in sensitive and closely guarded information like prices and sources of material. The dubious legality of sources further complicates matters. While these are issues to be investigated, there is also a need for ethnographic attention that goes beyond issues of legality and exploitation. There is a wealth of knowledge and information hidden among actors at this node that can give insights into a variety of issues critical to both raw drug quality control and natural resource conservation. A few interactions, though brief, has led me to believe that long-term interaction based on trust and respect with appreciation to their knowledge and role they play, can provide access to this enigmatic set of actors. Given their centrality in the supply chain, such knowledge could be used to make them co-participants in conservation, with a combination of incentives, sensitization and regulation.

He said this with a resigned gesture of hand, and a note of despair in his words. *Koovalam* (*Aegle marmelos*, family Rutaceae; *bilva* in Sanskrit), is a medium sized (up to 10 m. in height) thorny tree with tiny leaves and large apple sized fruits most commonly found in temple premises. It is native to India, grows wild in Sub-Himalayan tracts from Jhelum eastwards to West Bengal, in Central and South India. Its cultural significance surpasses its importance in the pharmacopeia. In fact, there is far less popular awareness of its medicinal properties compared to its religious significance²⁸⁸. Various parts of the tree including the fruit, root and the stem bark enter into the making of 70 odd classical ayurvedic preparations. The most important part is the root. *Bilva* belongs to an important class of ayurvedic drugs called *Dashamoola* (“ten roots”).²⁸⁹ It is an ingredient of some of the most popular ayurvedic medicines like *Dashamoolarishtam*, *Vilwadi Guliga* and *Chyawanaprash*. There is no better ayurvedic drug than *koovalam* to bring forth vaidyans’ ire on industrial production. Large scale extraction of this tree root over the years resulting in scarcity has driven the industry to using heart wood in place of the root or stem bark, a fact that manufacturers openly admit²⁹⁰. Though this is considered acceptable by the industry, vaidyans are apprehensive. Not only practitioners, regular raw drug consumers in Kerala are concerned²⁹¹. The Indian Pharmacopea lists the fruit, root and stem bark as different drugs with variation in pharmacological properties between one part and another (See Appendix F), a distinction which is also supported by pharmacological findings (API 2008).

7.2.2 Exclusive paths of circulation

Manufacturers buy *koovalam* from two sources, from the raw drug market directly or through local raw drug agents who procure it from major markets in North India. One of the biggest local markets for *koovalam* (and other fresh herbs) is the market in Kozhinjampara, a sleepy little village in the Palakkad pass in the eastern border of Kerala. The raw drug market is so secretive that very few in the local market were aware of its whereabouts. The trade happens surreptitiously by the side of the

²⁸⁸ Its leaves are considered a favorite of the Hindu god Shiva. In Buddhism, it is a representative to the eight fold principle for right action. As per astrological tradition each, *koovalam* represents the constellation of *Chithira*.

²⁸⁹ People in their 50s and plus can list *Dashamoolas* with ease because many had gone to indigenous pre-schools run by the Kalari master. *Enchuvadi*, the native multiplication table which was in vogue in the traditional preschool system also provided such facts to memorize that were later found in print as ready reckoner booklets.

²⁹⁰ One large manufacturer followed the convention of using double the quantity of wood in the place of root.

²⁹¹ For example, *Jacob* needed *koovalam* to make post-delivery medicine (see Section 6.5.2) knew that raw drug stores mostly sell heartwood, so he located a tree in the neighborhood in the event of unavailability in the market.

state highway, in the truck stand. There are neither shops nor carts to house the material. Bundles of *koovalam* roots and wood along with a dozen root crops and some green herbs arrive and accumulate on the side of the road. Once the stock arrives a spring balance is hooked on to a branch of a tree to weigh the bundles; the balances handle up to 100 kilos of load. Weighed raw drugs are then kept in bundles on the road side, to be transported to the Thrissur market or to pharmacies in truck loads. On an average 2-3 trucks (6-12 tons per truck) of material leave Kozhinjampara in a week. Two to three wholesalers and a number of small scale dealers handle the trade, most of whom supply directly to pharmacies. The traders refuse to quote prices, instead asking the consumer, “how much are you willing to pay?” From other respondents (i.e., manufacturers and commission agents), I found that *koovalam* roots are sold for ₹ 12-15 (\$0.24-\$0.3) and the heart wood for ₹ 6 (\$0.12) per kg. The source of *koovalam* is difficult to trace given the secrecy, but according to vaidyans who are knowledgeable of local ecology most of Kerala’s supply comes from neighboring Tamil Nadu.



What is interesting about the commodity life of *koovalam*, is the exclusive channel in which it circulates outside the wholesale market. Popular awareness of the tree’s value in the ayurvedic market is not widespread. Timber merchants take advantage of this information asymmetry; they buy the wood at firewood price (₹ 2.5 (\$0.05) per kg), and sell it at ₹ 15 (\$0.3)/kg in exclusive markets. Usually, such trees become available when land gets cleared for construction, an opportunity that knowledgeable middle men make good use of. Of late, the operators of earth-moving equipment (commonly known as JCB drivers) have become an important class of participants in the trade.

A small link in a long commodity chain

Traditional practitioners and many small pharmacies are reluctant to switch to using any part other than the root. Those whose production is mainly meant for treatment depend on a tree or two in their own farm or they keep an eye on *koovalam* trees growing in the neighborhood. When they come

to know that a certain patch is getting cleared for construction, they place an order in advance²⁹². For instance, *Gopalan Vaidyan*, a small manufacturer based in central Kerala, has three distribution outlets. He requires larger quantities which he manages to get from a small supplier who deals in a narrow range of raw material. He bribes the delivery guy to get just the root portion of the tree at one and a half times the market price. Practitioners and small manufacturers are able to source material through exclusive channels because they require small quantities and because price is not a deterrent for them; they pass on the burden to consumers. The selling point is the quality and authenticity of their medicines in the local market. Much of the consumption is closely linked to their treatment; they do not have the obligation to meet demands from regular buyers. This means that when they do not find the right material they are not compelled to make the medicine²⁹³. *Keshavan Vaidyan*, a micro-manufacturer based in Suburban Ernakulam said he does not produce medicine when material is not available. “But large scale manufacturers are not like that. They will use the wood, or any other part of the tree or low quality material and continue to make the products.” The compromise large manufacturers make on material is an issue often raised by small manufacturers. A random visit to the warehouse of a pharmacy in a reputed hospital in central Kerala revealed a large stash of *koovalam* roots. The manager said “There is no real scarcity for *koovalam* roots. If you really want it you can get it, but you should be ready to pay the price.” He makes a logical point; though *koovalam* does not grow naturally in Kerala, it is abundant in North India where it is cultivated for fruits. Twelve varieties are cultivated in North India for fruits²⁹⁴. Surprised at the information about its widespread availability in North India a small manufacturer pointed out, “The real problem is perhaps not of availability, but disinterest in paying for quality. When heart wood is available at half the price, why bother about the root?”

²⁹² A common occurrence; the construction boom that began in the 70s (Gopikuttan 1990) shows no abatement. A single tree root weighs several hundred kilos. Four years ago when Keshavan vaidyan heard about a tree being cut 15-20 kms. away from his house, he rushed to collect some roots. The stock will last two more years. Philippose vaidyan knew the plot two blocks away from his house was sold to build a house, he put in a word with the contractor to let him know the schedule. Since he took care of the labor himself, he had to pay a small price for the material.

²⁹³ At the same time, there are also a few medium and small scale manufacturers who allegedly make low quality medicine, price them very low, push it through small unlicensed traditional practitioners for a higher commission.

²⁹⁴ I asked several practitioners and manufacturers about the discrepancy between this story of plenty in the North and scarcity in Kerala, but got no satisfactory answer. In Kerala, people are aware of its religious and medicinal uses, but have no inkling of its use as an edible fruit.

7.2.3 Myth-making and the morally ambiguous aura of commodification

For practitioners like *Keshavan Vaidyan* and small manufacturers like *Gopalan Vaidyan*, *koovalam* is an ideal beating stick to use against the large industry. However, while they legitimately brag about the authenticity of their medicine, they do tend to exaggerate the profligacy of the manufacturers. Plenty of yarn gets woven around the theme of industrial substitution and adulteration. This does not mean that industries can be given a clean chit on quality grounds. But the general tendency to trust traditional practitioners and distrust large manufacturers may blind one to the interests of the former. Madhavan vaidyan is right about *koovalam*. But I start getting skeptical when he says, “there is not enough production of *nellikai* (gooseberry) for the amount of *Chyavanaprasha* Dabur makes” This is a statement often heard on various forums, politicians’ speeches tea shops and dinner tables.

It is one of those folk tales that attain a status of fact by mere repetition. Even if the vaidyan is right about Dabur’s not using sufficient gooseberry, dearth of material is an unlikely reason²⁹⁵. As part of his invective against the industrial production that is almost the standard subject in every conversation, the vaidyan runs ‘*the taste test*’. I know it is coming when he starts turning a lid in the middle of his invective. He would soon pour the dark liquid into his ounce glass, and ask, “Now drink this and tell me, does the *Kutajarishtam* of Kottakkal²⁹⁶ taste like this?”. After a few minutes during the interview, he would ask, “Doesn’t the taste still linger on your tongue?” In the absence of external objective parameters, organoleptic qualities (color, consistency, taste, smell) are the only measure. An expert vaidyan can assess the quality of medicine by these standards, taste being the most important of them. I would take



Drink and Tell: Taste testing of medicine

²⁹⁵ Not many of them are aware of the thousands of acres of Amla production in some of the neighboring states like Tamil Nadu and parts of Northern India in addition to supply from the forest. Pratapgarh district in Uttar Pradesh produces 90% of the country’s gooseberry requirement, which is a mind boggling 10,82,000 MT in 12,830 Hectares.

²⁹⁶ AVS is the favorite target despite being a trust owned company with 45% of turnover devoted to charity. Though there are some small and middle range players with dubious reputation, AVS becomes the default villain by virtue of being the largest and therefore an icon of large industry.

the vaidyan's word when he distinguishes the genuine taste of *Kutajarishtam* from the factory made one, but when it comes to what goes on in the factory his knowledge is based on hearsay. Note that it also acts as a great sales pitch for him. Every now and then Madhavan vaidyan picks up the issue of pricing - another stick to beat the industry with. He points at a particular wine preparation and says the raw materials are very expensive, "Production cost per bottle comes to 50 odd rupees, but *Kottakkal* (i.e., AVS)²⁹⁷ is charging only ₹ 48/- Now you tell me. How can they sell it so cheap?" Implying that if the medicine is cheap the ingredients had to be of low quality. Like *Jacob* who comes to the same conclusion by comparing home made medicine to factory made products (see Section 6.5.2), he too fails to take into account the economies of scale²⁹⁸.

But having said this, the vaidyan does have a genuine problem. He is no doubt using high quality raw material personally supervised; it will be indeed surprising if large scale industrial production can meet such exacting standards. But unfortunately he has to compete with what he considers poor quality products given his scale of practice, he cannot afford to have too low a profit margin. One has to understand the context under which such legends get woven. The 'morally ambiguous aura' (Appadurai, 1986) of mass production provides a fertile ground for distrust. No one really knows what goes on behind the closed doors of the industry. This is not different from popular skepticism regarding quality of processed food from factories vis-à-vis home made food. The *legend of the missing gooseberry* represents this mistrust. Blockbuster products of big companies tend to be the most likely candidates to be chosen for the villain's role. Not surprisingly, Dabur's Chyawanprash becomes the icon of adulteration. Of the 48 ingredients in Chyawanprash, the most important is gooseberry. The allegation is that there is more jaggery and less gooseberry in the product, which is either done for a better margin or for palatability or for both.

Though allegations of adulteration are commonly leveled, they are rarely backed up by evidence. In a workshop conducted by the Kerala Agricultural University on medicinal plant farming, a research scientist from a premier institute alleged widespread adulteration, saying that 16 medicinal

²⁹⁷ Arya Vaidya Sala is popularly also referred as Kottakkal though it is a name of the town.

²⁹⁸ He buys from a minor raw drug wholesale market and in small quantities, so he does not have much of a bargaining capacity. Chencheril with his larger production size gets it cheaper. *Jacob* who buys from the retail raw drug shops to make medicine at home pays a 50-200% margin. AVS with four times the turnover than the next four large manufacturers, has the highest bargaining capacity and therefore can price their products low.

ingredients were affected by substitution. His allegation was dismissed as exaggeration by an eminent ayurvedic practitioner who had formerly worked in one of the largest industries. Finding fault with the scientists' claim that *atvidayam* (Aconitum) was being adulterated with *eratti muthanga*, he pointed out that it was recommended in classics and despite their botanical dissimilarity recent research showed them to have similar fingerprint. He then pointed out that "Kerala market situation is unique; 95% of manufacturers are vaidyans. Quality control is therefore inherent in the system". In a personal interview, the General Secretary of the ayurvedic manufacturers' body, AMMOI, agreed that allegations do have some substance but, "they tend to be way too exaggerated; such unfounded rumors are damaging the reputation of the industry".

But there is unlikely to be smoke without fire. Finding out the nature and extent of adulteration is investigative work that is beyond the scope of this work. Based on interaction with R&D scientists, production and purchase managers of big and small manufacturers and narratives of practitioners outside the industry, the most common sources of compromise in raw drug quality²⁹⁹ can be identified as 1. genuine but lower grade material (many of the raw materials are traded in three grades) 2. undetected adulteration that escapes sample testing 3. substitutions considered accepted because of widespread use 4. identity confusion. The biography of the index plant *kurunthoti* throws light on some of these issues.

7.2.4 *Kurunthoti's* identity crisis and its implications

Despite being commonplace, *kurunthoti* (*bala*) is among the most misunderstood of plants in the ayurvedic pharmacopeia. Traditional practitioners interviewed said there were 21 varieties of *kurunthoti*, a fact corroborated by botanists (Nesamony 2005). But only 2-4 are recognized as important in the pharmacopeia in Kerala.³⁰⁰ As for industry use of *bala* in Kerala, there is a consensus on using *Sida rhombifolia* spp. *retusa* (Vs *Sida cordifolia* in North India).³⁰¹ The identity crisis that *kurunthoti* enjoys and suffers gives a window into the confusion that surrounds the complex project of

²⁹⁹ According to Sasidharan and Muraleedharan (2009), the reasons for raw drug substitution are : mistaken identity, indiscriminate naming, biased interpretation of Sanskrit names, lack of expertise in identifying and increasing price.

³⁰⁰ Seven are identified by Nair and Rekha (2007) five by Nesamony (2005) A survey of Kerala industry (Sivarajan and Balachandran 1994) found four varieties were used as ingredients in medicine, but two had gone out of vogue. This raises a question if industrial commodification has led to the reduction in the variety of raw material used.

³⁰¹ I have not gone beyond practitioners narratives to double check the identity of species in use.

translation between local, textual, pan Indian, and botanical taxonomies. Modern botanical nomenclature is based on impersonal morphological features whereas ayurvedic classification is based on pharmacological and other functional attributes of the plant. To give a few examples,

- Pharmacological properties: *bala* (strength), *ashoka* (relieving from sorrow/pain), *bharngi* (cough-dispelling), *iswari* (power to neutralize snake poison, referring to Lord Shiva's ability to do so), *kasamardah* (suppressing cough)
- Taste and smell: *amalaki* (acid taste), *kiratatikta* (wild plant with bitter taste), *asvagandha* (horse smelling)
- Physical attributes: *akhukarni* ('rat-ears') *hamsa padi* (feet of swan), *dughdika* (having latex inside), *kokilaksah* (eyes of cuckoo), *mandookaparni* (frog-like leaves)
- Habitat: *kutaja* (growing on top of hills)
- Other characteristics: *duralabha* (not easy to handle), *durlabha* (not easily available), *apamargha* (hinders the path of pedestrians).

The same drug can have multiple names, as names can be describing different attributes of a plant, different parts or multiple pharmacological properties. Together these help in providing a brief profile of a plant, and in the absence of illustrations, provide valuable clues to the identity of the plant mentioned in classics. A good example is the plant drug *Sahachara*, which has seven names, "occurring in fully exposed habitats", "gregarious", "spiny", "pain-causing", "living in oppressive conditions", "refers to certain seedling establishment characters in mangroves", "referring to certain air-sucking characters, probably breathing roots in certain mangroves". Radhika (2011) has done an extensive review of drug manuals and dictionaries and located 40 synonyms for *bala*, viz., *strength promoting, grain-like seeds, yellow flowered, strong fibrous stemmed, fruits that ripen in winter* and so on.

The problem gets further complex because the same name can be used for multiple herbs, firstly because of the commonalty in physical and pharmacological properties, and secondly, due to unintended regional variations. This might seem messy from the modern expectation of 'universality' and 'uniformity', but these names were meant to carry local, contextual and functional information useful to the practitioner. Local relevance and functionality are prime factors that inform the logic of classification of flora among indigenous people (Scott 1998). Botanical classification on the other hand emerged from a universalist position, where plants were taken to the expert realm of a 'science', and removed from their local context.

The species concept permitted the unification of knowledge concerning flora and fauna, minimizing distances between near and far, between Europe and America....Nature, in short became a structure of data whose objective was not to appreciate but to process local

peculiarities into information using the botanical system best able to homogenize diversity (Lafuente and Valverde 2004: 137).

There are also names that convey nothing about the identity of the plant (e.g., *brahmi*) or too general to be useful (*amrita* - rejuvenating), but preserved mainly through usage, the survival of which depended on the continuity of the language and the medicinal tradition. Most Malayalam plant names have little significance in terms of pharmacological characteristics³⁰². But practitioners based in Kerala, even doctors trained in modern institutions are equally or more at ease with Malayalam than Sanskrit names, which is perhaps not the case everywhere else in the country³⁰³.

In the effort to standardize production, local variations might appear as errors or unwanted differences that had to be smoothed over to enable standardized production. But local variations are integral to the classical pharmacological framework which provides for substitution of less available herbs with more abundant ones and for adaptation of the pharmacopeia to suit local conditions. This was aided by the classification of medicinal plants in *Ganas* (drug classes based on pharmacological action). But dealing with local variations in the context of mass non-local production is obviously a thorny process. Varier was worried about the ignorance of individual vaidyans, which he felt could be rectified by them coming together, standardizing production and making the process error-free. But ironically the solution he envisaged had a greater potential for errors that he may not have then foreseen. The nature of error in centralized production is different, and perhaps more problematic because of its potential to be viral. Minor misinformation in the interaction between a set of collectors and an influential large manufacturer can snowball and attain the status of universal standard. Once a commodity chain grows around this mistaken herb, it can influence the standards in rest of the market. For example, *takaram*, a high elevation plant costing ₹ 300/kg., ingredient of formulations like *Bilvadi Tailam*, is wrongly substituted by a local aquatic plant costing ₹ 20/kg. The supplier had introduced it knowingly or unknowingly which was unknowingly accepted by one of the leading manufacturers that went on to become an established standard.³⁰⁴ Role of large scale raw drug

³⁰² Except for a few plants like *panikoorka* ("fever plant"), some names refer to physical features, like color of flowers (e.g., *vellila*, *chembarathi*). Some popular drugs have become default local names (e.g., *brahmi*, *tulasi*, *ashoka*).

³⁰³ PG students and doctors from Karnataka and Maharashtra participating in a workshop in Kerala were annoyed that instructors (production and R & D personnel of a large company) were using Malayalam instead of Sanskrit herb names. In today's Sanskrit-centric homogenized image of Ayurveda this would tantamount to 'ignorance'.

³⁰⁴ Told by Vasudevan Nair, botanist and consultant to Arya Vaidya Pharmacy in a workshop. Aug. 2008.

trader-collectors has been very important in the process of raw material selection, in their ability to persuade buyers to accept their version of drug identities, sometime based on genuine knowledge, sometimes to suit their convenience. But trader-collectors are not necessarily less rooted than manufacturers, many have grown with them, and the knowledge that exists today is co-produced. Many are carriers of traditional use-knowledge, as they themselves had picked up the knowledge from the vaidyans. But unlike vaidyans, they are likely to be influenced by commercial considerations in the choice of a particular plant or substitute.

Ashoka (*Saraca asoka*) one of the most widely used tree barks, is often substituted by the barks of *arana* tree (*Polyalthia longifolia*), the name of which in common usage is also *ashoka*. There is widespread discomfort about the use of this drug as there is no resemblance between the plants by ayurvedic or botanical standards. The real *ashoka* is in short supply, and therefore expensive. Two traditional practitioners said they stopped making *Ashokarishtam*, because of the unavailability of real *ashoka*. Despite it being an important drug (used in gynecological complaints), there has been no mechanism to systematically address the confusion. Some manufacturers of repute sheepishly admit using *arana*, conveniently going by the informal consensus.



A badly stripped Ashoka tree in a public garden

By virtue of being large scale raw drug buyers, thereby influencing the supply chain, the industry has indirectly induced some extent of homogenization. But the roots of traditional use have been so strong that even a century of industrialization has not been able to homogenize the usage. For example, for the drug *paphanah*, though *Pavetta indica* is the most common, three different species are in use. For the drug *prsniparni*, *Desmodium gangeticum* is the most commonly used, but two other species of *Desmodium* are also used. Neither the industry nor the State in Kerala has attempted universal standardization of ingredients. Each manufacturer began with their family tradition and local knowledge, and as they grew in scale they made their own in-house standards based on their historical usage. For this reason, they are reluctant to follow standards laid out in the Indian Ayurvedic

Pharmacopeia and Formularies. However meaningful be regional variations in usage, with increased pressures on standardization, the demand for homogeneity continues to escalate. Large manufacturers have experts in their R & D department for creating standards. But small and micro-pharmacies lack these resources³⁰⁵. In the middle of an interview, Dr. Vasu, an ayurvedic doctor and proprietor of a small pharmacy in Central Kerala, excused himself to take an urgent phone call. The caller was asking his advice on the choice of the right variety of *kurunthoti*. A long discussion ensued. Keeping down the receiver, the doctor commented, “this is the trickiest problem for us to handle. For small pharmacies like ours it is very difficult to decide which is the right plant. We would really like to get some technical support here. I really hope CARE (the ayurvedic cluster project, see Section 7.7) will be able to streamline this process.”

7.3 Medicinal plant resources in the forest: Cultural Vs economic stakes

STs were historically dependent on the forest to meet everyday needs ranging from food to medicine, ritual to entertainment. Though they had no marked territories, they had informal common property regimes to manage people’s relationships with resources. Some even had designated leaders to oversee the forest³⁰⁶. The unwritten rules on harvesting territories meant that people had long-term stakes in the conservation of resources that they saw as critical for not only their immediate survival but also for future generations. Though various regional kings in the past did interfere with their lives to a certain extent nothing was as disruptive as colonial intervention (Aravindakshan 2011). British encroachment of forests to rehabilitate soldiers in the early 19th century and large scale acquisition and clearing of forest land for tea plantation in the mid 19th century displaced most of the ST communities. In the late 19th century, Forest Department of the colonial government began to take control over the forest with an eye on revenue. Slash-and-burn agriculture was prohibited by the 1882 Madras Forest Act and hunting was restricted by the 1879 Nilgiri Game & Fish Preservation Act (Anderson 2000). The post-independent Indian State continued with similar policies alienating forest-dwelling communities from

³⁰⁵ With listing ingredients on the label becoming mandatory (both Sanskrit and Botanical names), a new problem has arisen. A small company listed on its label ‘*Sida cordifolia*’ though they were using *Sida rhombifolia*. Not all small pharmacies have expertise to identify botanical varieties of herbs, hence they use generic catalogues for the purpose. The part-time botanist consultants they hire are average botany graduates who are not trained in complex pharmacognosy.

³⁰⁶ For example, the Muthuvan community had a designated forest supervisor for each hamlet called a ‘Kani’, who was the decision maker when it came to matters concerning the forest.

their land. Forests' value as a source of revenue escalated with industrialization. The plan was to grow large-scale plantations of quick-growing high yielding tree species (like eucalyptus, teak) to replace inferior, slow growing ones and to earn revenue by supplying raw material to wood based industries (Guha 1983). In a personal interview, the King of Mannans in Kozhimala, Idukki district, pointed out that the forest department's project of farming inside the forest was at the root of its destruction.

The next threat to the STs came ironically from the conservationist ideology that saw forest-dwellers as a threat to forest resources. As forest after forest was declared protected, they were forced to the peripheries. Today 28.4% of the Kerala forest is protected as biological parks and wild life sanctuaries. A less visible alienation was caused by the denial of rights to use forest resources, forcing dependence on the market. This in turn made cash income a necessity for which they had to either trade forest goods or/and work for wage labor gradually alienating them from knowledge and values associated with forest resources. Forest resources were used not only for subsistence, but also for exchange. Anderson's (2000) study in the Nilgiri forests in Tamil Nadu contiguous to Kerala shows intricate reciprocal exchange relationships between communities based on barter. Market-driven commodification in the late 18th and early 19th centuries transformed tribal relations; monetary transactions replaced relations of reciprocity, economic stakes replaced cultural stakes. Demand from ayurvedic and other industries increased economic stakes of forest resources. At the same time, increasing dependence on biomedical health care³⁰⁷ led to diminished cultural stake in medicinal plants. This led to a conducive atmosphere for overexploitation. For the younger generation medicinal herbs have become mere 'commodities' to sell for cash.³⁰⁸ The alienation is compounded by the fact that they are suppliers to a medical system they are seldom users of.



The late Mannan King of Kozhimala

³⁰⁷ Though ST communities' access to professional health care is poorer than the general population in Kerala, biomedicine has made sufficient inroads. Abraham (2003) finds that though 84% depend on herbs for home remedies, at the next level their dependency was 94% on allopathic medicine, 15% on Ayurvedic medicine and 8% on tribal medicine.

³⁰⁸ Based on narratives of vaidyans and other elders from ST communities regarding generational value differences.

Despite their alienation from forests, the central source of livelihood of most ST communities in India comes from collection of minor forest produce (MFP) or non-timber forest produce (NTFP). Across India, there have been allegations of widespread exploitation of forest collectors by middlemen. The secretiveness of the raw drug and the consequent lack of transparency in prices makes it conducive for such exploitation (Joshi 2003). Kerala government took a radical step when they granted monopoly of collection of NTFPs to the STs in 1978. Girijan³⁰⁹ Service Co-operative Societies (GSCS) were formed that aimed to protect them from middlemen. These were soon brought under a nodal regulatory body, the Kerala State Scheduled Caste and Scheduled Tribe Development Cooperative Federation Ltd. (Hereinafter referred to as the Federation).

Despite the legally restricted access, and a substantially improved regulatory environment³¹⁰, illegal channels of trade persist³¹¹. Small middle men traders who are market-savvy and have the ability to advance and extract credit make use of these skills to gain access to forest resources. Some of these also happen to be official agents of the collection societies. The GSCSs focus mainly on items that they can easily market, unlike private traders



A Medicinal Plant Collector

they do not try to utilize the full potential to maximize profit. Of the total 145 plants in the list of forest collection, only a total of 60 are collected somewhat regularly, with each society collecting 15-20 items. But 80% of the total collection comes from eight items. The bureaucratic organization of the Federation and lack of initiative and market sense of the GSCSs renders them too weak to be competitive in a market situation. The centralized annual price fixing done by the Federation is not

³⁰⁹ Literally, 'hill people' this term is used as a generic term to refer to those designated as 'scheduled tribes'.

³¹⁰ Many flourishing private contractors of the pre 1980s era had gone out of business, some of them continuing to be marginal traders. Elders in ST communities also report that forest officials in general used to be high-handed and exploitative earlier and that they have now become less corrupt, more humane and friendly.

³¹¹ Reports of illegal trade are high in forest peripheries easily accessible to traders in buffer zones. To a certain extent goods are also reportedly smuggled through official checkpoints with or without the connivance of forest officials.

flexible enough to respond to the market. However, despite their weak role, by providing a fair price to collectors, the GSCSs have been relatively instrumental in forcing other traders to pay equivalent or higher prices. Abraham (2003) in her study of 20 select forest plants show that societies pay on an average 77% of what the private traders pay. All said and done, it does



On a market day: raw Drug Collection Agent, Kottur

appear that illegal exploitation remains fairly in check because the economic stakes are low; there are few high value herbs that are lucrative enough to warrant smuggling. Prices remain so low that medicinal plant collection, even when fair prices are paid, is not a preferred way of earning livelihood except for the most marginalized among tribal communities.

Therefore, Kerala forest resource suffers more from under-exploitation than overexploitation. The contribution of collection from the forests of Kerala to the ayurvedic industry is negligible. The ₹ 6



Commuting from interior forest regions to the market to sell raw drugs, Kottur

billion (\$ 120 mn) worth ayurvedic industry in Kerala is likely to consume a minimum of ₹ 2 billion (\$40 mn) worth raw material annually³¹². The total annual collection value from the Kerala forests in 2007-08 was a mere ₹ 26 mn (\$0.5 mn), that is 1.3% of this consumption. The recent hype of Ayurveda and of the State's potential to earn revenue from export of herbs and herb commodities, made the Kerala State government to sit up and worry about under-

exploitation. In the late 2000s, a policy proposal was made to step up MFP collection through enabling

³¹² Estimated based on manufacturers report of raw material part of the turnover being 35-45%.

Vana Samrakshana Samitis (VSS, “forest protection committees”)³¹³, breaking the monopoly of the current Federation system³¹⁴. The target annual turnover was ₹ 1500 mn (\$30 mn), 60 times that of the current average turnover. Though very few have the business acumen to deal with such an aggressive market, most GSCS functionaries come across as committed and concerned. Most of them are worried about the government proposal. VSSs are the ground level local administration of forests that are theoretically people’s committees, but they are literally under the wings of the Forest Department. They might be successful in increasing revenue, but this might open the floodgate to exploitation.³¹⁵

7.3.1 Long-term economic stake in restricted territories

Despite all the hurdles, there are a few pockets of collection that demonstrate the significance of long-term economic stake. The primary pre-requisites for success appear to be territorial exclusivity of collection area and the dynamism of the leadership of the concerned Society. Most GSCSs were weighed down by the centralized bureaucratic organization, working like government entities that care little about profit making. An exception is the Kurumba GSCS in Mukkali that has the advantage of a captive community - most of the Kurumbas live in the land locked forest, without access to any other means to earn cash income³¹⁶. This is the only GSCS in the study sample that openly criticized the Federation as bureaucratic. Prices were fixed once a year at the center making it inflexible to compete with market prices³¹⁷ that allows private traders to take advantage. Unlike societies, traders do not worry about the risk in paying an advance. The equation becomes worse when traders also act as creditors using it as a leverage to get access to forest resources. They are also known to make payments in tobacco and alcohol. On the other hand, the annual auctions were non-transparent; there were only limited number of regular participants every year with high potential for cartelization.

The Kurumba GSCS decided to bypass the Federation; it neither auctions its collection through

³¹³ Equivalent to VFC (Village Forest Councils) local administration body of the Forest Department that includes forest dependent general population of a given forest locality with an elected president and a forest guard or forester, as its secretary, established under the institutional framework of Joint Forest Management (JFM).

³¹⁴ Most GSCSs were worried about this sword hanging over their head, but the proposal never saw the light of the day.

³¹⁵ For example, one year, a GSCS failed to arrange collection for *kadukka* fruit, an item that they usually purchase for ₹ 6 (\$0.12)/kg. The forest office got it collected for ₹ 2 (\$0.04)/kg refusing to share any part of the profit with the collectors.

³¹⁶ It has 600 members, i.e. 1/3rd the population of members of the Kurumba community who live on the fringes and inside the Silent Valley Forest sanctuary, the most protected of all the sanctuaries in Kerala. The society has collection grants for the Attapadi and Mannarkad forest ranges that are outside the protected area.

³¹⁷ Since the society depends on the advance given by the Federation to pay the collectors, it would be risky to pay a higher than fixed price, because by the time they are ready to sell it the prices can again go down.

the Federation nor does it stick to prices fixed by them. The society supplies most of its collection to four of the five largest ayurvedic pharmacies excluding the State owned company³¹⁸. During the time of this interview, in June 2010, they were in negotiations with AVS, demanding a higher price for *padakizhangu*, which the company had not yet agreed to. The staff is constantly in touch with the fluctuating market striking hard bargain with buyers like regular traders do³¹⁹. The society claimed they used the maximum potential of the forest which left little room for illegal collection because they paid prices that traders were unlikely to match. According to them, the only item that could get illegally traded to a certain extent was *adapathiyam*³²⁰.

Pottomavu GSCS is one of the ten societies that are part of the Trivandrum branch of the Federation, which though not as market-savvy as the above, is fairly dynamic and has the advantage of territorial exclusivity. It has been into medicinal plant collection since early 70s and had won the award for the best GSCS last year (i.e., 2008), proudly claims the society president Tulaseedharan Kani. The members of the society, 80 odd families of the Kani community who live in this interior hamlets in Palode forest range derive 70% of their livelihood from collection of MFP³²¹. Recently, Ayurdhara Pharmaceuticals, the ayurvedic



Group of elderly Kani women pre-processing Kurunthoti for Ayurdhara: Pottomavu forest



One of the Kani women from the above picture

³¹⁸ This is paradoxical - the original intention was to channel the supply of collection societies to the State company.

³¹⁹ Recently they collected *cheenikai* at a price higher than that fixed by the Federation, despite being warned that the employees might end up bearing the losses. They nevertheless went ahead and earned a neat profit.

³²⁰ Because of its high-price (₹ 350-500 i.e., \$7-10/kg) and convenience to smuggle; a forest dweller could smuggle a piece of root in a shopping bag while going to town without attracting attention.

³²¹ Around 130 people are involved in the collection of forest produce through the society. The society collects 20-27 items in a year, and the average annual turnover is between 200 to 300 thousand rupees (\$4000-6000).

manufacturing unit run by SCST Federation has engaged them in pre-processing (cleaning, cutting and drying) of *kurunthoti* to enable value addition at the source. This is mainly done by elderly ladies of the community.

The society secretary who is not a Kani³²² is appreciative of the community's sensitivity. "The Kanis are extremely sensitive ecologically, and their harvesting practices are consciously sustainability oriented, it is not something we need to tell them to do". ST communities vary in the cultural stake they hold in forest resources depending on to what extent they preserve their cultural identity and traditional ethos. Each community's relationship with the forest is different, partly determined by its own history and partly by the impact of post colonial policies³²³.

7.3.2 The case of *Arogyapacha*: economic stake in competition with cultural stake

A hitherto obscure plant *Arogyapacha* (*Trichopus zeylanicus*) brought international fame to the Kani community and to a team of scientists, when they received the Equator award in 2002. Unlike much ayurvedic knowledge which is published or openly shared, medicinal knowledge among tribal communities is oral and exclusive, often closely guarded. Scientists of the CSIR lab who were working on an ethnobotanical project in the region managed to wrest one such secret from three Kani youth who were assisting them with fieldwork. Kuttimathan Kani (image on the right), the leader of them made headlines when he accompanied the co-awardee Dr. P. Pushpangadan to Johannesburg to receive the equator award.



Kuttimathan Kani of the Arogyapacha fame talks about cultivation related problems

³²² One staff member of GSCS is always from the Scheduled Caste.

³²³ Whether a community has access to land and a history of settled cultivation (e.g., Kanis in Trivandrum, Muthuvans in Idukki), historically displaced and forced to work for daily wages (e.g., Paniyans in Wayanad), lives in protected forests with minimal access to resources (e.g., Muthuvans in Lakkam Kudi), lives deep inside the forest (e.g., Kadars in Vazhachal, Kattunaickans in Wayanad), moved to cash crop cultivation (e.g., Muthuvans in Idukki), struggling for basic land rights (e.g., various STs in Wayanad and Pathanathitta), substantially integrated with the mainstream (e.g., Mannans in Idukki) or isolated (e.g., Muthuvans in Idukki), reputed for its medicinal knowledge (e.g., Kuruchiyars, Muthuvans and Kanis), large (e.g., Kanis with a population of 20,000) or small (e.g., Kurumbas with a population of 1500).

The scientists led by Dr. P. Pushpangadan, an ethnobotanist from CSIR worked on the chemical pharmacology of the herb and with the help of an ayurvedic expert designed an ayurvedic medicine called *Jeevani* for which they obtained Indian and US patents. With the help of an expert pharmacognosist, the herb was identified as an ayurvedic classical drug *varahi* (Sivarajan et al 1990).³²⁴ Following this, they granted license to Coimbatore based Arya Vaidya Pharmacy (AVP) for production, after signing a benefit-sharing agreement with the Kanis, who were expected to get 50% each of the license fee and royalties obtained by the product sales. However, the project met numerous hurdles on the ground. A group of *Plathis*, officially designated Kani healers who were not consulted during this process, wrote a letter to the chief minister objecting to the deal. They felt it was unfortunate that the secret leaked, but now since it had, they did not want it to be leased to a private company. They were not interested in monetary benefit. Instead they wanted it to be shared as a free good for the benefit of the public. To use Kopytoff's (1986) terminology, moving the plant from the "sacred sphere" to the "commodity sphere" must have felt unconscionable within the Kani cosmology. After overcoming several teething troubles³²⁵, the project finally took off in 2005. *Jeevani* came to market, but did not last long. It ended up in a series of controversies; the CSIR scientists drew much flak in the process. Dr. S. Rajasekharan, the ayurvedic scientist who designed the drug is reluctant to talk about it. He is distraught; what they intended as a benevolent act had backfired, making them villains. The unethical way in which the information was accessed made them easy targets for criticism, but there were other factors at work also common to other well known ethnobotanical fiascos³²⁶. The root of the problem lies in the larger context of the exchange "once you begin to dance with the devil, you are more likely to be seen as a sinner (Brown 2003: 125)." Ethnobotanical researchers had supplied valuable information to industrial bioprospectors, subsidizing commercial drug exploration. The IP heavy regimes of the industrial world along with technological changes thwarted free flow of information as it "crossed the line from reciprocal exchange to industrial larceny" (Brown 2003:106).

The biggest hurdle in the *Jeevani* case was set up by the Forest Department which had sole

³²⁴ Many herbs mentioned in the Ayurvedic classics remain unidentified.

³²⁵ Amidst this, there was a ruckus in the Kerala parliament saying the royalty share was not fair. So the government issued an order to put the project on hold, asking the parties to rework the royalty agreement.

³²⁶ The most infamous of them, ICBG-Maya project in Chiapas and Shaman Pharmaceuticals had landed into similar trouble, despite the inordinate effort made to take consent and share benefits with the communities (Brown 2003).

control over the forest land and resources; the community had no say in the matter. It refused permission to transporting the herbs out of the forest, despite being in the know that they were cultivated³²⁷. The objection of the Forest Department is not unfounded. Cultivation becomes a legitimate front to smuggle medicinal herbs out of the forest (e.g., *kattupadavalam* case, Section 7.6.3). A lucrative grey market had developed around the herb following its fame, far before *Jeevani* entered the market. The leaves of the plant were being smuggled out in undetectably small quantities and sold at ₹ 100-150 per kg. However genuine be the intention, creating blockbuster herbs have the inevitable impact of magnifying individual economic stakes that tend to overtake the community's cultural stake³²⁸. Ironically, the fact that it is secret knowledge itself brings unwanted attention creating an inflated commodity value³²⁹.

The limited ability of herbal formulation patents to maintain exclusivity is downplayed by all the parties involved. Patents on plant formulations tend to be as weak as copyrights. Once secret knowledge is made open, nothing can stop others from creating modified versions. In the case of *Arogyapacha*, this problem was further compounded. Re-designated as an ayurvedic herb, it was dragged into an open source system³³⁰. Since AVP's license for *Jeevani* expired, they have come out with a new product, *Punarjeevani*, literally meaning "Jeevani again" (image on the right).



Jeevani - Punarjeevani

Patent would make practical sense only if it was viable for the company to legally exclude other uses, not a likely scenario for ayurvedic companies³³¹. The inherent replicability of biological material poses another problem. There is no guarantee that the original owners of knowledge will benefit from the sale of the material. *Arogyapacha* had an initial advantage in being endemic. But it did not stop AVP or other pharmacies from sourcing it from the other edge of the forest in the

³²⁷ If the Department was genuinely concerned, it could have appointed supervisors to oversee harvesting and transport.

³²⁸ E.g., This occurred when *Sarpagandhi* (*Rauwolfia serpentina*) was extracted for anti-hypertensive alkaloid *Reserpine*.

³²⁹ Tribal medical knowledge carries an aura of mystique for the mainstream, representing all that is pristine, untainted and magical. Compared to regulating researchers policing the curiosity driven public is near to impossible (Brown 2003).

³³⁰ The scientists were perhaps aware of the tenuousness of its exclusivity. Kuttimathan said that before *Jeevani* took off, during the controversy, they were approached by a company from Bangalore that promised higher royalty, but the TBGRI scientists told them to stick to the deal as their exclusive control over it would not last long.

³³¹ Biomedical pharmaceutical product's commercial logic cannot be applied to Ayurvedic products because profit margins are too low in the latter to justify the cost of litigation and the borders of the patent too fuzzy. The most important instrument for intellectual property here is the trademark, and surprisingly but for the drug registration that was valid within India, it had no specific trade mark protection inside or outside the country.

neighboring state of Tamil Nadu, also a Kani habitat. The herb is also available in any medicinal plant nursery and is now growing in innumerable medicinal gardens. If a lucrative market develops, there is no law to stop it from being cultivated in large scale.



Arogyapacha for sale in a medicine nursery

7.3.3 KIRTADS³³² model: Economic stake built over cultural stake

Dr. Vishwanathan Nair is an anthropologist who has been researching ethnomedical practices of the STs of Kerala for the past four decades. During his study he had realized that their traditional medical knowledge was fast disappearing. When he became the Director of KIRTADS³³³, the State government Institute meant to promote research and development of the Scheduled communities, he implemented an idea that he had been toying in his mind for long; to reinvigorate tribal medicinal knowledge by providing a platform for bridging the otherwise broken chain of knowledge transmission. He began with a pilot venture in 1993, with the setting up of a Tribal Medicine Center in Wayanad in the North-Eastern tip of Kerala; 30 regional healers were identified and organized under a *Chief Tribal Healer*³³⁴. They were paid honorarium, transport and accommodation cost to instruct ten selected ST youth in a one year certificate program. After completion of the program, the students were certified by KIRTADS as vaidyan. Senior healers of the community³³⁵ were also awarded the certificate after an interview and practical assessment of herb identification skills. Meanwhile Dr. Viswanathan had managed to get the Chief Minister's backing for the program, which was critical as they had to face protest from a section of ayurvedic practitioners who questioned the validity of the parallel certification. The program drew tremendous response and was soon extended to all tribal communities in Kerala. Around forty ST healers were appointed as instructors.

Essentially what Dr. Viswanathan did was to provide an institutional mechanism to enable STs to commodify their knowledge without losing intellectual property to the outsiders. Unlike the

³³² Kerala Institute for Research Training and Development Studies of Scheduled Castes & Scheduled Tribes

³³³ Kerala Institute for Research Training & Development Studies of Scheduled Caste and Scheduled Tribes.

³³⁴ The core curriculum was tribal medicine. Students were exposed to biomedical knowledge on health and medicine through a paper on community medicine. More emphasis was given to practical learning; they had to identify at least 500 medicinal plants and in the last phase, they had to apprentice with prominent tribal healers.

³³⁵ During this period, the NGO led by Nair identified and prepared a directory of 240 tribal healers.

arogyapacha project, neither Nair nor the Institute has courted limelight. It was a low-key project that was executed on a shoe-string budget, just enough to meet the operation cost and to provide minimal incentive for the healers. It was also genuinely participatory; the healers who were appointed as faculty were put on an equal footing and given a free hand in planning and running the program. Their right to secrecy was acknowledged and respected; no attempt was made to pry into their medicinal knowledge. They were given the freedom to choose what they wanted to teach.³³⁶



A flourishing clinic of a KITARDS certified Vaidyan from Kuruchiyar community, Wayanad

In 1996, the government agreed to the Institute's recommendation to set up an annual grant to assist tribal healers in raising medicinal plants and to improve facilities for preparing and dispensing medicines. The Institute provided know-how, financial and moral support for the healers to set up clinics with the help of which many have established successful practices. They get as many patients from the mainstream as from within their community if not more. The more reputed of them get visitors from across Kerala, some attracting patients from outside the State³³⁷. Of the 9 tribal healer informants from five communities³³⁸, 7 were KIRTADS certified, two of which are young alumni of the healers' training program. Among the senior healers, one had built a full-fledged nine bed inpatient hospital, two others were attracting patients from neighboring towns and cities. Both the junior healers interviewed had established successful practices. One practices in a remote interior hamlet inside the forest in Wayanad attracting 100-200 patients a day, employing 40 herb collectors to make medicines (see image of the clinic-pharmacy above). His pharmacy assistant allowed me to take a photograph of the premises but pleaded, "Please don't publish the photograph, we don't want any more crowd. We are already not able to handle the crowd". Another junior healer stated that despite being a healer's son he would not have been able to become a vaidyan without this opportunity. He said, "As per our community ethics, I

³³⁶ Also whom to impart with knowledge that they considered secret. This was important given that several communities were involved, some of which had cultural barriers to share secret knowledge with outsiders.

³³⁷ For example, the late Valli Amma, an elderly woman vaidyan from the Kurumba community attracted patients from cities outside Kerala, like Bangalore.

³³⁸ One each from the Kadar, Urali, and Kuruchiyar communities, two Muthuvans, and three Kanis.

would not have been able to put an economic value to the service, but the training made it possible to see the process in a different light”. It was important not just because it opened up a means to livelihood, but also because it bought in a lot of much needed self esteem to the community. He said, “For the first time the mainland people (*Nattukaru*) are treating us with respect. They call me *vaidyar*, pay the money we ask, observe whatever we asked them to do.” The success of the program is evident by the fact that almost all certified healers have youth from their own communities apprenticing with them (See Appendix G for practitioner profiles).

More often than not tribal medicinal knowledge gets exploited without any benefit accruing to the community. For instance, one of the widely advertized proprietary ayurvedic products from Kerala, *Haridra*, an anti-hemorrhoid product

marketed by DuCare carries the slogan “a unique tribal formulation for piles”. An ayurvedic practitioner was found advertizing his expertise in tribal medicine. Muthu vaidyan had an interesting story to tell about a conman who went around conducting ‘tribal camps’ across Kerala recruiting tribal healers to travel with him. He spent almost a year and a half with the program; the camps drew on an average of 800 people per day. He moved away after he realized it was a money making racket that had little regard to people’s health³³⁹.

The TBGRI ethnobotanical approach saw tribal knowledge as just a source from which knowledge of plants had to be taken and validated within the ayurvedic framework. In fact, the herb was de-identified from the culture when it was named as *arogyapacha* (the health herb) and classified as an ayurvedic drug. Citing Charaka’s advice to ayurvedic practitioners to gather knowledge of herbs from shepherds and nomads³⁴⁰, Dr. S. Rajasekharan, said the traditional path of drug discovery was scuttled by the artificial freezing of the ayurvedic pharmacopeia. The Indian Drugs and Cosmetics Act



Krishnan Vaidyan from the Muthuvan Community, Lakkam Kudi, Marayur

³³⁹ As there was no time to take case history or to make medicines, he was forced to give standard prepared medicines. Patients were charged exorbitant amounts of money, doctors were paid a small commission. The itinerant camp mode was convenient to escape long term accountability.

³⁴⁰ *Charaka Samhita* Ch.1 su: 120-121: *Oushadha nama roopakhyaam jaanathe kyajapa vane, avipashchaiva gopashcha ye cha anye vanavasinatha* ‘the goat herds, shepherds, cowherds and other forest dwellers know the drugs by name and form...’

(1940) limited innovation to herbs mentioned in the approved classical texts. Just as biomedicine wanted ayurvedic plants for discovering new drug entities, Ayurveda looked at tribal medicine as a source of knowledge, without respect to its larger framework. It is perhaps this lack of respect that was behind their resistance to the KIRTADS certification of ST healers as vaidyans.

7.3.4 Comparing the ethnobotanical benefit-sharing model to KIRTADS model

The ethnobotanical benefit-sharing approach is based on an external revenue model. For it to be financially sustainable, herbs have to have proven pharmacological value within a biomedical paradigm³⁴¹. The financial viability of such a model is not always guaranteed; the costs of drug testing are high and the rate of success very poor as evident by the Shaman pharmaceutical experiment (Brown 2003). Benefit-sharing becomes a complicated exercise as knowledge tends to be shared across communities. Often within communities that lack a coherent authority structure, representation becomes a knotty problem becoming an unwanted source of conflict. Hyped up herbs create a conducive atmosphere for illegal exploitation chains to develop. This is reminiscent of the “tribal zone” situation (Ferguson and Whitehead 1992), except that the valuable goods belong to the people themselves and the bone of contention is intangible intellectual property. The problem is exacerbated due to the involvement of large capital. Contrary to scientists’ self-perception of benevolence, the unequal interaction brings into relief the wide disparity in monetary compensation between the parties involved, giving rise to the perception of exploitation (Brown 2003).

Ethnobotanists, in their zeal for forest conservation promoted the idea of forest biodiversity as being source of valuable medicines (Brown 2003). This concept of wealth ignores the inherent economic value of medicinal herbs as local health resources, instead focusing on their elusive and often undependable cash value brought by selling to outsiders, especially biomedical pharmaceutical companies. It does not take into account the potential losses to the community in the event of the herb’s escalated exchange value which might not only make it unattainable for internal use but also threaten its very existence in the wild. The KIRTADS model on the other hand recognizes, strengthens and equips indigenous knowledge to adapt to a commodity friendly model. Most importantly, it allows

³⁴¹ Discrepancy in cultural capital allows scientists to claim intellectual capital over indigenous knowledge (Brown 2003).

7.4 Non-forest medicinal plant resources: Cultural stakes

The non-forest supply chain includes medicinal plants collected from private farms and commons. Ethnographic description of household involvement in medicine making in Kerala in the last three chapters shows how this helped to maintain people-plant relationships. But unlike forest regions where cultural stake and economic stake directly compete, the general population has no direct monetary stake in the resources. It is only the marginalized, usually the landless who have been using medicinal plants as a resource to earn their livelihood. Commons are uncultivated land between farm lands not owned by anyone. Unlike the forest, here there were no historical common property regimes to regulate access. Resources survived only because the intensity of use was low, though most medicinal plants and trees were safeguarded by traditionally prescribed rules of extraction. Though the rules emphasized the medicinal value of specific roots (e.g., *koovalam* - roots growing in the northerly direction), they were perhaps made to ensure sustainable extraction³⁴⁴. Pressure on plant resources must have been an old story; the 16th century treatise Bhavaprakasha lists *Abhava varga*, i.e., a class of substitute drugs for rare or unavailable plants. Substitutes are suggested for 44 medicinal herbs in the three important classics from 16th to 19th century (Venkatasubramanian et al 2010).

Mass production and increased demand for finished medicine in the past few decades has led to large scale extraction from the commons, flouting all traditional rules of harvesting. This would still not have been a problem if not for the fact that expansion in the urban sprawl and spread of intensive cultivation had meanwhile shrunk common spaces considerably. The biggest culprit is rubber which gobbled up all previously uncultivated areas especially hilly lands, meadows, poorly irrigated lands³⁴⁵. The only common spaces now left are road sides, river banks, and buffer regions of forests. Recently, a brand new threat has begun to loom over the most critical of the remaining commons, the roadsides.

³⁴⁴ Similar rules for extraction have been found to be prevalent in many indigenous cultures (Sheldon et al 1997).

³⁴⁵ Area under rubber cultivation expanded to 627% from 1955 to 2000, now accounting to 20% of the cultivated land.



Weedy growth on the roadsides includes medicinal plants



Harvesting kurunthoti from the roadside post monsoon

In my last visit to the field in early 2012, I heard a small manufacturer complain in a business meet, of acute raw material shortage as a side-effect of NREGS (National Rural Employment Guarantee Scheme). The project deploys casual laborers across Kerala for road side beautification work, who mercilessly dig up all biomass without leaving back any roots. That this problem is not as trivial as it seems is evident from the fact that it has already attracted media attention (e.g., Viswanath 2012).

In many regions, private farms are an equal or more significant source of medicinal plants, especially because the predominant system of traditional farming in Kerala is the homegarden system. Unlike monocultures that leave little room for diversity, a homegarden is a multifunctional farm, a combination of passive and active cultivation.³⁴⁶ Several medicinal plants are weeds that come up naturally and maintained passively (e.g., *kurunthoti*). A few are intentionally cultivated (e.g., *panikoorka*). Some are used for both food and medicine (e.g., *kodakan*) or other cultural purposes (*tulasi*, a sacred plant). Some medicinal trees like *venga* are maintained within homegardens for their timber value, some for fruits (e.g., *njaval*, *tamarind*). Homegarden cultivation promoted multi-functional thinking that often involved long-term planning, a thought process absent in monoculture cash crops (Thomas 1999). As people moved from agrarian to salaried employment, such thinking lost relevance because most commodities could be bought from the market. Medicinal plants in homegardens also got sidelined due to transition in farming from extensive to intensive cultivation,

³⁴⁶ The term 'horticulture' is commonly used for such systems, but in India the term would mean 'fruit and vegetable cultivation'

especially towards monocultures of cash crops³⁴⁷. The biggest culprit again was rubber. The Kerala Rubber Board's policy required cultivators to clear the farm land of every other plant as an eligibility requirement for subsidy. There were also other attitude shifts from 'traditional' to 'modern', like change in preference from functional gardening to modern landscaping centered around fashionable ornamental plants. Another cultural practice that was critical in conserving plant species are *sarpakavus* (literally, snake groves), small patches within the farm reserved as a sacred habitat for snakes³⁴⁸, that have significantly declined due to weakening of religious and cultural beliefs.

Dissociation from medicine making has distanced people from knowledge of medicinal values of flora. More than monetary loss, lack of knowledge among people does not augur well for conservation within farms. Savvy middlemen make a fortune out of this ignorance, buying trees like *koovalam* for timber or firewood value (See section 7.2.2). Talking about the lack of availability of an important medicinal tree root, a respondent from a medicinal plant collection society said, "*Palakapayyani* (one of the Dashamoola trees) was common in the farmsteads till recently, but it is now hard to find because greedy medicine pluckers went around homesteads indiscriminately pulling out roots of immature trees, paying pittance to the owners." They could do this because the farm owners had no knowledge of the medicinal value of the tree or of its trade value as a raw drug.

A good example for the significance of cultural values in conservation is the index herb *koovalam*, the poster child of ayurvedic industry's threat to medicinal plant resources. Destruction of *koovalam* is usually clubbed with the larger story of exploitation of forest resources, but a closer look reveals a different story. In Kerala, *koovalam* happens to be more of a cultural tree than a forest tree³⁴⁹, a fact that is seldom recognized. Due to its religious value, it was historically grown in home gardens, sacred groves and temples. According to a large manufacturer's estimate, the scarcity of *koovalam* is a two decade old story. But popular narratives push the time frame further backwards to

³⁴⁷ An analysis of homegardens in Kerala (Peyre et al 2006) finds that 50% of all respondents followed traditional homegarden management practices, 33% had moved towards cash crop production and use of external inputs.

³⁴⁸ Found across India in various forms, such 'sacred groves' have been found to harbor threatened species that are not found in protected forests and also have medicinal species in greater abundance than forests (Bhagwat et al 2005).

³⁴⁹ This species is globally distributed across Indo-Malesian region, it grows all over India in nine States, but is densely distributed only in dry and moist deciduous forests of the Eastern and Western Ghats with a mean annual rainfall of 50-200 cm. Though it is present in Kerala, it is sparse in the wild because of heavy rainfall of annual average being over 300 cm. Inquiries with traditional practitioners familiar with the forest ecology, and knowledgeable of the past few decades, reveal that forests in Kerala was never an important source of the drug. It does not also figure in the SCST Federation's list of 145 forest plants allowed for extraction.

the 1960s.³⁵⁰ Added to *koovalam*'s woes is an unfortunate misunderstanding of a popular proverb³⁵¹ that lists four events as ominous for the land and the land owner, one of which is the perishing of *koovalam*. The intention of the proverb must have been to remind people to take special care of the tree, considered an integral part of the homegarden. But paradoxically, the proverb seemed to have become counterproductive. Afraid of adverse consequences of its destruction, people thought it wiser to avoid planting the tree in their homesteads!



Koovalam (Aegle marmelos)
Sapling in a medicinal plant nursery

7.5 Non-forest medicinal plant resources: Economic Stakes

A noteworthy trend in non-forest areas is the transition from professional collectors to daily wagers³⁵². This development is not entirely new as noted by PS Varier in his foundation address in the beginning of 1900s, but it has increased in magnitude. Fresh herb trader *Abdullah* says that in the past they could hire knowledgeable collectors; they had to be only given a item list, they knew the identity and location of herbs. Now they hire casual laborers, who are trained on the spot to identify a few herbs, usually one at a time. Be they professional collectors or casual laborers, it is unlikely that long-term economic stakes work in an open access situation, whether today or in the past. I observed an instance where the fresh herb agent refused to supply the bark of *ung* (a tree) to a small manufacturer, telling him that the bark extraction is killing all the trees, suggesting he use the leaves instead. Though this suggests a likelihood of some long term economic stakes for professional collectors or traders, my estimate is that this is likely to be negligible given the historical lack of exclusivity in collection territories.

Economic stakeholders of non-forest resources are marginalized people who earn their living by selling medicinal herbs. There are a variety of collectors in non-forest areas. There is a large body of

³⁵⁰ A retired school teacher says that in her childhood (in the mid-1960s), she used to harvest roots from a *koovalam* tree in the neighborhood commons. Despite the fact it was not a popular home remedy, the paucity of resource and population pressure combined led to overharvesting to such an extent that one fine day the tree collapsed.

³⁵¹ *Nari karanjidam, narakam nattadam, koovalam kettidam, nakham vetti ittidam okke nashichidum* - the land on which a woman cries or a lemon tree is planted or *koovalam* has gone bad or nails are cut and dumped, will surely perish.

³⁵² Two STs, Ulladans and Nayadis were among such professional collectors, are now found only near Kottayam wholesale raw drug market.

casual laborers, mostly displaced laborers, women from lower income families who need to work close to home on a flexible schedule, disabled and elderly people who cannot do other jobs. Here are profiles of four respondents that represent some of the common categories of collectors.

Full-time collector: *Thankamma*, a lady in her mid 50s who lives in the outskirts of Thrissur is a regular collector supplying to a large Ayurveda pharmacy in the nearby town, an occupation she started in her teens. She used to pluck a number of medicinal herbs from the commons, from river shores, road sides and private farms. The earning rarely matched a daily wagger's income, but was a good fallback option. She stopped the job when she started going for full time wage labor. Now four decades later, she turns to herb plucking occasionally. The pharmacy sends word to her if there is a requirement for a small quantities of a particular herb, for example 50 kilos of *brahmi*³⁵³. Though it is not much rewarding³⁵⁴ she is glad to have the option to make up for days of unemployment. The work is not heavy except for herbs like *kurunthoti* that are difficult to uproot.



Yohannan

Full-time collector committed to a single buyer: Yohannan, a 72 year old, partially disabled, house painter, shifted from part time to full time collection as he grew older. He was introduced to the trade in his youth by a vaidyan cum raw drug wholesaler, who also taught him how to identify plants. He was supplying to him till recently, but now the vaidyan is no more and his children have become allopathic doctors. Now he mainly supplies to a local raw drug dealer, who gives him the same price he would get in the Thrissur market. It fetches him ₹ 150-200 (\$3-4) equivalent to a day's wages of an unskilled woman laborer. On the day of the interview he had four bundles of plants, *kadaladi* (3 kgs), *tulasi* (4 kg.), *kurunthoti* (around 5 kgs), and *cheroolam* (2 kg.), these would fetch an average of ₹ 18-20 (\$0.36-0.4) a kilo.

Full time free-lancer:

Keshavan does both the collecting and selling himself. When he finds a cache of medicinal plants he goes around enquiring among pharmacies, also collecting information on future fresh herb

³⁵³ Whenever there is a long period of unemployment she calls up the pharmacy (thanks to the mobile phone) to check if there is a requirement. The pharmacy also contacts her once in a while with specific requirements. Sometimes when she is lucky, like she was last week, she manages to earn above ₹ 200 (\$4) for a day's work, which is higher than her regular daily wage of ₹ 150 (\$3). But there are also occasions when she earns only 50 or 100 when the quantity required is small.

³⁵⁴ Market prices are highly fluctuating, the average price for a kilo of fresh *brahmi* in the wholesale market ranges from ₹ 10- 20 (\$0.2-0.4). Prices vary depending on season, criticality of requirement and quality. Thankamma gets ₹ 5-15 (\$0.1-0.3) per kilo. If she sells to an agent she would lose ₹ 2 to 3 (\$0.04 to 0.06)

requirements. He has a number of buyers in Shoranur town, which has three medium sized manufacturers and two ayurvedic medical colleges and a couple of resorts in the town. When I met him he had just spent two hours collecting 25 kilos of roots of the castor plant from the banks of the Nila river, a collection that is worth ₹ 250-400 (\$5-8).

Farmer cum part-time collector (image on the right)

When I met *Ahmad*, he was on his way to the wholesale market in Thrissur, trying to find a buyer for 30 kilos of barks of the *Athi* tree, he hopes it would fetch him ₹ 7 to 15 (\$0.14 to 0.3) per kilo. The source of the resource was his own farm; a large branch of the tree in the farm had fallen during the previous day's thunder storm. Though an average farmer, being medicine-literate he regularly supplies material sourced from farmsteads, e.g., drumstick tree bark and root of *koovalam*.



Head loading fresh herbs to wholesale market

7.5.1 *Kurunthoti*: A contrast between long term and short term economic stakes

Long-term economic stake also comes into effect in open access spaces in the event of absence of competition. I observed one such situation in the forest supply chain of the index plant *kurunthoti*³⁵⁵. In terms of quantum of collection, *kurunthoti* is the largest among the MFPs collected by the Federation (363.6 tons in 2006-7). Four GSCs from the sample account for 70.4% of the collection. The largest contribution comes from the North-Eastern tip of Kerala, from the district of Wayanad. Two GSCs (Meppadi and Sultan Battery) account for 65% of the total collection.³⁵⁶ But *kurunthoti*'s presence in the forest supply chain is deceptive. Though the collection flows through the forest channel, it is the collectors and not the source that makes it a forest produce. Almost all the material comes from non-forest commons around the peripheries of the North-Eastern forest ranges of the Western Ghats in Kerala. During the season, collectors descend on the picturesque rural landscape like a locust army. The entire collection of the two societies is geared to meet the annual orders of Arya

³⁵⁵ Though *Sida* species are available across the country, Kerala depends on local collection because of the variety specificity (*Sida rhombifolia* spp. *retusa*) and also due to abundant availability it was a more economical option.

³⁵⁶ 166 tons and 118.8 tons respectively in 2006, and 115 and 128 tons in 2008-9.

Vaidya Sala.³⁵⁷ Both societies claimed that the collection did not have any visible effect on plant resources because they change the collection site every other year. The resource is so abundant that they claim they are limited by demand rather than supply potential. This is not surprising given that the regeneration rate for *Sida* spp. was found to be 100% if the removal rate was below 75% (Muraleedharan et al 2005).

More importantly, the harvesting is typically done annually between Oct-December post the flowering and fruiting of the plant. In most other regions of Kerala, the collection is between August-October, when the soil is soaking wet and the roots are easiest to pull. Here, there is a conscious decision to wait for the fruiting season to get over. Both the GSCSs and the manufacturer (AVS) who buys from them have a long-term stake in the resource. Other factors also work in *kurunthoti's* favor. Unlike other parts of Kerala where *Karkidakam* (July-august) is the lean period for labor, in this region Nov-January is the right time to mobilize a large labor force. So far, the GSCSs have been fortunate to get an exclusive catchment to collect the material and since only the most marginalized resort to medicinal plant collection, there has been no significant competition. But of late, there is a fear of private contractors entering the space. The Meppadi GSCS secretary says that she plans to petition to the Federation that STs be given monopoly of collection. But this argument has no locus standi as there is no law to regulate harvesting of resources in non-forest commons; monopoly of tribal collectors is restricted to forest produce.

Kurunthoti's commodity life illustrates the problems that arise in the context of short-term economic stakes. Upputhara is a busy town with around hundred shops catering to the largely rural agrarian population of the *Panchayat* in the hill district of Idukki.³⁵⁸ Rolling tea gardens dominate the landscape accounting for nearly 60% of the cropped area. Other important crops are rubber, pepper, coffee and cardamom. Medicinal plant collection hardly has any place in the region's economy. Though it is abundant in forest resources, raw drug markets are far away, and much of the forest in the region is part of the State Reserve Forest.

³⁵⁷ The material is sold at a price of ₹ 27 (\$0.54) to AVS which sends around 12-14 trucks to each of these two societies for collection. If the material fetches a better price, the difference is paid to the pluckers.

³⁵⁸ Upputhara, a village *Panchayat* with a population of 30,000 is located on the bank of Periyar river in the district of Idukki. It is a migratory region where settlements began in early 20th century with a group of Christian families from Kottayam acquired license from the Travancore government to establish tea plantations (Nair and Ramkumar 2007).

In the past three years, there is a new development. By the end of monsoons, in the month of August, a raw drug collection center springs out of nowhere. As the day progresses, stacks of fresh herbs and roots begin to accumulate around the shop. *Kurunthoti* roots dominate the stacks that consist of around ten different herbs roots. The traders, *Suleman* and *Sayyed* are reluctant to speak.

Though they claim they trade in herbs collected from the commons, some of the material is most likely sourced from forest land. They pay ₹10 (\$0.2)/kg. of freshly collected *kurunthoti* root³⁵⁹. Once they accumulate a mini-truck load (3-4 tons), they sell the material to larger agents in Kottayam and Thrissur³⁶⁰. These traders are routine dealers



Seasonal Fresh Herb Traders, Idukki Dt.

in various types of waste - paper, plastics and metals. They are adept at identifying emerging niches; it works well for them to diversify. They move into medicinal herb trade in the post monsoon season when the earth becomes soft and it is easy to pull out roots.

Such fly-by-night operation has been catching up in various parts of Kerala of late, owing to spiraling demand for bulk quantities of some local raw drugs like *kurunthoti*. Unlike traditional collection agents they have no long term stake in these resources, they switch their trade to suit the market. It makes sense for them to maximize their profit; there is no scope for sustainability here. Same is true with collectors - a motley crowd of people including marginalized laborers, women, older men, displaced laborers, and school children from poor families using their spare time to make some pocket money. Most of the displaced laborers are from locked out tea-estates and factories, a regular feature in Marxist Kerala.

Kurishu Michael, one such displaced estate worker, came to know about a medicinal plant collection agent in a nearby town when he was hunting for a job. The agent familiarized him with the commonly required plants, of which he selected three items that would fetch the best returns

³⁵⁹ Roots are collected along with leaves to check herb identity. Before weighing they cut the rest of the plant retaining roots along with 5-10 inches of the stem. The hardy stem and roots without leaves stay fresh for almost a week.

³⁶⁰ When the prices are not attractive they dry it so that they can sell at a premium. A kilo of dried material fetches about ₹ 40-60 (\$0.8-1.2). It takes around 4-5 kg of wet herb to make a kilo of dried material.

including *kurunthoti*. His range of collection is around 25 sq. kms. from around his residence. Though all the three herbs are found in proximity, he finds it easier to collect one a time, and while picking one, he identifies sources for the other herbs. The distribution and biomass of herbs is an important factor influencing collection, besides its market value; it is a determinant factor in returns per unit of time³⁶¹. He collects other herbs from the commons, but prefers to collect *kurunthoti* from farm land; in spite of the rain uncultivated earth is far tougher to dig up. A four acre farm can fetch an average 60 kg of wet herb. If the farm is small he has to visit 4-5 farms a day; it is not always easy to get permission from the landowners. Though they do not care about the value of the material being plucked, most of it being weedy growth, they are uncomfortable with letting unknown people into their property. He gets around 40-50 days employment in the season, earning ₹ 300 (\$6) a day.



*Fresh herb transport on bike from
wholesale market to factory,
Thrissur*

Even those with best of intentions find it difficult to stick to their goals of conservation in an open access situation. ESAF (Evangelical Social Action Forum), development outfit of a Christian evangelical group headquartered in Thrissur, discovered a niche in the growing medicinal plant market in 2006. They now gross an annual ₹ 5-6 mn (\$0.1-0.12 mn) from medicinal plant collection alone, 70% of which is contributed by *kurunthoti*. Their primary collection is focused around 7-8 herbs involving around 300 collectors, mostly from women's SHGs. They claim their presence has made a difference in the local market to force traders to give equivalent prices. As a voluntary organization without sole aim of commercial gains they expected the collection to be sustainable. But once they get into trade they have realized a few things. They initially burnt fingers being generous to collectors failing to take into account wastage rate³⁶². Their primary focus is to organize livelihood resources for people, but the labor supply is not dependable, and they ended up sourcing from traders. To stay as a recognized and trusted supplier it was important to maintain schedule commitments. For the same reason, they were

³⁶¹ Also noted by Muraleedharan et al (1997) who found density and distribution as limiting factors in NTFP collection.

³⁶² The wastage rate was very high, up to 40%. So they ended up getting a dry weight of 6:1 instead of the expected 4:1.

unable to stick to sustainable collection; plants were often collected before flowering. In an open access situation, it made no sense to follow rules of sustainable harvesting. “If we did not collect, someone else would” sighed a staff member, with frustrated resignation.

7.6 Medicinal plant farming in Kerala: Problems and prospects

7.6.1 Factors contributing to unviability of medicinal plant farming in Kerala

Dr. M. S. Swaminathan, the architect of Green Revolution suggested that the North Eastern stretch of Kerala be “converted into a bio-valley based on the cultivation of medicinal plants” (Hindu 2009). Thriving ayurvedic industry and the tropical vegetation together create a mirage of ‘green Kerala’ as an ideal haven for medicinal plant farming. But several factors contribute to making medicinal plant medicinal plant farming unviable in the State, the most important of which are the following:

1. High cost of land and labor and competition from high-margin cash crops: Kerala’s excellent track record in land reform and equitable distribution has reduced the average size of land holdings to less than 0.4 ha. 90% of holdings are less than half a hectare in size³⁶³. High land prices coupled with high cost of labor makes farming an unviable proposition. Only crops with low labor inputs or those with high profit margins can survive. In 2009-2010, the farming sector contributed only 11.47% of the State’s GDP. Food crops account for merely 12% of gross cropped area, the rest devoted to high-margin cash crops³⁶⁴ (Kerala State Planning Board 2010). Recent water wars with Tamil Nadu has brought into relief Kerala’s dependency on neighboring states on rice and vegetables. Labor is not just expensive, it is unavailable. A fresh herb trader asks a valid question, “We are not even getting laborers to pluck herbs that are freely available, how are you going to get anybody to do farm work?” He complained that the National Rural Employment Guarantee Scheme was worsening the situation.

2. Price volatility and competition from free wild resource: Medicinal plants have not reached the stage of open commodities. There are no established marketing channels; prices are volatile because of unpredictability in demand and supply. Availability of free forest resource makes prices too low for the already unviable farming sector to compete. It is therefore not surprising that an estimated 8% is all

³⁶³ 200 thousand farms are between 1 and 2 ha., 75, 651 between 2 and 4 ha., 16008 bet. 4 and 10 ha., 2735 above 10 ha.

³⁶⁴ Rubber, coconut, banana and spices.

what ayurvedic industry sources from cultivation (Sasidharan and Muraleedharan 2009). Even among the 19 species listed, most are historically cultivated for other markets, like spices (e.g., ginger, turmeric), cosmetics and perfumes (e.g., *kacholam*, *inchipullu*, *ramacham*), dye (*pathimukham*)³⁶⁵.

3. Non-standard material use and complexity of medicine production schedules: The most important commodity in the medicinal plant market is 'information'. Though all trade thrives on some amount of information asymmetry, it plays a critical role in medicinal plant trade. Complexity and variability of material makes it difficult for an average farmer to understand market demand. Firstly, manufacturers patronize different species/varieties.³⁶⁶ Secondly, production scheduling is complex because of the number of ingredients that go into a single medicine. Raw material schedules have to be coordinated based on seasonal availability of fresh and perishable material. Since it is too complex for manufacturers to handle, they let the agents do it for them. Traditional suppliers have a high degree of accumulated metis. They are not mere suppliers, knowledge-intensive material managers. Individual farmers bringing in discrete material poses a problem to large manufacturers.

Biju has been growing *neela-amari (Indigofera tinctoria)*³⁶⁷ for 25 years in an acre of land. As the chief ingredient of the most popular ayurvedic hair oil of Kerala, *Neelibhringadi*, the herb is always in bulk demand from ayurvedic manufacturers of all sizes and hues including those who specialize in cosmetics. Growing is easy, the yield is good and if there is demand, he can even do multiple harvesting (up to 3 times) garnering up to 5-6 tons of yield³⁶⁸. But he says, "it is not the growing but the marketing that is complex". He could venture into this only because of insider understanding of the market requirement that he acquired in his youth as a helper to his uncle who supplied the herb to pharmacies. But despite that, it is a struggle. First hurdle is variability of material. There are two kinds of *amari*, blue and white, that give blue and green tint to the oil respectively. Two large manufacturers to whom he tried supplying to were found to be using the white variety due to historical low-priced supply from Tamil Nadu (₹ 8 - 14 (\$0.16-0.28) Vs ₹ 20-40 (\$0.4-0.8) for the blue).

³⁶⁵ *Koovalam* and *Ashoka* are listed, but these are unlikely to be cultivated on a commercial scale. If the total demand for the 12 herbs are added up, it amounts to 866 tons, that is a mere 4.3% of the 230 heavily used medicinal fauna.

³⁶⁶ E.g., three varieties of *Chittaratha* are in use. Certain varieties of *Vayambu* are not preferred because they are too fibrous. The gooseberry is preferred for *Chyawanaprash* is the pulpy variety whereas the juicy variety is preferred for oils.

³⁶⁷ A branching shrub that grows up to 2 m. high. The whole plant is used as the source of the drug 'Nili'.

³⁶⁸ Though theoretically per acre yield could go up to 15 tons, 5-6 tons is what one can practically expect to get. One year he lost the entire crop due to a virus infection.

Though they know blue is the right variety, they do not want to upset their established production style³⁶⁹ and alter the product's look and feel, not to mention that it would also affect their profit margins. The proprietor of Kalan Pharmaceuticals, Dr. K. P. Jose, says that he initially tried to raise a ruckus about the color discrepancy of products in the market, but eventually yielded to the request of significant others to avoid making life difficult for other manufacturers. His company is one of the offshoots of the Kalan vaidyan family of Nellore whose brand name is synonymous with the classical hair oil.



Neela amari, Indigofera tinctoria

Production schedules complicate the matter further. Despite widespread use, buyers are elusive. *Neela-amari* is required along with other raw materials like *bhringaraj*, *uzhinja* and fresh gooseberry. *Bhringaraj* is a highly perishable fresh herb, unlike *amari* which has a longer shelf life. The movement of the most perishable herb determines the movement of the rest. Those who have the capacity to supply all the material get the call, and naturally, it is always those with greater muscle power. Given all these factors, once in 5-6 years Biju gets lucky and gets a good money for his crop. He makes his living supplying to two large pharmacies regularly, but it is an uphill task. Despite being among the largest, Vaidyaratnam sticks to its traditional style of production tuned to the supply of 3-5 kilos provided by women pluckers who collect it from the commons. The company is not in a position to take in large quantities and finish large batches. The second is the State pharmacy to which he is a rate contract supplier, the only silver lining amidst dark clouds. He has quoted ₹40 per kilo for the current year, but he says even at that price it may not be viable because their scheduling may not match the supply. He has 5-6 tons of standing crop that he is willing to sell at ₹ 12-14 (\$0.24-0.28) per kilo, but there are no buyers. This is a handicap for farmers, unlike a free resource that can be collected as per choice, they are forced to sell when the time of harvest comes. Often, their helplessness is exploited by traders who use the opportunity to bargain for lower prices. Some agents buy small quantities (10-25 kilos) from Biju, which he suspects are meant for small manufacturers. Despite knowing the market so well for so many years, with his farm located right in the hub of ayurvedic manufacturing, he is

³⁶⁹ Manufacturers also have futuristic considerations. They would be in trouble if they were to alter the production and fail to get the material in the future. They feel it is wiser to stick to a material that is available in plentiful and is low priced. Whatever be the raw material price, a classical product has limited price elasticity.

unable to make direct contacts even with smaller pharmacies. He says, “I think manufactures are not comfortable with small suppliers like me, they would like each supplier to be responsible for large number of items”.

4. Unpredictability of price and quality: Manufacturers also have to deal with quality issues. Unlike collected material that they can sample, choose and discard at will, in agreeing to buy farmed material they are taking a risk. Most lack the capacity to get into a full scale backward integration, to supply the know-how and supervise the process to ensure quality. Dr. K. Anil Kumar, Executive Director of KAL narrated the company’s bitter experience with contract farming. Out of commitment towards medicinal plant farming, they had made a buyback agreement with farmers in Karnataka for growing *ashwagandha*, but suffered heavy losses because the farm produce was of poor quality. The farmers had to be paid to meet their commitment but the material could not be made use of³⁷⁰. Such experiences make manufactures wary of long-term commitments. Price is another deterrent; making a prior commitment takes away the manufacturers’ freedom to buy raw material at the lowest price. Ayurvedic manufacturers do not have a high profit margin like biomedicine; cost of raw material accounts to 35-45% of the turnover. Adding the cost of labor intensive production and distribution, this leaves little room for maneuver.

4. Agronomical barriers: Farming medicinal plants have several other challenges in terms of cultivability. Firstly, agronomical know-how of medicinal plants is still in its infancy. Of around 400 plants used, only around 30 are amenable to cultivation. Secondly, even if cultivable there can be real and perceived differences between farmed and wild plants in medicinal quality (Sheldon et al 1997) and other features like for instance, shelf life³⁷¹. Thirdly, a whole class of medicinal sources like trees and other plants and creepers with long maturity period are unviable to grow on prime farm land. *Maramanjil*, a woody creeper takes 9 years to reach maturity. Trees like *koovalam* need 9-10 years and *Ashoka* 15 years to be ready for harvesting³⁷². Herbs that pass these hurdles like *brahmi* or *tulasi* happen to be low-priced, high-labor intensive crops. Some or all of the factors have to come together

³⁷⁰ The details were filled in by pharmacognosist Dr. Sarala Samuel, Senior Manager R&D, KAL who also showed me samples of the various grades of Ashwagandha. It was not the farmers’ fault, the agronomy of the plant was unsuitable to the region.

³⁷¹ E.g., the shelf life of the wild *Shatavari* tuber is one year whereas the cultivated crop stays not more than 2-3 weeks.

³⁷² Hence unviable unless grown in waste lands. The potential in Kerala is not high given that only 2.4% of the total available land is cultivable waste, 0.6% is barren and uncultivated land.

to make the plant a viable crop, which rarely happens. *Koduveli*³⁷³ is one such rare plant. Its bulk demand for production of ayurvedic soaps and rarity in the wild keeps the price high and stable. Of late, it is growing in popularity for boundary cropping with crops like pineapple and tapioca; the acidic medicinal tuber that makes harvesting and purifying an arduous task is useful in keeping rodents at bay. And being a shade-tolerant crop, it falls into the narrow range of crops that can be intercropped with rubber. While viability in Kerala is low, other regions in India may be better suited for medicinal plant farming³⁷⁴. For manufacturers like Himalaya and natural extract companies who use a few herbs in large scale, contract farming becomes a viable option.

7.6.2 Types of farmers

Despite lack of viability, there are a variety of actors who participate in medicinal plant farming in Kerala that include: 1. End users who produce for their own consumption 2. Traditional suppliers historically linked to the supply chain and 3. New subsidy farmers (since mid 90s).

1. End users who produce for their own consumption: This category includes practitioners³⁷⁵, manufacturers, household users, medical colleges and recently, spas and resorts. Some farms are maintained mainly for demonstration³⁷⁶. Of late, it has become fashionable for ayurvedic resorts to boast of medicinal gardens to boost their claim to authenticity. Some of them also have a requirement for a few fresh herbs for medicines that are freshly made for administration of therapies (see Section 9.3). Most medium and large manufacturers boast of vast medicinal plant farms (for example, AVS has a 200 acre farm). The average contribution of such farms to production ranges between a paltry 1-5% of total requirement.³⁷⁷ But given the hurdles, some achievements are substantial. For example, AVS has achieved self-sufficiency in four plants including *brahmi* (60-70 tons in 10 acres). It has also involved around 100 small farmers to achieve a yield of 3-5 tons from 8 plants.³⁷⁸

³⁷³ The plant gets mature in 18 months, yields an average of 3 tons of dry tuber per ha., fetches ₹ 80-120 (\$1.6-2.4)/kg.

³⁷⁴ E.g., plants like *Tulasi* and *Brahmi* are cultivable in Tamil Nadu due to abundant land and supply of cheap labor.

³⁷⁵ Shanta, a single-root practitioner in remote rural Idukki, grows 10-15 plants in her 5 cents land, for the rest she depends on the commons. Annakutty, a veterinary specialist won annual farmers' award instituted by a large manufacturer. In her half an acre homegarden she has cultivated with great care around 70 medicinal plants and trees.

³⁷⁶ These are maintained by most medium and large manufacturers, educational and research institutions. Some are very large, for example AVS has a demonstration plot of 8 acres with 700 species of plants.

³⁷⁷ Estimates of three large and three medium sized manufacturers.

³⁷⁸ *Ramacham, adapthiyam, chethikoduveli, palmuduku, shatavari, pichakam, chengazhnir kizhang, kattupadavalam*. These are intercropped with coconut/ arecanut or grown in homegardens with other mixed crops. AVS promises to pay a fixed base price or the market price whichever is highest.

2. Traditional suppliers: Perhaps the only exclusive ayurvedic commodity sourced historically from cultivation is the index plant *njavara*, a medicinal variety of rice. *Njavara*, that was marginalized like many other traditional varieties of rice has bounced back post tourist commodification of ayurveda (see Section 9.3.3). But only a small group of farmers grow the variety, most of them concentrated in Palakkad district. Most other traditional farmers of medicinal plants either grow monocultures of established crops like ginger and turmeric or homestead farmers who do mixed cropping of small quantities of niche herbs in small homegardens. Such farms are typically found near areas with high manufacturer concentration.³⁷⁹ Some supply to pharmacies directly, but most supply to fresh herb contractors who tell them what and how much to farm³⁸⁰. The most important of the farmers, especially those who do high value niche farming are those in the business of fresh herb collection and selling. They may not be often recognized as farmers, but by virtue of their access to critical information on demand and supply they are at an advantage. At the lowest rung are fresh herb collectors who grow a small number of plants in their backyard³⁸¹. *Ahmad*, a larger fresh herb collection agent grows a hectare of the forest herb *karimkurunji* along with a few other trees³⁸². *Abdulla's* family, a fresh herb supplier for three generations cultivates *koduveli* and *pichakam* in two acres of land. *Mohammad*, a large fresh herb aggregator grows small quantities of high 20 different high-value herbs and trees in an acre of home garden space.³⁸³ *Shaji*, the raw-drug shop seller in Thrissur who doubles up as a fresh herb agent (mentioned in Section 6.3) cultivates a few critical medicinal plants. He planted a tree of *neermaruthu*



Karimkurunji farm, Malappuram

³⁷⁹ Given the low margins, proximity to manufacturing center is a determining factor in viability. The greatest concentration of traditional medicinal plant farmers are found in Thrissur and Malappuram. For example, a farmers' co-operative society near Kottakkal that I interacted with, had 30 farmer members, the largest of whom had 5 acres of medicinal plant farm. Two types of herbs are generally farmed, viable ones like *Chethi Koduveli* that fetches ₹ 80-120 (\$1.6-2.4) per kg and those unavailable in large quantities in the wild like *Tulasi*, *Pichakam*, *Chengazhneer*, *Neelaamari*.

³⁸⁰ Farmers and manufactures both lose substantially on the margin, but this is the only viable manner in which farming gets organized to produce what is required, and avoids the problem of growing medicinal crops that have no buyers.

³⁸¹ For example, fresh herb collector Johannan grows a few plants in the backyard of his 10 cents land along with other vegetables. These include trees like *Karinochi* and plants like *Tulasi*, *Vellakunni*, and *Ummam (Datura)*.

³⁸² His farm is 40 minute of walk from his house on a hilly land unviable for any other crop. *Karimkurunji* is a small gregarious plant that needs shade to grow, but does not need much care. The low price (₹ 8-10/\$0.16-0.2) per kg of fresh herbs) makes it viable only for a fresh herb supplier.

³⁸³ For example, he could supply 25 kgs. of fresh *Pichakam* flowers at the price of ₹ 250-300 (\$5-6) per kg.

15 years ago observing that the market variety derived from the purple-flowered variety was the wrong source. He said, “Since it is a cardio-protectant, it is critical that the vaidyans have the right material”. A single tree meets his requirement; the bark grows so fast that it can be peeled every month.

3. New farmers: In the mid and late 90s, with the growing popularity of tourist Ayurveda and the rising sound bites of a global herbal market, medicinal plant farming began to get policy attention. In Kerala, the first major policy drive in Kerala was in 1995 leading to the emergence of the first subsidy medicinal plant farmers. The National Medicinal Plant Board set up in 2000 initiated a subsidy program and prioritized list of medicinal plants for farming. The Kerala State Medicinal Plant Board (SMPB) has executed this along with several other promotional schemes that led to cultivation of medicinal plants in waste land, school gardens, jail premises, government hospitals, worship centers and so on. Over a period of nine years (up to 2009-10), subsidies had been awarded to 104 projects that led to medicinal plant cultivation in 2500 acres. The initial lower limit for subsidy eligibility was 5 acres which was revised in 2006 to accommodate small farmers provided they pool their land together. This policy has led to the formation of many medicinal plant farmers’ collectives.

But subsidy schemes can lead to steep price drop and kill the market for farmers and collectors (e.g., the fate of aloe vera in Tamil Nadu)³⁸⁴. The mid 90s subsidy drive of the Kerala government had led to a glut leading to a price crash (Suneeta and Chandrakant 2000).³⁸⁵ The farmers find that when prices drop manufacturers refuse to honor the contract. However, officials in the SMPB are upbeat citing the success story of Vanamoolika, an NGO that involved tribal people to cultivate medicinal plants in 144 acres of land in Wayanad buying back raw material worth ₹ 300,000 (\$6000) for their ayurvedic/herbal product unit³⁸⁶. Though the project team at Vanamoolika is committed, returns are too low (₹ 2000 or \$40 per acre) to make the project sustainable or replicable. Of the four subsidy

³⁸⁴ This hardy cactus plant is not only used in Ayurvedic medicines but also in cosmetics and nutraceutical industry, and has a good demand. Given its high yield (22 ton of biomass/ha) and ease of growing, several farmers took it up. Soon the price dropped from ₹ 8 (\$0.16) to ₹ 2.5 (\$0.05) per kilo.

³⁸⁵ In 2010 AVS launched a scheme with NABARD funding to propagate two plants (including *kattupadavalam*) with a target of covering 200,000 households in 3 years. If this is successful, tribal who collect/farm this plant may be losers.

³⁸⁶ Vanamoolika in Wayanad with the use of subsidy of ₹ 300,000 (\$6000) for 3 years (2006-9).

farmers interviewed³⁸⁷, two were successful in growing plantations of gooseberry³⁸⁸ though they were not successful with other plants. Another farmer from a vaidyan family said that he found the subsidy a good opportunity to explore the commercial potential of an activity that was until then a hobby. But he found that the only crop viable in the market was *koduveli*. The most successful of the lot was Abdulla, the fresh herb trader mentioned above, who is already a well established medicinal plant farmer. Talking about the new subsidy farmers, he said that for most of them, the passion lasted only as long as the money lasted.

Farmers are required to have a buyback contract from a manufacturer in order to be eligible for subsidy. But some of the farmers participating in the subsidy promotion workshop organized by the Kerala Agricultural University complained that manufacturers do not honor the contract. A silver lining appeared when State pharmacy Oushadhi took the initiative to earmark 25% of its raw material requirement (Since 2007-8) from farmers at tendered price or market price whichever is higher³⁸⁹. Oushadhi found it easy to take this step as it did not have the constraints of a commercial company³⁹⁰. But reportedly some trader-farmers use it as a front to supply herbs that are not cultivated³⁹¹. There is no mechanism to double check the source of each supply load.

Even without the lure of subsidy, there are a sizeable number of entrepreneurial farmers in Kerala open to new ideas, but after a few bitter experiences they are cautious. Formerly hyped up herbs lead to disastrous farming fads. The *safed musali* hype in which many farmers burnt their fingers planting an unknown medicinal crop with a hyped up market is an extreme example of how information asymmetry can lead to disaster.³⁹²

³⁸⁷ Of the six I selected to track down for an interview, two were suspiciously elusive.

³⁸⁸ One farmer had 17 acres of gooseberry under subsidy, which is also a certified organic farm. He started farming in 2002 and supplied 12 tons of gooseberry in (2008-9) to AVS at ₹ 17 (\$0.34) per kg. He cultivates the juicy variety which is not used for Chyawanprash but mainly for oils like Neelibhringadi.

³⁸⁹ Reportedly risen to 50% now as informally told by a respondent from Oushadhi in March 2012.

³⁹⁰ But a veteran supplier said the company was struggling to juggle farmers' deliveries with the production schedule.

³⁹¹ E.g., a farmers' co-operative was found supplying 9 herbs on contract, all from homestead and forest peripheries.

³⁹² The hype was kicked off by some companies in Hyderabad who created a rumor of the herb's potential and made a fortune selling high priced saplings promising buy backs. When the time came to harvest, the companies had vanished. Because of the huge glut in the market, prices crashed. People lost both the opportunity cost and the investment made. Homestead farmer Siju says he burnt his fingers but he had invested only a small amount. Many others got into debt. This is not different from other farming hypes in Kerala like cocoa and vanilla. A farmer noted another instance of a manufacturer selling a *Koduveli* cutting for ₹ 10 (\$0.2) with a buy back offer, when the per kg prices were only ₹ 10 (\$0.2)!

7.6.3 Economic stakes in the forest: farming Vs collection

Statements about laziness of the STs and their reluctance to farm were heard from various quarters. A large manufacturer who made a sincere attempt to get herbs cultivated on contract by 25 select tribal families, was disappointed with the results. The general assumption was that the STs were marginalized, that they needed cash income and hence they ought to be ready to take up any cash bringing activity. However, interactions with various ST communities revealed several contradictions. Constraints for farming were different for each community depending on its access to land, familiarity with cultivation, access to cash crops, need for and alternatives to earning cash income. The following situations were most commonly encountered in the sampled regions.

- For relatively isolated tribal communities restricted to forest territories, MFPs are the only source for cash income. But paradoxically plants that grow easily in the habitat are those that are abundant in the forest, and those that are economically viable do not grow in the forest³⁹³.
- The most marginalized of the STs are those who depend on MFPs for their livelihood, but cannot participate in cultivation because they are landless or have leased their land to non-tribal cultivators³⁹⁴.
- NGOs/government officials/pharmaceutical companies who interact with STs persuading them to cultivate medicinal plants find that their projects fail because tribal people are ‘lazy’ or ‘disorganized’. Anderson (2000) in his study of ST communities in adjacent regions in Tamil Nadu notes that NGO workers with a certain idea of ‘development’ get frustrated with tribal people who do not meet their expectations. Accounts from tribal elders reveal that their requirement for cash was limited, they had little motivation to devote their valuable time to earning.
- Rationale for MFP collection cannot be understood purely in economic terms. Many who engage in MFP collection do so because it is work they can do on their own terms unlike wage labor; there is no boss to please and they are in control of their schedule. Local traders recognize this. *Babu*, a forest produce collection agent says, “tribal people are happy to work when they get a contract because they prefer the freedom and flexibility to wage labor”. Some of them also use the opportunity to travel into the forest for recreation, socialization and adventure. *Mani*, in his early

³⁹³ For example, GSCS at Pottomavu unsuccessfully tried growing two forest plants that was in demand and not widely available (*kattupadolam* and *Maramanjai*). Both are conducive to farming. The former has a restricted habitat and is in short supply; the latter is banned from harvesting because it is endangered. But both are tough candidates for farming. They are hardy and luxuriant in their natural habitats, but are reluctant to grow elsewhere. *Maramanjai*, a woody climber, for instance, has a 9 year harvest window. All efforts to grow the climber through vegetative propagation has failed.

³⁹⁴ E.g., *Maniyarankudi hamlet* (Vazhathopu GSCS, Idukki); *Urulanthanni hamlet* (Kuttampuzah GSCS, Ekm).

20s enjoys going with a group of his friends for the collection of *karimkurunji* during summer, a gregarious forest plant harvested in large quantities. They hire a jeep and go into the deep forest combining work and recreation. But there are also reportedly some youth who have no affinity to the forest, who prefer wage labor and are drawn towards an urban life style.

- Communities historically accustomed to settled cultivation like Muthuvans and Kanis are not much dependent on NTFP cultivation for livelihood because of cash crop alternatives that are more lucrative. They live in forests and forest peripheries where the soil and climate are ideal for cultivation of spices such as cardamom, pepper, and coffee. Some of them have even begun to cultivate rubber. As mentioned earlier, the farming economy of medicinal plants has several limitations - very few of the herbs/trees are cultivable, most of them are low priced, and both market price and demand tend to highly unstable.

One successful story of farming: index herb *kattupadavalam*

For medicinal plant farming to be a viable proposition in the forest, the preconditions are these: 1. the community should have access to cultivable land and should be accustomed to farming 2. the plant should have a consistent demand and stable price 3. It should either have profit margin equivalent to or better than other cash crops or it should be easy to grow requiring low input or/and labor demands. For example, Muthuvans in Kurathikudi hamlet in the Mankulam forest region in Idukki district were found to be growing *manjakoova* in their gardens, which had a good and stable price because of its use in the cosmetic industry. They were growing it of their own accord despite the fact that it was available in the forest in plentiful, solely for the ease of harvesting. It was a low maintenance crop; all they had to do was to plant it in their yard, which being inside the forest was its natural habitat. Another feature that added to its viability was its long harvesting window – allowing flexibility to harvest when the prices were high or when there was a need of cash. However, such events of farming are sporadic and the scale too insignificant to be of any consequence. *Kattupadavalam* is the only medicinal plant that has been farmed in large scale in the Kerala forests thus far. Though the circumstances that led to its farming are political, it provides valuable insights into variables that affect the viability of farming in the forest land.

Outside the run-down building of the Devikulam GSCS in the town of Munnar, a farmer lands up with a cart load of produce (see image below). The material is a collection of dried creepers, each 10-

20 feet long with all its parts intact. Kumar, the assistant at the society, gets into a laborious process of checking to screen for un-dried material that if left could rot the whole bunch.



**Farmer unloading Kattupadavalam produce
Girijan Service Society, Munnar**

The creeper is *Trichosanthes cucumerina* var. *cucumerina*, of the family Cucurbitaceae. Though a close relative of *padavalam* or snakegourd, *Trichosanthes cucumerina* var. *anguina*, a common local vegetable, very few have heard of its bitter cousin in the forest, *kattu/kaipanpadavalam* (wild/bitter snake gourd). *Kattupadavalam*, like many other plants has multiple uses in the ayurvedic pharmacopeia³⁹⁵. (For details on its ayurvedic pharmacology, see Appendix F). The drug

source is the whole plant without fruits. The Sanskrit word *patolah* from which the local word derives indicates its inclination to sprawl on the ground. Unlike the other index plants, it is used in relatively few medicines, but because of its rarity it commands a better price.³⁹⁶

Though it has a wide habitat, most of the Kerala ayurvedic industry's requirement is met from the restricted high-range forest habitat³⁹⁷ that falls into the collection areas of three GSCS, Devikulam, Adimali, and Kothamangalam of which the first contributes lion's share of the herb.³⁹⁸ What is intriguing is that for the past three years (as at early 2008) their entire collection was sourced from cultivation in tribal hamlets. Given the travails of medicinal plant farming among tribal communities, this seems like a puzzling phenomenon. Investigation shows that the circumstances that led to its farming are fortuitous.



**Farmer Ayyappan, Marayur
Kattupadavalam**



Though not representative, its biography provides valuable insights into stakes involved in farming. The Munnar GSCS staff members are eager to share their story of initial frustration and

³⁹⁵ It is useful in skin and digestive diseases, respiratory problems, cardiac debility, ulcers, inflammations, intermittent fever, alopecia, boils and general debility. In higher doses it is emetic and purgative (Warrier et al 1996: 323)

³⁹⁶ It is 6 times more expensive than *Kurunthoti* but 1/10th of its demand (133 tons in Kerala according to Sasidharan and Muraleedharan (2009), country requirement is 622 tons (Ved and Goraya 2007).

³⁹⁷ Munnar-Marayur in the Eastern high ranges (alt. 3000 - 7000 ft.) of Central Kerala.

³⁹⁸ One large manufacturer reported that they were sourcing part of their requirement from Gujarat.

eventual success. In the summer of 2005, the plant's commodity trajectory took a unique turn when they were denied the annual extension of lease because of interpersonal differences; the lease for their collection area was given to another GSCS. Ironically, theirs was the first of the Societies to get into the medicinal plant collection, a success story that had inspired the government to extend the experiment to the entire State. The team of committed people which was behind its inception was upset at this turn of events. The ST communities they served were substantially dependent on forest produce for their livelihood, the most important of which was *kattupadavalam*. The staff did some hard thinking and quick experimentation and realized it was easy to farm the herb in the forest region where the tribal people lived. It grew naturally in the high altitude region, on hill slopes, on well drained land with occasional irrigation. It needed hardly any input and was free of natural pests and predators. Three years ago (as at 2008) they put the idea to test; the experiment was a resounding success. Now the vine is grown in three tribal hamlets, Lakkam, Vattavada, and Gundala, each with an average of 60-70 farming families (See Appendix H for profiles). Farmers dry the plants and give it to the society's agent in Marayur³⁹⁹. All their collection is directly purchased by large ayurvedic manufacturers. In 2008, the society sold the material at ₹ 130 (\$2.6)/ kg of dried material, while they bought it from the farmers at ₹ 90 (\$1.8). The difference includes the agent's commission (5%), cost adjusted against storage loss⁴⁰⁰, transportation cost⁴⁰¹ and the society's commission (10%). The viability of this vine for farming in this region is because of certain features that give it an unique edge.

1. **Restriction on gathering:** A major factor that commonly impedes cultivability of forest plants is competition from the low-priced the freely available resource. Though political factors motivated the restriction of harvesting in this case, it gives a working example of how restrictions on harvesting of a wild resource can enhance its farming viability.
2. **Restricted availability and consequent high price:** Though the herb is not endemic, its availability in large quantity is restricted and it has been slow to respond to cultivation efforts elsewhere. Because of these factors, the price remains high, around four times the price of an average herb like *kurunthoti*. The average medicinal plant that is cultivable in the forest is low priced (for example, *Karimkurunji* is ₹ 8 (\$0.16)/kg. of wet herb, Chunda is ₹ 5 (\$0.1)/kg).
3. **Ease of cultivation** - Strangely for a herb that is so reluctant to take roots elsewhere, it behaves differently at home. It is hardy, grows luxuriously similar to its vegetable counterpart. It needs almost no labor or other input, no irrigation and no weeding. Most critically, the plant is not only

³⁹⁹ The local Vana Samrakshana Samiti (VSS) and ESAFI, an NGO also act as collection agents.

⁴⁰⁰ The crop reduces to 15-20% when dried. It is important that the fruit is removed before drying because they are slow to dry, and if unnoticed can spoil the entire bundle. The average storage loss is 10-20% due to incomplete drying.

⁴⁰¹ It travels 7-8 hrs to the destination, at the transport cost of ₹ 12,500 (\$250)/ truck load (2500 kg), i.e., ₹ 5 (\$0.1)per kg.

relatively pest-free, it is unattractive to forest animals. This bitter plant they consider a godsend; not even the goat with its proverbial appetite to anything green was interested.

4. **Short maturity period and long harvest window** - It only takes 6 months for the plant to grow and be ready for harvest (from the sapling). If the prices are down in the harvest season, the plant can be harvested anytime in the next 2-3 years; the biomass would only increase.

Overall this is a success story that does not seem to have too many loopholes, but there are some looming concerns. The GSCS staff said there was hardly any illegal collection when they were collecting from the forest, but paradoxically, cultivation provided an easy cover for illegal forest collection (an informal estimate being 20-30 tons annually). Secondly, there are rumors that farmers in Kodaikanal, a hill resort in Tamilnadu known for vegetable cultivation, have begun to cultivate the crop. If farming picks up in such regions, the exclusivity enjoyed by the ST farmers may not last. It could also lower prices making it less viable for small scale cultivation. Though it grows easily in the high-altitude Munnar-Marayur region, it is no competition for cardamom which has a market price six times higher.

7.7 Ayurvedic Industrial cluster: potential to bridge the producer-supplier gap

The Confederation for Ayurvedic Renaissance - Keralam (CARE Keralam), a project initiated by Department of Ayush under the Development of AYUSH Industry Cluster Scheme in mid 2000s formally began operations in mid 2011 with 108 members. This is the first ayurvedic cluster in the country, following which many more have been approved. Among its several objectives to empower the manufacturing sector in Kerala, an important aim is to break the monopoly of traders and enable manufacturers to procure raw material directly from farmers and collectors. As a step towards this objective, in July 2012 it entered into a memorandum of understanding (MoU) with the farmers' consortium set up by the State Medicinal Plants Board (SMPB) and Horticulture Department of Kerala, to procure medicinal plants. This is a significant development to



CARE Keralam complex, Thrissur

bridge the distance in relationship between the supply and production nodes. While it certainly has stepped in the right direction, its success in breaking the monopoly will depend on its ability to provide an effective replacement to the fresh herb trader, in other words its ability to get a grip on the complexity of inventory management.

7.8 Conclusion

Medicine production in the industrialized era is mainly characterized by alienation of medicine maker-collector relationships that in turn has repercussions for quality of medicine produced, conservation of resources and livelihoods of people. Mass production requires large scale supply of raw materials that naturally increases the distance of medicine producers from the raw material. This distance creates space for a number of problems to crop up. These include identification errors, adulteration, and various other issues associated that have adverse affect on raw material quality. Small scale manufacturers and practitioners making medicines to meet their clinical requirement are able to circumvent some of these problems. They are able to make use of their knowledge to access quality resources creating exclusive channels of circulation. The other side of the coin is the alienation in collectors' relationship with plants which has to be seen in the larger context of people's relationships with resources in general. These relationships are best understood in terms of the stakes people hold in the resources, that can be differentiated as cultural and economic. Cultural stakes work better for conservation whereas economic stakes work as far as stakes are long-term and there is territorial exclusivity in harvesting.

For collectors in the forest, medicinal plants historically carried dense symbolic value as part of their health care system. But with decline in their health care systems owing to official health care policies and cultural integration with the mainstream combined with alienation from their own habitats, forest-dwelling communities have lost much of their traditional cultural stake in the forest. In this context, they end up being mere suppliers of herb 'commodities' to ayurvedic industry, a medical system that they hardly have any access or affinity to. This situation of absence of cultural stake and escalation of economic stakes is conducive for resource overexploitation. Ethnographies of successes and failures show both potentials and shortcomings of the government's policy of allowing monopoly over collection of minor forest produce to tribal co-operative societies. Comparison between the ethnobotanical benefit-sharing model and the KIRTADS participatory training model demonstrate the superiority of cultural stakes over economic stakes in contributing to both livelihood and conservation. In non-forest areas, various factors associated with urbanization and shift in farming patterns away

from homegardens to cash cropping monocultures are some of the factors that have alienated people from medicinal plants. There is no direct replacement of cultural stake with economic here; economic stakeholders here are a minority of marginalized people. However, shift from long-term to short-term economic stake because of transition from full-time professional pluckers to casual laborers recruited by middlemen poses a serious threat to conservation.

Medicinal plant farming has been considered the best way forward to conserve forest resources, but the growth in this segment has been slow. This is especially true in Kerala where the farming sector has low viability owing to high cost of land and labor and preponderance of high-margin cash crops like rubber and spices. Ayurvedic manufacturers are often blamed for not being open to purchasing material from farmers, but several practical factors impede the transaction. The most important of this is the information and knowledge intensity of raw material sourcing and handling activities. While fresh herb traders are seen as exploitative, their role as knowledge-intensive actors is often ignored. Manufacturers heavily depend on the collective metis that these actors hold and are bound in trust-based relationships that go back from a few decades to a century.

The newly initiated ayurvedic industrial cluster project promises to bridge the gap between manufacturers and grass root suppliers to enable manufactures better control over price and quality. It aims to break the monopoly of raw drug traders and provide a better bargaining power to the industry, to enforce better conservation practices, and to encourage farming of medicinal plants. The success of this institution will depend on the extent to which it is able to supply knowledge-intensive services that the fresh herb traders have provided for almost a century now. Fresh herb collectors are perceived as exploitative; but their role as strategy managers is seldom acknowledged. Years of accumulated metis and hard work goes into the knowledge of raw material, reconnaissance and maintenance of a mental data base of resources, being constantly abreast of market knowledge and the ability to mobilize labor on a short notice. This role combined with their ability to take advantage of the high degree of information asymmetry in the ayurvedic commodity chain allows them to make high margins of profit, to the disadvantage of both manufacturers and collectors/farmers.

PART THREE

NEW WAVE OF COMMODIFICATION

PROLOGUE

The issues that were discussed in Part I and II centered around an older phenomena surrounding industrial era commodification. But what had attracted me to Kerala in the first place, was the contemporary phenomena of commodification that appeared markedly different from the earlier processes. This “new wave of commodification” surrounds the commodification of ‘services’, in contrast with the industrial era focus on ‘pharmaceutical commodities’. This shift of focus can be considered “paradigmatic” because it also changed the framework of ayurvedic commodification from “illness” to “wellness”.

The Marxist perspective on commodification used as the analytical framework to analyze industrial era commodification, is also useful in comprehending and analyzing the course of new commodification processes. A brief recapitulation of the former analysis will help in taking the argument forward. I had argued that ayurvedic medicine manufacturing industry in most of India had managed to break most of the natural and social barriers of the commodity to expand its catchment area. Though industry in Kerala had by and large managed to take ayurvedic medicine to the market working within the constraints of the classical commodity, some ‘social’ and ‘physical barriers’ (Kloppenborg, 2004) had to be broken, even if partially. At a social level, practitioners and consumers had to be convinced to stop making medicines and buy from the industry. The main physical barrier, the perishability of the decoction, was broken by the simple step of adding preservatives to extend its shelf-life (See Section 5.9).

But unlike in rest of India, commodification of ayurvedic medicine in Kerala had not sidelined the ayurvedic practitioner and therefore had not disrupted the integrity of ayurvedic practice. As I will elaborate in Chapter 8, western tourist interest in select elements of ayurvedic practice had drawn out some of the elements of such an integrated practice, especially the cleansing therapies (*Panchakarma*), and had paved the way for their commodification. What had looked as a passing fad in the late 80s, grew beyond expectation and snowballed to such an extent that Ayurveda was taken up by the State as one of the key selling points in promoting its newly burgeoning tourist sector. After the late 19th century industrialization, this was the first major twist in commodification of Ayurveda. Ironically,

Kerala which had resisted some of the earlier pressures of commodification, had now taken the center stage in the new market.

The most important external factor in breaking traditional cultural barriers was the entry of non-traditional stakeholders into the ayurvedic market, both in Kerala and at the all-India level. These newcomers were unconstrained by the practitioner ethos that had kept commodification of Ayurveda in check in Kerala. They had little regard for the sanctity of the therapeutic context, and therefore had no qualms in breaking the barriers of convention. Such stakeholders sought to break traditional boundaries of ayurvedic commodities, venturing to create new meanings and contexts. By doing so, they also opened up opportunities for existing stakeholders. Many small traditional practitioner families and new doctor-entrepreneurs who could not participate in the manufacturing segment, found it easy to participate in the service market that required far less capital and labor investment. The service market also provided for a wide range of opportunities beginning from household enterprise to five star enterprise, as is typical of all other services in the tourist market.

What initially looked like a dangerously corrupting trend had eventually gone on to create a dynamic atmosphere in an otherwise stagnant ayurvedic market. Though the traditional stakeholders, the manufacturers and other therapy-centric groups were slow to respond, by the middle of 2000s, it was clear that the temptation to exploit the new segments and new formats of selling had become impossible to resist. Large business houses who were hitherto oblivious of Ayurveda had begun to enter the market in a drove. Given the importance of tradition as a marker for authenticity in this market, and the complexity of technical know-how, the newcomers sought out traditional stakeholders to forge joint ventures. In 2002 the FMCG giant Hindustan Lever forged ties with Arya Vaidya Pharmacy, Coimbatore to create a new format of therapy centers. In 2004 an old manufacturing house was acquired by an NRI owned international health care business group based in US, leading to formulation of various new strategies including a network of wellness centers. In 2008 the Indian multinational business conglomerate Aditya Birla group acquired majority stake in a resort chain owned by a vaidyan-family to establish wellness centers across India. These developments might have worked as ice-breaker for the traditional stakeholder, who found they could make use of the capital and the

opportunity for innovation, without sullyng their own hands. Such joint ventures and tie-ups opened up new segments and spaces for the commodification of not only ayurvedic services, but also for ayurvedic medicines, either as integral part of service or as commodities in their own right.

In addition to attracting foreign and domestic tourists, *Kerala Ayurveda* had begun to acquire a brand value of its own in the domestic and global market of Ayurveda, both in medicines and services. As if to make up for the colonial West that had delegitimized the system, the tourist West was playing the role of a re-legitimizing. Across the country, clinics, practitioners, hospitals and manufacturers had begun to proffer *Kerala Ayurveda*. Not only was service taken out of the therapy context, outside Kerala, *Kerala Ayurveda* itself got dragged out of context and became highly vulnerable to intended and unintended diversions. The traditional checks and balances were no more in operation. Consumers outside Kerala who had no cultural knowledge of the practice, had no vantage point from which to gauge authenticity. This resembles others situations of commodities being commercialized out of their context, for example *qat* (Cassanelli, 1986). Just as western consumers of Congolese Soukous music (White 2000) and the consumers of oriental carpets in the United States (Spooner1986) who depend on erroneous measures of authenticity, new consumers of Ayurveda were struggling with information asymmetry. To use Appadurai's (1986) conceptual framework, the new market had created a "diversion" from its regular "path", and created a new "commodity context" for the selling of therapies outside its traditional context, the doctor's clinic. In the following chapters, I analyze the various complex paths this diversion has taken. Chapter one will be devoted to the discussion of the commodification of services, mainly focusing on the developments in the tourist market in Kerala. The chapter will also include a brief account of ramifications of tourist selling on the domestic market and its influence in other parts of India, especially with regard to commodification of 'wellness'. New developments in the commodification of ayurvedic medicine commodities will be discussed in chapter two. The discussion will cover a gamut of new commodities ranging from form-changes of classical medicines to medicine commodities that have co-evolved with commodification of services.

CH 8 FROM ILLNESS TO WELLNESS: SERVICE COMMODIFICATION

The new wave of commodification might prima facie appear to have created a major deviation from the way Ayurveda is practiced and consumed. Judging the extent of deviation from the vantage point of modern Ayurveda can be misleading, given that it is significantly influenced by a century of pharmaceuticalization. Medicine is just one of Ayurveda's four-pronged approach to treatment, the others being, cleansing (*Shodhana*), modification of diet (*Ahara*) and life style (*Vihara*). Unlike pharmaceutical commodification where it serves the interest of the capital to circumvent the ayurvedic physician, service commodification has the potential for a closer patient-physician interaction. Service commodification surrounds 'therapeutic procedures', and to a certain extent includes diet and life style advice in the form of 'expert consultation' bundled with 'therapy packages'. In a way, it brings the patient under the authority of the physician, who gets to be respected not just as a prescriber of medicines, but of diet, life-style, and spiritual-psychological advice. Though like any commodification, it has led to intended and unintended misinterpretations, it has also brought attention back to Ayurveda in its holistic integrity. Likewise, the shift in focus from illness to wellness is also in keeping with the spirit of Ayurveda, which in imitating the biomedical model, had got skewed towards a disease-centric approach⁴⁰². While Kerala experienced an intensification in the commodification of existing practices, elsewhere in India Ayurveda witnessed a paradigmatic shift. *Kerala Ayurveda* attained a brand value and spread to rest of India. In Kerala, new contexts and categories of commodities were created, bringing in new opportunities, challenges and controversies. These developments can be classified into four major categories:

- *New consumers*: Tourism generated new categories of consumers who brought with them expectations that quite often did not match with conventional ideas of what constituted ayurvedic treatment.
- *New category of commodities*: Therapeutic procedures and other services, the most important of them being Panchakarma and related therapies, emerged as commodities in their own right.
- *New spaces*: The move to 'tourist spaces' eventually spurred the growth of 'wellness spaces', from thereon spreading to 'biomedical spaces.'
- *New stakeholders*: This era marked the entry of new stakeholders, initially from the hospitality segment, eventually including a wide variety ranging from doctor-entrepreneurs to large business

⁴⁰²The disjunction between the philosophical orientation of Ayurveda to wellness and modern institutionalized Ayurveda has been noted by a few scholars (For example, Alter 1999).

houses.

Section 8.1 opens with excerpts of discussions from an online travel forum to showcase *new consumers* caught in the crossroads between medicine and tourism, treatment and relaxation, illness and wellness. A brief note of the rise of ayurvedic tourism in Kerala is presented in Section 8.2, followed by a description of Panchakarma, the centerpiece of the new wave of commodification in Section 8.3. The discussion of *new spaces and stakeholders* is clubbed together in Section 8.4. Four new categories of services that have recently emerged are classified and discussed. The participation of traditional stakeholders in new service commodification is discussed in Section 8.4.1. This is followed in Section 8.5 with a discussion of ‘identity crisis’ faced by various stakeholders as they enter unfamiliar spaces and deal with unconventional formats. Section 8.4.2 throws light on their struggle to construct authenticity, with focus on major themes, i.e., tradition, nature, spirituality and yoga. Section 8.5 focuses on the new booming industry of paraprofessional training and two related issues, i.e., the sidelining of traditional *Kalari* martial art practitioners (8.5.1) and spread of unregulated Ayurveda across the globe (8.5.2). In section 8.6, four salient consequences of service commodification are discussed: menu/package mode of selling therapies (8.6.1), emergence of Brand Kerala in Ayurveda (8.6.2), emergence of a domestic wellness segment (8.6.3) and expansion of the therapy segment (8.6.4). In section 8.7 I trace the evolution of service commodification and its historical roots in the wellness tradition of Kerala. A general discussion is presented in Section 8.8 which is followed by conclusion in Section 8.9.

8.1 Resort or hospital? Clinic or spa? : New spaces, new consumers, new questions

Excerpts from an internet discussion forum⁴⁰³ illustrate the issues and problems new consumers have to tackle in their new found pursuit of Ayurveda (Italics are mine).

Exchange on internet discussion forum: 1

A non-resident Indian who wants to take his mother to ayurvedic treatment in Kerala for stress and weight loss has put in a request for recommendation and suggestions have poured in. A non-resident Keralite from UK who spent 4-8 weeks thrice in the past five years in a couple of treatment centers,

⁴⁰³ [www. indiamike.com](http://www.indiamike.com)

after having located the centers with the help of friends and family, advises:

There are many 'resort style' ayurvedic places that have cropped up to cater for western tourists. All well and good but if the quality of treatment is the number one priority, I suggest that you seek out a *traditional place respected by the locals*. Many of them *lack western style comforts* and are basic and might look grubby to westerners. Not all speak English but there will be some and you can get by.

A British citizen living in Chennai points out “there are so very many hotels/resorts in Kerala offering Ayurveda at various levels of seriousness varying from sham to completely sincere and genuine”. She relates her positive experience in a German-owned beach resort in Kerala where the tariff is reasonable because the resort has no swimming pools or air-conditioning, focuses mainly on treatment, “*takes Ayurveda very seriously*”. Another respondent recommends “a place to avoid”, describing his/her bad experience.

The very first time I went to an ayurvedic clinic, it was in Goa...I was seduced by the title 'clinic' as opposed to rejuvenation centers. I was there for two months and was very lucky that i had an excellent doctor and one of the most experienced therapists..but it quickly became apparent that *they were moving away from ayurvedic principles to the 'lets make as much money as possible' principle*.

An Italian who has just returned from a week's rejuvenation in a resort in Kerala recommends the place, saying the location was not great, packages were expensive, and there was no time to have fun between them, “*not good for a holiday,*” but he says “*it is probably the best place for Ayurveda*”.

A Polish citizen recommends that he look for Ayurveda in hospitals, warning against massage parlors that like in many other parts of the world are “camouflaged brothels”. He says,

I have found the heavy handed hospital massages tough to handle while being administered, but the soothing effect that hangs around for the next couple of days is good, compared to the feel good but later feel just normal massages I have received from touristy places.

Exchange on internet discussion forum: 2

A complex query is raised from a Portland resident planning to go on a six month trip to India. She says going to India was her childhood dream, but she is highly confused between her priorities. On one hand, she wants to visit all the hot spots including the Taj. On the other hand she wants to spend five months at an Ayurveda resort, the main reason why she wants to go to India. In addition to that, before going home she wants to go on a three week pilgrimage. “I'm fairly ill and am looking for a very good resort where I can just begin to get better physically and emotionally. It's something I definitely can't

afford in the US. I need pretty intensive in-patient care". She has identified two resorts, but is not happy with their location. Her priority is to get well; she knows she should not be picky about the location, but she is afraid of getting homesick for the mountains. The one in her preferred location, the Himalayas, is too expensive for her budget which is limited to \$20,000 for the entire trip. She wants to know if there is anyone who had done 'medical tourism', and what the 'results' were. The first response from an Indian resident is matter of fact,

I think you should ask yourself first that what is your priority? *ayurvedic treatment? Or, the luxury of a resort? because I don't think they would come together.* If you find anyone offering you the same. ..You could bet that is just a touristic destination which has nothing to do with either ayurvedic medicines , or the real pleasure of staying in a resort.

A respondent from Brighton also asks her to make up her mind if she wants "a resort or Ayurveda." He is soon going to a hospital in Kerala recommended by many people, which he says "has been around for more than 80 years", and is a "real deal". He once had a bad experience with a clinic that the manager was trying to make into a resort "at the expense of ayurvedic principles". Too many places are popping up with therapists without much training; he had heard that a "true therapist" should train for five years "before being let loose on a patient". Another respondent from Switzerland suggested AVS hospital as the "non-profit" hospital, a "real deal" in Ayurveda to which people come from all over the world for treatment. A British citizen living in India with considerable experience points out that every hotel in Kerala offers ayurvedic treatment, which is limited to a relaxing massage. But there are resorts that take Ayurveda seriously, employ qualified doctors, but he insists, "*They are still resorts, not hospitals*". Sympathizing with her 'not wanting to be confined to bed', he recommends a beach resort in Kerala that has a section devoted to Ayurveda.

The only person really qualified to give you a recommendation would be an ayurvedic doctor, but, should you decide on Kerala, you might enquire into K., it's a bit of a quirky place to stay, but the *owners also run an ayurvedic medicine processing factory, so they are certainly more than massage merchants.*

Another experienced respondent from UK writes

It depends what sort of treatment you want. There are a lot of charlatans in Kerala without any qualifications selling "ayurvedic" treatments. The state government is actively trying to shut down fake ayurvedic practitioners, but there are still too many ... If you are fit and well and you are looking for ayurvedic fun and relaxation it doesn't really matter where you go, but if you have an existing condition you really must make sure your practitioner is fully qualified or you could come to harm. I don't have any medical reason for having ayurvedic treatments, but I really enjoy going

to M's ayurvedic Clinic in Kochi. They have a general practitioner who will look after aches and pains and give you the most amazing massages, and a specialist in headache, migraine and sinus problems.

The queries in the above forums showcase the dilemma of the “new consumer” who is in search of “authentic Ayurveda”. The responses provide a bird’s eye view of the “new spaces” and “new categories of commodities” that have emerged in the market and the consequent confusion. The discussion also showcases the international nature of the emerging clientele. The exchanges expose a wide gamut of issues that surround the new wave of commodification. Unlike with medicine commodities where traditional consumers are caught in bind between a new form and the old, here is a consumer who has to decide what is authentic without having any cultural knowledge to fall back on. Discerning authenticity is complicated because the consumers themselves here are non-traditional; consumption does not fit into the traditional ‘therapeutic’ category. These are consumers with little traditional experience with Ayurveda, they do not know what they are looking for, and like the Portland tourist above, are quite often not sure what they want. They are dependent on experienced people to recommend an “authentic place”, but they have come up with expectations that themselves are in conflict with traditional parameters of authenticity. Spitzer (2009) in his study of Ayurvedic tourism in Kerala finds that many practitioners are disgruntled having to face such unconventional expectations. A practitioner he quotes differentiates between local patients who come to take some decoction and undergo treatment, the North Indians and NRIs request specific treatment, commonly a massage or a fancy procedure.

Within a short time, one can also see the evolution of the discerning consumer. The experienced tourists contrast *tourist style Ayurveda* which is *business-minded* and *goes against ayurvedic principles*, contrasting them with *serious treatment oriented hospitals*. They talk about *dubious quality, unqualified therapists, disguised brothels*, and so on. Unlike the consumers of oriental carpets who are easily misled by tradesmen (Spooner 1986), here internet forums provide for exchanges between consumers undermining the authority of the middlemen in setting standards or obfuscating information. Emphasizing the importance of information and lack of it, in the creation of authenticity, Appadurai (1986:43) points out, “much of the institutional structure and cultural form of

the bazaar is a double-edged sword which makes information hard to get". Internet provides a powerful forum for savvy consumers to overcome the information barrier.

An interesting new business model attempts to provide a solution in the form of "Ayurvedic call center service" to guide the confused consumer. Recently, one of the largest Indian multinational firms, the Tata business group tied up with the oldest ayurvedic organization in Kerala, the Keraleeya Ayurveda Samajam to form Traditional Medicine Resource Centre (TMRC), a consortium of eminent institutions in Ayurveda, to propagate Ayurveda and guard against "quackery". The news paper report on the launch proclaims, "Quack ayurvedic practitioners in the state will not have an easy time hereafter. A call centre identifying genuine ayurvedic centers and doctors will start functioning near Shoranur soon"(Financial Chronicle 2012).

What makes the determination of authenticity most complicated is the disjunction between consumer expectations and conventional formats of practice. Even apparently serious treatment seekers are looking beyond disease cure to enhancing wellness. The western tourist above who wants to combine serious treatment with tourism, desires to undergo treatment in a particular kind of a location and ambience. Though most of the respondents ask her to choose between tourism and treatment, one respondent recognizes her need of *being treated without being confined to the hospital bed*. Such patient-consumers are trying to address a health problem that has a psychological component and justifiably expect the treatment ambience to be relaxing. Trapped in stressful work schedules they want an opportunity to let go. Those who target this market have come to recognize this requirement and not surprisingly, even serious therapy groups are beginning to accommodate such needs. By conventional parameters, such a 'diversion' can be interpreted as 'distortion'. But the very idea of 'serious hospitals' focusing on 'treatment' arises from a conventional mindset of viewing health care as just a matter of treating disease by confining the patient to a hospital bed. Ayurvedic disease etiology, unlike biomedicine, lays an overwhelming emphasis on psychological causes for most diseases, and it can be rightfully argued that such trends are not inconsistent with the philosophy of Ayurveda. However, even new customers attempt to draw a line between hospitals and resorts in determining authenticity. Though theoretically it may be possible to make a genuine and appropriate combination

of the two, in practice, the stakeholders of tourist focused Ayurveda and therapy centric Ayurveda tend to be different, with the former guided by commercial interests and the latter rooted in practitioner ethos. Though it is rare to find them going together, such a possibility cannot be ruled out.

8.2 The Rise and rise of Ayurvedic tourism in Kerala

The origins of this new wave of commodification of *Kerala Ayurveda* goes back to early 80s. Western tourists who had been frequenting the Kovalam beach since the 1970s⁴⁰⁴, had been sampling various cultural commodities like *Kathakkali*, Yoga, *Kalari* and ayurvedic massage. By the mid 80s, tourist interest snowballed and ayurvedic massage parlors sprouted everywhere⁴⁰⁵. In the initial phase, there was an unchecked growth of massage parlors engaged in illegal drug and sex trade in the guise of Ayurveda. In the early 90s the state cracked its whip by making it mandatory for centers offering ayurvedic therapies to be manned by qualified doctors and by implementing strict policing. The trend soon spread to all other tourist regions in Kerala⁴⁰⁶. The key focus in ayurvedic tourism was on the Kerala tradition of Panchakarma. The first of the exclusive ayurvedic resorts, Somatheeram was founded in 1985 in Kovalam. The founder of the resort had played a formative role in the aggressive tourist marketing of Kerala Ayurveda. In the late 80s, he provided hospitality to an international press contingent to Kerala, getting them to write articles on the subject. In the mid 90s, realizing the business potential, the Kerala government added



Ayurvedic tourist centers proliferate, Varkala beach

⁴⁰⁴ Kovalam beach was a historical western tourist hot-spot. Its history goes back to the 70s when it was accidentally discovered by Hippie travelers on the way to Ceylon. It already had a dubious distinction for drug and sex trafficking.

⁴⁰⁵ The details of progression of this early stage of development of the Ayurvedic massage market is unexplored.

⁴⁰⁶ The most prominent being the Varkala beach in Trivandrum, backwater regions in Aleppy and Kumarakom, to the historic city of Fort Kochi and to some extent to hill resorts in Thekkady and Munnar hill station.

Ayurveda as a key selling point to its official tourism campaign.⁴⁰⁷ Co-incidentally, Kerala's value had risen owing to the decline of Kashmir in the tourist circuit, and the industry-starved state had just begun to realize the importance of the tourism segment to the economy. This was also a time when 'medical tourism' had caught up. Though the focus was on biomedicine, Kerala saw an opportunity to ride the wave by creating a niche of "ayurvedic health tourism". The tourism industry today credits the State for its aggressive and imaginative tourism campaign, for the special thrust given to Ayurveda, ironically the same reason why the State stands discredited by some of the traditional stakeholders of Ayurveda.

In 1998, the State Tourism Department introduced a scheme of self certification for tourist centers offering Ayurveda (*Green leaf* and *Olive leaf* certification). This move took Ayurveda from the medical to the tourist realm, a step that many traditional stakeholders of Ayurveda find objectionable. Today there are 39 Olive and 64 Green Leaf centers. In addition to this, wayside motels to five star hotels all boast of excellence in Panchakarma treatments, and the rates vary accordingly. The cost of an hour of treatment for a tourist can range anywhere from \$8-\$60⁴⁰⁸. Many of the resorts offer 14-21 day packages of Panchakarma treatment with accommodation that may cost anywhere from \$60 to \$2000 per day. An NRI blogger quips, "soon they will be selling it along with *parippu wada* (a popular snack) and *chay* at the *chayakkada* (tea stall)" (akin to saying, *selling with burger and coffee at the coffee shop*).



An Ayurvedic beach resort, attached is a restaurant and a beer and wine parlor

⁴⁰⁷ The State's "God's own Country" tourism campaign won several national and international awards, including seven times national award for Best Tourism State. Recently, in March, 2012, its new campaign "Your moment is waiting" has got the Golden Gate Silver Award at ITB Berlin. Germany, clearly the most important country in terms of demand for Kerala Ayurveda (NDTV 2012), is targeted with a special Ayurveda promotional in April, 2012.

⁴⁰⁸ Comparable treatments would cost \$2-\$4 in a regular Ayurveda clinic.

The State effort did not go in vein. Foreign tourist arrival increased nine fold in the past two decades.⁴⁰⁹ The contribution of tourism to the State's GDP went up from 0.25 to 7.7%. At the same time Kerala's share in foreign tourist arrivals went up from 4.97% to 11.16%. Though the ratio of domestic to foreign tourists is 12:1, revenue earnings are equivalent.⁴¹⁰ Ayurvedic tourism earned Kerala ₹ 60,000 mn (\$1.2 billion) in 2007-8. Around 1,45,000 foreigners tried out Ayurveda in Kerala (Singh 2009). A study of international tourists who visited Kerala between 2001-2003 found that 13.8% had come to Kerala mainly for Ayurveda treatment, 1.9% for Siddha and Unani, 17.6% for spa, 6.2% for yoga/meditation (Jyothis and Janardhanan 2009).⁴¹¹

8.3 Panchakarma – the new commodity

Brian, a 40 something tourist from Germany is visiting India for the second time. He had never heard of Ayurveda before this visit. His idea was to explore all the unique features of Kerala; his list includes *Kathakkali* (the dance art), *Kalari*, and Panchakarma. The medium range hotel in which he stays does not offer ayurvedic services, so he chose an independent Panchakarma center. The center, located within a star hotel complex,

caters to residents of hotels and resorts that do not provide ayurvedic services. *Brian* bargained for a packaged deal that included a Kerala special *Abhyanga* (whole body massage), *Shiordhara* and *Elakizhi* that together cost him ₹ 4800 (\$120). He had to consult a doctor, but that was just a formality. *Brian's* experience is



Panchakarma Center Ads Abound: Varkala beach cliff

⁴⁰⁹ From 66,139 in 1991 to 5,98,929 in 2008. Domestic tourist inflow increased 8 fold from 9,48,991 to 75,91,250.

⁴¹⁰ 1. Average length of stay for a foreign Vs domestic tourist is 16 Vs 6 days. 2. According to an estimate given by a tourist official, an average backpacker spends ₹ 6000 (\$120) whereas an average Ayurveda tourist spends ₹ 90,000 (\$1800).

⁴¹¹ biomedical treatment: 15.6%, Cosmetic surgery:10.5%, dental care 7.6%, eye care 7%, & recreation 20.3%.

representative of the quintessential foreigner sampling exotic treasures of Kerala on a tourist trail, on which Ayurveda had become a routine stop. The Panchakarma that *Brian* is so excited about, literally means ‘five actions’. It is part of *Shodhana*, one of the four modes of ayurvedic treatment which focuses on cleansing the body⁴¹² by eliminating the *doshas* accumulated in various parts of the body. Like the majority of the tourists, *Brian* would go nowhere near the actual Panchakarma, which comprises five procedures he would be unlikely to find pleasant. These include therapeutic vomiting (*vamana*), Purgation (*virechana*), nasal application of medicine (*nasya*), enema (*vasti*) and blood-letting using leeches or incisions (*rakta-moksham*). All five procedures can be performed, or some can be chosen, based on individual requirements.

The procedures offered in the name of Panchakarma are preparatory procedures literally meaning “preceding procedures” (*poorvakarmas*). These are classified into two: Oleation (*snehana*) and Sudation (*swedana*). The former is further classified into external and internal oleation. The theory is that oiling and sweating will open all the channels in the body and release accumulated *doshas*. If the body is subjected to purification without preparation, the *doshas* will eventually get firmly embedded in the tissues, aggravating the problem and weakening the body. There are over 40 procedures employed to induce oleation and sweating which can be performed individually or in combinations as required. Kerala came to be known for Panchakarma for not only preserving such procedures, but for using them as part of treatment-protocols. *Dharas* (procedures that involve the pouring of oil over the body) are used to treat mental disturbances, insomnia, *nasyams* (nasal cleansing procedures) for nasal congestion, sinusitis, and so on. There are also a less heard of class of procedures known as *Paschatkarmas*, meant to be followed after the administration of Panchakarma. While full-fledged hospitals offer therapies as per requirement, resorts, hotels, spas and tourist oriented centers offer anywhere from 5 to 20 procedures⁴¹³.

⁴¹²The other three: *Shamana* (palliation using medicines), *Ahara* (dietary management) and *Achara* (life style management).

⁴¹³ The most popular are *Uzhichil*, body massage with medicated oil; *Pizhichil*, subjecting the body to a constant flow of medicated warm oil; *Ela Kizhi*, application of medicated oil with a bolus filled with herbs, *Njavarakizhi*, application of medicinal rice bolus; and *Shiro Dhara*, rhythmical pouring of oil or medicated buttermilk on the forehead.

Brian was obviously unaware of all these intricacies. For him Panchakarma was synonymous to Ayurveda which was synonymous to a massage tradition, all originating in Kerala. Though Panchakarma is part of the pan Indian ayurvedic classical tradition, it is only in Kerala that it has survived and thrived. So in the post-tourist selling era, it has come to known as a tradition of Kerala, referred to as *Keraleeya Panchakarma*. Not only foreign tourists, but most Indians who have never heard of Panchakarma earlier in their lives mistake Kerala as the site of its origin. At the Global Ayurveda Summit in Kochi in 2010 a speaker said,



Miniature model of Ayurvedic Therapy displayed at Ayurvedic Industrial Exposition, Thrissur, 2009

In the pre-80s the place identified with Ayurveda used to be Sri Lanka, ...today the top of the mind recall for *brand Ayurveda* is Kerala. For many, Panchakarma has come to signify *Kerala Ayurveda*, for some, it is simply *Kerala Treatments* not even Ayurveda.

This misunderstanding irks some North Indian ayurvedic practitioners like Dr. Sukumar who grumbles, “What is so special about Kerala Panchakarma? Now people think it was Kerala that invented Panchakarma. But it is already all written by the ancient sages, mostly from north India. It went to Kerala much later.” Though he is right about it being a generic classical tradition, he fails to acknowledge the importance of metis. When ayurvedic doctors from all parts of India flock to Kerala they seek to imbibe collective practical knowledge that goes far beyond the text. Scholars across the country have appreciated Kerala’s role in preserving and improvising on the classical tradition. In the concluding ceremony of a national workshop, the Advisor of Ayurvedic Division in, Department of AYUSH, said with much emotion, “We are thankful to Kerala for preserving this glorious tradition.” A North Indian scholar from a premier national institution of Ayurveda dedicates his book on Panchakarma to “Ayurvedic practitioners of Kerala who kept the Art and Science of *Panca Karma* Therapy alive in some form and who continue to inspire rest of the profession to revive this great science in its original form” (Singh 2008). Though Kerala’s Panchakarma prowess got popular attention

post tourism, it was common knowledge in national ayurvedic scholarly circles. For instance, a mid-1960s medicine catalogue of AVS has a three page description on Panchakarma therapies in a section entitled “Special Treatments: Kerala specialties in methods of rejuvenation and care”. The description emphasized the “individuality of Kerala practice since time immemorial.”

8.4 New Spaces and new stakeholders

New spaces and new stakeholders are mostly co-produced. These can be classified into four broad categories, though they have many overlapping features: independent centers, hotels attached with ayurvedic facilities, exclusive ayurvedic resorts and spiritual resorts. The center *Brian* visited (APC) is located in a strategic place between a number of luxury hotels, many of which do not offer in-house ayurvedic services or are limited in the range of services they offer⁴¹⁴. Though it is mandatory to keep a doctor on rolls, casual conversations revealed that many proffered treatments off the menu without involving the doctor. They evidently did not share the ayurvedic practitioners’ sentiment of them being ‘clinical procedures’ with ‘therapeutic significance’; they were considered harmless recreational experience for the curious tourist. A common objection raised with regard to tourist selling of Ayurveda, is this disregard to the ethos of medical practice. For most ayurvedic practitioners, the seemingly simple preparatory procedure is a serious affair, to be regarded with the same respect as a surgical procedure, each with strictly specified indications and contraindications⁴¹⁵. They are worried that flouting these norms, is not only against professional ethics, but could also harm Ayurveda’s reputation in the long-run⁴¹⁶. Strict implementation of regulations had substantially streamlined ayurvedic service providers in foreign-tourist frequented regions. But domestic tourists focused regions (e.g., Thekkady hill resort) sport a different landscape dotted with numerous small massage parlors, some with dubious reputation. Vendors follow tourists around, proffering massages, quoting rates, not much different from curio vendors.

⁴¹⁴ It offers 9 different procedures including 5 varieties of massages (ranging from ₹ 300 (\$6) -1500 (\$30) per 40-60 mts session).

⁴¹⁵ For example, *Shirodhara* (procedure involving pouring medicated oil over the head) is contraindicated in the contexts of pregnancy, severe neck pain, low blood pressure, epileptic patients, brain tumor patients, people who have aversion/allergy to oil, those who have scalp rash, and those under the influence of drugs or alcohol.

⁴¹⁶ Occasionally, one heard rumors floating of procedures that had misfired. For example, one was about a wrongly performed massage that had created adverse effect on a patients with a history of spinal degeneration.

In the post-tourist era, hotels and resorts have become a common space for the consumption of Ayurveda. The trend that started from resort hotels in tourist regions in Kerala has spread across the country, both to tourist regions and business hotels in large cities. “In Kerala, too many spas are trying to stitch the Ayurveda element into the outfit (Jhaveri 2006)” A significant development in the past decade is the rise of tourist brands specializing in ayurvedic spas⁴¹⁷. The first known ayurvedic spa brand is the *Jiva spa* from the Taj group which was launched in 2004⁴¹⁸. Taj Garden Retreat at Kumarakom operates a full-fledged ayurvedic center offering both therapeutic and rejuvenative treatments and massages. ‘Ayurvedic therapy’ has definitely made a long journey from the bare clinical settings of a hospital to a luxury hotel. Ayurvedic practitioners are uncomfortable with this transition, common reactions being that such trends are “prostituting an esteemed tradition”, making “Ayurveda more of a business and less of a service”.



Massage centers proliferate, Thekkady



There is a segment of tourists unlike *Brian*, who are already familiar with Ayurveda, more often than not because of its affinity with *Yoga*. Such tourists tend to be serious seekers of Ayurveda who have done their homework either by reading or going through formal classes as part of their Yoga courses. The favorite haunt of such tourists are *exclusive ayurvedic resorts*. There are over 100 high-end Ayurveda resorts in Kerala that cater to high-end consumers, offering both therapeutic and rejuvenative treatments. For example Somatheeram, which calls itself the world’s first Ayurveda resort (estb. 1985), employs 20 doctors and 90 therapists. Of its annual 6000-7000 customers, 98% are Ayurveda-focused. 60% of their ayurvedic customers come for serious therapy, 95% are foreigners,

⁴¹⁷ A review of business news shows that ‘spa concept’ in India picked up momentum only in the early 2000.

⁴¹⁸ The group has 17 Jiva spas now, exclusive Ayurvedic Centers are run in two of their hotels, both in Kerala.

mainly Europeans (Moosath 2006). Though large resorts are owned by business groups, there are exceptions. For instance, Kairali⁴¹⁹ in Palakkad, known for its therapy focus, was founded by a doctor and his biotechnologist wife, who modeled it after their treatment center in Delhi. They made a conscious move away from the conventional hospital to create a “resort-cum-healing” where comforts were given as much importance as the treatments (Dhar 2012)⁴²⁰. There are also many mid-range treatment centers run by established hospital owners or ayurvedic doctors with access to some capital. *Andrew*, a professional biker from Germany had chosen one such small resort run by a traditional Vaidya family in interior Thrissur district. After a bad fall that rendered him paraplegic, Andrew resorted to ayurvedic treatment, after all other medical interventions failed. Recovered enough to walk on crutches after a year’s treatment in a reputed Ayurveda resort-hospital in Bangalore, he was looking around for a cheap and authentic place in Kerala for continuing his treatment. He zeroed on this resort because of its German connections⁴²¹. When I met him, he had been there for six months and had recovered sufficiently enough to resume biking.

8.5 Marriage between the old and new: traditional stakeholders in non-traditional spaces

Though initially shy and reluctant, many established ayurvedic groups including manufacturers, have one by one, directly or indirectly, entered the tourist market. These include a range of actors, traditional vaidyans, individual doctors, clinics and hospitals, and *Kalari* martial art training centers. They operate in different formats, four of which are most common: 1. Independent small/medium Panchakarma/wellness clinics, 2. Partnership model 3. Exclusive ayurvedic resorts and 4. Tourist-focused treatment centers. The most common are the first category. Though it is rare for reputed large groups to start branches in tourist centers, many local hospitals have begun to open branches in tourist areas. Established doctors with some spare capital too jumped into the fray.

In the late 90s, and early part of this decade a new partnership has emerged between two parties who had hitherto nothing in common - hoteliers and established stakeholders in the Ayurveda

⁴¹⁹ Featured as one of the top 50 wellness destinations in the world, by the National Geographic Traveler.

⁴²⁰ The only addition being a 50 acres of lush Kerala green ambience to take care of relaxation requirements.

⁴²¹ The vaidyan’s eldest son, runs an Ayurveda spa center banking on his traditional background despite being unqualified. This connection helps the resort to get a few German clients every year. The traditional family farm already had a medicinal garden. With a small investment on low-cost bamboo huts, it exudes the ambience of a local and authentic luxury resort.

segment. These range from small partnerships to large networks. The partnership framework has enabled the most conservative of the lot to enter the tourist market. This model works to the advantage of both the parties. Hoteliers get an easy plug-in option that provides them both technical expertise and a authentic traditional brand. Ayurvedic partners can keep their hands clean and minds free from running an unfamiliar hospitality business. Additionally, it provides them space to market their medicine commodities to a global audience and also serves as a catchment for their regular hospitals. A common network partnership to be spotted in tourist regions is a brand, *Sukham* (i.e., *wellness*), a joint venture between Abad chain of hotels and Kandamkulathy Vaidyasala, In early 2009, the company was planning to introduce a novel format, “Ayur-tour”⁴²² coordinating between their various centers to enable tourists to undergo treatment on the move so they would not lose on sight-seeing - a program most unlikely to meet the approval of traditional stakeholders who have already been objecting to using beaches as treatment places, let alone traveling between them. Part of the traditional prescription for ayurvedic treatments in Kerala, especially in the context of seasonal wellness treatments is “nallirikka”, which literally means “good rest.”

AVP, a large manufacturer, established a trust in 1998 to “set up ayurvedic centers across the globe in Hotels, Resorts and other Institutions”. It went on to build partnerships with several large hotel groups. Its much advertized partnership was with Hindustan Unilever, top FMCG manufacturer in the country in 2002, to create *Ayush Therapy Centers* (HUL 2002). Another large manufacturer launched the Harmony brand in 2005, targeting spas and high-end hotels. It announced the formulation of ‘protocol-based’, ‘ready-to-install’ ‘ayurvedic experience packages’ (Pankajakasthuri 2005). A recent headline news-maker in the resort segment is the entry of Yash Birla group⁴²³, an Indian multinational company. It acquired majority stake in Kerala Vaidyashala in 2008, to establish Birla Kerala Vaidyashala (BKV),⁴²⁴ a combination of day care treatment centers and ayurvedic health resorts.

Very few of the established Ayurveda stakeholders have openly entered the resort market. One boldly advertised resort is *Keraleeyam* by SD Pharmacy, a medium scale manufacturer. They advertise

⁴²² As told by the General Manager of the company.

⁴²³ A 35 billion dollar Indian multinational conglomerate corporation headquartered in Mumbai, India.

⁴²⁴ *Kerala Vidyashala* is a new generation tourist-oriented establishment started by an entrepreneur from a traditional vaidyan family in North Kerala.

a “3000 year old ayurvedic rejuvenation massage” without scruples, and have even gone far beyond their traditional forte to offer tour packages. Some other reputed resorts run by established Kerala based manufacturing groups are Ayurvedagram in Bangalore (KAL), Ayurveda Spa (Deseeya Pharmacy), Ayursoukhya (owned by a group of NRKs, managed by Kandamkulathy Vaidyasala).

The last category is the most difficult to discern. In being treatment centers these overlap with the first category, but in being resort-like they overlap with the third category. However, unlike the first these are not typically found in tourist areas, and are not visibly tourism-focused. For example, though the treatment center run by the Nagarjuna group in Kaladi is oriented towards wellness packages and foreign customers, they make it a point to call it a therapy center. At the same time it gets recognized as the best Ayurveda Center for award in ‘tourism segment’⁴²⁵. Narayanan Namboodiri, Assistant Marketing Manager of Nagarjuna Ayurvedic Group says, “it is not a spa, many foreigners come here, but they all come for treatment”. That there is a niche for treatment as an offshoot of tourism is evident from the strategy followed by the large tourist business group CGH Earth. A pioneer in tourist development in Kerala, the group has also invested in the therapy market, strictly differentiating between the two. *Kalari Kovilakam* is a therapy center where “every single thing is done by the book,” whereas the Ayurveda spa in Karwar beach, Karnataka is a “time-pass resort (Dominic 2010)”.

8.6 Identity crisis and the manufacturing of authenticity

The boundary between the hospital and the resort is no more sacrosanct. The first concrete demonstration of this was the Tourism Department stepping into certification of Ayurvedic Centers. Of the total 103 certified centers, at least 20 appear to be conventional treatment centers. Of these, around six are run by well established stakeholders including two from *Ashtavaidyan* families. This shows their aspiration to exploit the tourist generated market and willingness to cater to non-conventional expectations. A resident from Kerala might be able to distinguish between a spa and a treatment center not because of what they say they are offering, but because of their local knowledge of the institution’s history. For an unfamiliar customer seeking authentic Ayurveda the scenario can be quite confusing. Not surprisingly, the sellers of Ayurveda are caught in an identity crisis in their

⁴²⁵ It won an award as the Best Ayurvedic Center in 2004 by the State Tourism Department.

attempt to strike a balance between the conflicting ethos of the hospital and the hospitality segment. While most ayurvedic resorts portray themselves to be serious enough to be considered a treatment center, many middle and upper crust hospitals attempt to acquire some of the attributes of a resort. On the whole, the struggle is to remain attractive to the typical tourist, but still rise above the identity of a mere spa, to be considered at par with an ayurvedic hospital for the quality of therapeutic services⁴²⁶. Attempts to reconcile the contradictions that arise in the ‘morally ambiguous aura’ caused by ‘diversion’ of the commodity (Appadurai 1986) lead to struggles at meaning making. Some try to fit in all categories. For example, a spa run by an American woman exclusively for women tries to position itself as a combination of a home, a clinic and spiritual retreat, trying to distance itself from the commercial feel of a spa. “R.A... is not a spa or resort, but a retreat—a “gurules” ashram and ayurvedic clinic, dedicated to providing a nurturing space for healing and learning... located in a village-like neighborhood..along with the personal connection you’ll enjoy with .. make Rasa Ayurveda your home in Kerala”. Some others attempt to defy categorization, “So is it a spa? A Palace hotel? An ayurvedic hospital? An ashram? *Kalari* is beyond these simply because it is a little of all of these.” Another savvy resort invokes the mantra of individualization to transcend all boundaries, “Whether you are looking for ayurvedic treatment or a weekend get-away... AB Health Resort has a whole range of programs to suit every individual’s need. A cornerstone of ayurvedic thinking, “individualization” opens the floodgate for commodification. It marks everything as distinct and exclusive and hence incomparable. In this perplexing scenario, it becomes very important for sellers to establish their authenticity. Analysis of advertisements and brochures, location and customer positioning, points to three major themes as being the most exploited in sellers’ attempts to manufacture authenticity - tradition, nature and location, spirituality combined with yoga.

8.6.1 Tradition as the prime-marker of authenticity

Though tradition has always been important brand marker in the Ayurveda market in Kerala, in the manufacturing era, the emphasis was on science and modernity. In the marketing of services,

⁴²⁶ Chronic diseases like sinusitis, migraines, allergies, hemorrhoids, hypercholestermia, IBS, early stages of hypertension, insomnia, anxiety, etc., are conditions that might be ameliorated, if not cured, with a period of cleansing (detoxification being the favorite term), break from routine, diet and life style modification and mental relaxation.

modernity and science has taken a backseat with tradition coming to the forefront. One or more of the following reasons could be contributing to this trend,

- The western tourist consumer seeks the traditional and the exotic, not the modern or scientific.
- Unlike local people, foreigners need to be presented with convincing credentials.
- In the service market, it is uniqueness and exclusivity that sells, not uniformity and standardization.

Unlike traditional stakeholders from established traditions like *Ashtavaidyans*, erstwhile title holders, royal physician families, and old manufacturers, newcomers have to struggle to convince others of their legacy. Besides the legitimacy of a formal degree, it has become important to have pedigree. Since ayurvedic practice in Kerala cuts across classes and castes and religions, ‘family tradition’ can be found even in nooks and corners of the state, traced back to unknown periods in history. Kalari Kovilakam a new age therapy centric ‘palace resort’ traces its history back to a historical royal legend. Sanjeevani Ayurveda claims their genealogy to an unbroken tradition of six generations going back to a royal physician. Claiming ‘250 year of tradition’ Chavarcod family in Southern Kerala claims to follow both ‘classical’ as well as ‘traditional’ approaches. New generation hospitals who have no tradition to boast of, hire someone with traditional cultural capital or simply fall back on the generic ayurvedic heritage. When family traditions do not go far back, access to “secret formulae” from “ancient palm leaves” are cited. Though the family vaidyan history may be legitimate, there can be vast differences in the level of expertise inherited and in the caliber of the inheritor. Distinguishing between the real graduate and the drop-out student, without local knowledge of the vaidyan’s or the family’s historical reputation, is near to impossible.

A backwater ayurvedic resort traces itself to the *ottamooli* (single-root/dose) tradition of Kerala offering one-day rejuvenation treatment based on “a magical combination of herbs”. It cites a fascinating anecdote of how a royal toxicologist in the family a century ago had developed a single shot remedy to increase the immunity of royal family from poisoning and increase their life span. While this might appeal to a foreigner, it is ridiculed by locals as downright ‘quackery’. People in Kerala scoff when the word *parampariya* (tradition) is specifically advertized. In fact, it is the labeling that rouses suspicion; those who market tradition are suspected to be quacks falsely laying claim to authenticity.

By their logic, vaidyans, if traditional, are locally known and therefore have no need to advertize. This however is not a new development for Ayurveda which has a two millennia history of commodification. Several references are available in ancient and medieval literature in Kerala and various other parts of India that mock vaidyans who cheat public and make money. Charaka Samhita warns against quack vaidyans who advertize their wares in public. There is mention of prevalence of ‘*muri vaidyans*’ (quacks) in literature in 14th century Kerala. A remark is made in an humorous art form of medieval Kerala (called *chakkiyar kooth*) that the vaidyan and the *Kala* (god of death) are from the same breed, but the former is more cruel because he also takes money (Varier 2009).

Resorts away from the usual tourist circuit bank upon local cultural heritage hitherto unmarketed. For culture-tourists they serve as more legitimate markers for authenticity than generic images of nature, demonstrating the rootedness and localness of the institution. For example, the Nagarjuna Ayurvedic Group’s center in Kaladi is the birth place of Shankaracharya, the Hindu revivalist guru, where according to the brochure, “the vibrations of the past are still felt...the sacred place exudes serenity and sanctity, instilling divine and spiritual thoughts into one’s mind⁴²⁷”. The Silent Valley resort boasts about its location in Pulamanthol of the *Ashtavaidyan* fame as “the land of Ayurveda” where “tradition and culture meets”, a place where sage Vagbhata spent his last days⁴²⁸.

The Kerala style of architecture helps to create an authentic ambience of tradition. There is a wide range to choose from; ordinary tiled houses for the lower-end, elite houses (*nalukettus*⁴²⁹) in the mid-range; royal palaces and *illams/manas* (Namboothiri Brahmin houses) for the high-end. An ayurvedic resort founded in 2001 by modern entrepreneurs without having tradition or location to cash on emphasize on the “century-old building... constructed in the *nalukettu* model. The *nalukettu* is the traditional upper-class homestead(*tharavadu*), a quadrangular mansion with a centrally open courtyard, corridors, massive pillars and dorm windows typical of Kerala’s Architectural Style”. Another resort located at an off-beat river bank describes itself, “The construction of the *nalukettu* building, the aristocratic bungalow of ancient days is strictly sticking on to the *vaasthu* (ancient Indian science of architecture) technology, but compromising with all modern facilities”. This comes especially handy

⁴²⁷ Nagarjuna Ayurvedic Group, promotional leaflet, n.d.

⁴²⁸ Silent valley Resort, promotional leaflet, n.d.

⁴²⁹ Quadrangular houses surrounding an open courtyard in the center, a unique Kerala style of architecture.

in creating a Kerala ambience elsewhere. KAL's high-end resort in Bangalore declares,

Drive away from the City lights...As you drive in through the Classic gates of Ayurvedagram, you enter a whole New World of ethnic charm. Taking you back by over 75 years to Kerala's antique Nalukettus, Kovilakams (Palace), Manas & Illams- the traditional homes of Kerala. We have carefully transplanted these ethereal homes of Kerala's high & mighty, brick by brick, woodwork and all, to Bangalore, and recreated the royalty of Kerala, exclusively for your unique experience⁴³⁰.

8.6.2 Nature: a natural selling point for a herbal tradition of medicine

Tourism is primarily a business built around selling a geographical location either for its natural attractiveness or/and for its cultural significance.

Kerala tourism had historically focused on the scenic beauty of its tropical beaches, backwaters and tea gardens. The theme of Ayurveda as a 'herbal' medicine rooted in 'Nature', oriented to wellness and rejuvenation has become comfortably ensconced within this framework. This goes down well with both the foreign tourist and the average urban Indian wanting to have a respite from crowded and polluted concrete jungles. The publicity literature of ayurvedic resorts overflow with imagery of nature and ecology. "Rejuvenation in nature's own way" proclaims one brochure with the image of lush forest and waterfalls pasted over a traditional Kerala bungalow.



*"Return to Nature"
Hoarding of Somatheeram Ayurvedic Beach
Resort*

Another medium scale ayurvedic medicine manufacturer stretches the nature theme to its maximum capacity, "Escape to a healthy change...be close to nature....leave behind the maddening rush of city life, never ending deadlines and the strenuous schedules...enveloped by pure raw nature... Clear air, misty mountains, soothing music of rivulets and the chirruping of rare birds will transcend you to a world of peace and humanity..." The wellness center, whether it aims at tourist or to domestic customers, sells along with Ayurveda, the surroundings and the ambience. The best and most expensive therefore are situated at picturesque surroundings. The most favorite location, the backwaters in

⁴³⁰ Kerala Ayurveda Pharmacy, promotional leaflet for Ayurveda Gram resort, n.d.

Kerala are a network of interconnected canals, rivers, lakes and inlets comprising of five large lakes and 38 rivers, that provide 900 km of waterfront opportunity. While a large manufacturer like Nagarjuna can afford to have a treatment center on the bank of a major river, PS, a small traditional player with a clinic in interior Ernakulam has invested in a modern hospital building, overseeing an inconspicuous



Backwaters: the upmarket ayurvedic tourist destination

lake. Ironically, backwater-front properties that were the least attractive⁴³¹ have become 3-4 times more expensive than prime road-front properties.⁴³² In Kumarakom for instance, a piece of land worth ` 250-300 (\$5-6) per cent two decades ago, now costs ` 200,000 (\$4000) to a mn (\$20,000), an 80-400 fold increase.

8.6.3 Spirituality and yoga: natural bedfellows?

An element not traditionally associated with Ayurveda in the domestic market, but is often found packaged with tourist Ayurveda, is spirituality. The only group known for such packaging earlier was Maharishi, which along with selling transcendental meditation to the western market, developed its own export-version of Ayurveda (Jeannotat 2008). Popular practice of Ayurveda, contrary to western imagination, is far from being steeped in spirituality. But tourist resorts in Ayurveda make it a point to emphasize on the spiritual dimension of Ayurveda, which is most often taken care of by including yoga and meditation in the menu. Western expectations are known to play an important role in shaping Ayurveda in the West, for example an overemphasis of spirituality in the United States partly owing to regulatory barriers to medical practice (Reddy 2002).

There is no historic link between Ayurveda and Yoga in the classics nor has there been a close association between them in everyday practice in India. But for outsiders besotted with Indian

⁴³¹ They were flood-prone and due to frequent sea-water intrusion, unviable for cultivation.

⁴³² Property prices were already high in Kerala owing to high population density coupled with insatiable demand from a rich Kerala Diaspora. Traditionally, the highest priced were core urban land and road-front properties.

spirituality they appear to be closely related. Not only do they share a common homeland, they are apparently complementary; both aim at enhancing health. Formerly, the likelihood of people who were exposed to yoga and meditation stumbling on Ayurveda would have been rare. But today Yoga and Ayurveda are often found packaged together. Organizations focused on Yoga have begun to package ayurvedic commodities along. Likewise those in the ayurvedic business ride on the popularity of Yoga to gain access to an established catchment of western consumers. It has become common for ayurvedic practitioners to talk about yoga as if they had always been closely interconnected. In a publicity brochure, Nilayoram resorts claims that “Ayurved and Yoga are sister sciences”, tracing their “common ancestry to the ancient seers”. The brochure belabors on the theme drawing a long list of similarities between the two, arguing that “Ayurveda deals more with health of the body, while yoga deals with purifying the mind and consciousness, but in reality they complement and embrace with each other⁴³³”. Much effort is being put into justifying the relationship to make up for the lack of a natural link. It is likely that the historical disconnect between the two would be soon forgotten, and any reminder of it might meet with disbelief or disapproval.

The domestic market space of spirituality has undergone an expansion in the last two decades. Institutions and gurus in this space find it advantageous to partake their share of brand Ayurveda. Spiritual entities are of two kinds, low profile traditional spiritual organizations rooted in local communities and high profile ‘new age’ spiritual gurus. Both of these activities are relatively low key in Kerala compared to rest of India. The most prominent spiritual entities in Kerala are Santigiri Ashram and Mata Amritanandamayi’s Ashram. Interestingly, both hail from subaltern communities, began as low profile institutions that acquired international stature⁴³⁴. The former through its manufacturing unit Santigiri Ayurveda and Siddha Vaidyashala has been a mainstream stakeholder given the Ezhavas’ historical association with medicine. The latter participates in Ayurveda by selling products under its recently launched brand Amrita Life. Both follow the Kerala model of focusing on classical pharmacopeia. Post the recent liberalization of education, both have entered the ayurvedic education market in the past decade (Santigiri in 2001 and Amrita in 2004).

⁴³³ Nilayoram Ayurvedic Resorts, promotional leaflet, n.d.

⁴³⁴ The former established in 1964, derives inspiration from the Ezhava spiritual leader Kumara Guru. The latter, Amritanandamayi popularly known as *Amma* (i.e., mother) hails from a fishing community.

As far as ayurvedic market in Kerala is concerned new age spirituality does not have much traction. Authenticity is mainly constructed around established ayurvedic stakeholders. But in other parts of India, where there are no claimants for ayurvedic tradition, modern spiritual gurus have begun to wield extensive influence. Most notable are two new age gurus, Sri Sri Ravishankar, an elite oriented guru and Baba Ramdev who is a guru of the masses. The popularity of both are linked to the teaching of Yoga, though their modus operandi presents a stark contrast. Ravishankar's Art of Living Foundation propagated a proprietary format Sudarshana Yoga taught through highly priced 'art of living' workshops and 'satsangs'⁴³⁵. Ramdev on the other hand garnered mass following from his open-source model of teaching Yoga on television. Both have jumped on to the Ayurveda bandwagon, with distinct approaches and aggressive marketing strategies. Ravishankar's Ayurveda remains elite, the language and the format designed to appeal to the export market, especially to the western consumer. The image below shows the company's presentation listing international certification markers at the international conference in Bangalore in December 2009. They were hosting the 'international delegate session' in their grand auditorium at the Headquarters in Bengaluru.



Presenting credentials: A Sri Sri Ayurveda rep. in International Delegate Assembly World Ayurveda Congress, Bengaluru, 2009

Ramdev on the other hand has made big strides in domestic Ayurveda, producing affordable classical and traditional medicine commodities. His ayurvedic establishment has seen a meteoric rise in the past two decades, now an empire of 1049 Patanjali Arogya Centers (medicine franchises) and 794 Patanjali chikitsalayas (branded clinics). Ranjit Puranik, owner-CEO of Dhootapapeshwar, General Secretary of Ayurvedic Drug Manufacturers Association (2002-2010), feels that he has done "yeoman service" in restoring faith in Ayurveda in North India.

Though spirituality, yoga and Ayurveda appear to be natural bedfellows, as far as the selling of

⁴³⁵ (sat= truth, sang= community) A format of religious fellowships common to many religious organizations in India.

ayurvedic commodities are concerned, the spiritual gurus are no doubt riding over a wave of popularity generated by the post-tourist commodification of Ayurveda. At the same time, by doing this, they are also creating a new clientele for Ayurveda among their followers by providing a stamp of recognition that Ayurveda outside Kerala sorely lacked. These set of actors have a distinctive advantage in making claims to authenticity; they are implicitly perceived to be operating within a ‘sacred’ ‘non-commodity’ sphere inherently untainted by commercial logic.

8.7 New Practitioners: the spawning of paraprofessional training institutions

The proliferation of Panchakarma in resorts and hospitals has created an unprecedented demand for paraprofessionals. This has led to the gradual formalization of a once purely informal skill. Practitioners mainly depended on *Kalari* martial art trained masseurs for assistance with massage and other clinical procedures. In the 70s a formal training program was created to meet the requirement of government hospitals in Kerala. For a long time the only course to train paraprofessionals was run by Government College in Trivandrum, with a capacity of 30 seats. Since 90s, various small and big private players began to respond to the requirement of paraprofessional training. A prime-mover both in the training and tourist services market was the Christian-missionary owned Sahyadri, which started *Ayurvedic Nurse* training in 1994, producing 480 students by 2006. It forged a partnership with a Kerala-based luxury hotel chain in Goa to offer wellness treatments. *Paul* and *Mary* who studied in the first and the second batch graduating from this institution were happy to have chosen this path. Armed with eight years of experience, *Paul*⁴³⁶ is optimistic of finding a position abroad. *Mary*⁴³⁷ had a good career until she moved back to Kerala after marriage, to a remote location without tourist activity. Nagarjuna was the first and remains the only



Poster ad for Sahyadri's Panchakarma therapy course

⁴³⁶After a B.A and a diploma in computer application course failed to land him a job, he decided to try this option. For the first 6 months, he worked in an Ayurveda hospital. After 4 years of working in various hotels in Bombay and Delhi, he now works at a five star hotel in Kovalam and is paid ₹ 8000 (\$160) per month besides free boarding and lodging.

⁴³⁷ She passed the Ayurvedic nurse program in 2001. When she joined, the fee was a mere ₹ 5000 (\$100). The entry requirement was just a higher secondary pass certificate. With demand for the course going up, a biology requirement has been added. All of Mary's 15 classmates found immediate employment. Mary worked at the five star hotel Leela in Goa for two years before marriage, at a salary of ₹ 5000 (\$100) per month. This was considered a good deal as accommodation and food were taken care of and moreover, she was earning an equal amount of money from tips.

one among the large manufacturers to enter this market. The diploma program they introduced in 2002 was so popular that they were training three batches a year, with intake ranging from 30-50 a batch. By early 2008, they had trained around 600 therapists. Given the brand name and the rigorness of the program, therapists trained by the Institute are sought after. Another medium sized manufacturer Pankajakasthuri's tourist brand 'Harmony' is a business model centered around training therapists.

Given Kerala's expertise in exporting biomedical nurses across the globe, the concept of ayurvedic nursing did not take much time to take root. Ayurvedic nursing demands far lower investment, and caters to a lower income group. Also, it provides opportunity of training to both genders unlike biomedical nursing which has been traditionally woman-centric. Majority of the candidates for these programs are from lower socio-economic strata who are on the look-out for quick jobs⁴³⁸. Ayurvedic nursing also carries the potential of going abroad, a common aspiration among Keralites accustomed to labor migration to foreign countries. Absence of state control and standardization coupled with increasing demand from the service segment (both tourism and the expanding hospital segment), provided a fertile breeding ground for a variety of entrepreneurs. Soukhya, one such training institute located in Thodupuzah in Idukki district⁴³⁹ is among the pioneers who has made it big. The Institute was constituted solely for this purpose by a retired Government ayurvedic doctor who in his association with Nagarjuna's training program, was inspired by their model⁴⁴⁰. The Institute has a good reputation; students are well placed, not only in Kerala but also in cities like Bombay, Hyderabad and Bangalore. In fact, the demand was so high that they have 4-6 institutions visiting annually for campus recruitment. The manager of and the four masseurs employed in the tourist center *Brian* visited were all alumni of this institute. Two similar Institutes (*Ashramam* and *Ayushalaya*) opened in the district inspired by their success, have also grown substantially big.

Unlike Nagarjuna and Sahyadri, who have traditional reputation in the ayurvedic community, new institutes like Soukhya find it important to have some official seal of approval which is

⁴³⁸ Some of the typical job alternatives for youth from this class are office administration, tailoring, barber/beautician, computer hardware, or specifically for men, plumbing, welding, smithy, lift operation, fire technology, draftsmen.

⁴³⁹ Interview with Office Manager, Soukhya, 05/10/2010

⁴⁴⁰ The manager of and the four masseurs employed in the tourist center *Brian* visited were all alumni of this institute. The fee for the course was ₹ 12,000 (\$240). With three batches in a year they had rolled out around 250 students by early 2010. They did not employ permanent staff; three Ayurvedic doctors were employed as visiting faculty. The institute was residential, most of the students were non-local Keralites. The minimum entry requirement is higher secondary, but they get diverse students many with undergraduate degrees. In one batch, they even had a retired lawyer. Many Christian nuns come for training.

conveniently obtained from the Bharat Sevak Samaj (BSS)⁴⁴¹. As of early 2010, over 70 institutes had obtained approval for conducting 6-12 month certificate courses in Panchakarma, ayurvedic therapy and nursing.⁴⁴² In addition to this, there are around 10-20 small institutes at the lower end of the chain that give 3-6 months training without any formal connections, with lower fee and lower entry requirements. There are also several individual doctors who have turned entrepreneurs overnight. For example, in early 2008, when I met *Ravikumar*, an ayurvedic doctor in a rural town in central Kerala, he was busy hatching plans with a traditional *Kalari* practitioner to begin an ayurvedic nursing program. It does not require much investment, he said. All he had to do was to spruce up the already existing Panchakarma room, and add another room for conducting classes. Though the State government has given approval to few more ayurvedic medical colleges to run ayurvedic nursing/therapist courses, there has been no attempt so far to regulate para-professional education. During the Global Ayurveda Summit in Kochi held in March 2010, there was much discussion on the shortage of therapists. Despite the mushrooming of training institutes, the current supply of around 1500 therapists a year hardly meets the estimated annual domestic demand that exceeds 20,000 (Sangeetha 2010). In his inaugural address at the Summit, the Chief Minister of Kerala promised that a policy would be soon formulated to promote the education of Ayurvedic therapists.

8.7.1 The sidelining of *Kalari* martial art practitioners

In this particular market, the *Kalari* martial artists find themselves in an awkward position. As traditional suppliers of ayurvedic services, they continue to play a significant role. Some therapist training institutes have been reportedly using *Kalari* practitioners to do the skill training. However, instead of being key players in the emerging market, they are relegated to the periphery, and are in danger of being further undermined. Within the current Ayurveda-centric market they cannot claim a legitimate place. This was not the case until recently, when bone-setters from this tradition had a legitimate status as experts. Formally trained doctors respected their skills; many admit that such skills are difficult to acquire from classroom instruction. But with the escalation of the commodity

⁴⁴¹ A national development agency promoted by the planning commission, Government of India, works as a certification organization for approving syllabus and conducting examination for vocational courses.

⁴⁴² Of the 70 institutes, around 10-15 are independent training institutes. The rest include the full range of players in the Ayurveda market ranging from manufacturers to resort owners, medical colleges to martial art training institutes.

value of Ayurveda, there has been a sea change in perceptions. The tourist market grew around *ayurvedic massage*, of which the most popular was *Kerala special massage (uzhichil)*, a contribution of the *Kalari* tradition. When the demand extended to practices that were a joint realm of Ayurveda and *Kalari*, tension began to build up. Eventually, rampant malpractices brought in regulation; registered ayurvedic doctor's presence became mandatory. Unfortunately for *Kalari* practitioners, *Kalari* massages did not evolve as a distinct commodity category outside the ayurvedic fold.

In the early years of formalization of modern Ayurveda, for metis-heavy branches (*Marma*, toxicology and ophthalmology), ayurvedic institutions in Kerala had used practitioners from the traditional background to formalize the curriculum. Illustrious vaidyans, despite not having degrees were appointed as professors in reputed medical colleges. For example, a traditional *Siddha Marma* practitioner was appointed as a professor in Trivandrum Ayurveda College. One of his recipes for wound treatment (*Murivenna*), adapted and popularized by the college continues to be the most important of all medicines in Kerala (Kerala Ayurveda Vaidyam 2011). A small, but locally reputed doctor-manufacturer I interviewed, said his proprietary pain oil was based on a secret formula obtained from such a *Marma* vaidyan who was a visiting professor in the Trivandrum college hospital where he was doing internship in the mid-60s. The significance of metis in the area of musculo-skeletal issues is well illustrated in this narrative of *Sudhakar*, a college professor in his late 30s who landed in a prestigious ayurvedic hospital with a severe back pain.

The patient was a non-Keralite, the hospital was a prestigious Kerala ayurvedic hospital outside Kerala. Despite the severity of his condition and despite the warning of his friends and family, KS decided to go to an ayurvedic hospital because of his historic experience with various indigenous systems of medicine. Only those who supported him in his decision he said were Keralite friends who had recommended this hospital. When he admitted he was barely mobile and was in excruciating pain. When his symptoms did not come down after a week, the doctors lost confidence and recommended that he visit a allopathic specialist. KS asked them to take him to an orthopedic surgeon, who recommended surgery. KS was unwilling, he asked for traction instead, and asked for it to be arranged in the ayurvedic hospital. However, after the procedure was done, KS was disappointed with the doctors and felt no much in spending his money on the hospital. When he was about to leave, a therapist who heard about this unsolvable case, got curious and came to visit him. The therapist who was in mid-30s had 14 years of experience, and he said he was willing to treat him, but the hospital protocols won't permit. KS being willing to take the risk, he agreed to perform the therapy behind closed doors. He brought with him an assistant with a hefty build to lift KS, and directed him to perform some kind of manipulation. Following this, he gave him a therapeutic massage, which he said significantly ameliorated his condition. The therapist continued with his therapeutic massage sessions at home, until KS fully recovered.

Lambert (1997) feels that the official status of Marma as part of a legitimate branch of Ayurveda in Kerala was instrumental in preserving the martial art tradition. She contrasts it with the absence of official patronage in Rajasthan which led to the decline of the 'Pahalvans', the wrestlers who also used to practice as bone-setters. Formalization might have legitimized the practice and to a certain extent absorbed traditional skills. But at the same time it sidelined practitioners outside the formal system. Today, spaces and channels to bridge the traditional and the formal no more exist; the formal is assumed to have absorbed the traditional, making the traditional irrelevant and illegitimate.

Though well intended efforts were made to incorporate traditional knowledge, the very format of formal learning was inimical to the learning and transmission of these skills. Hence, it failed to produce effective counterparts. Consequently, transmission continued in the traditional format outside institutions responding to popular demand for services. However, *Kalari Marma* practitioners lost official legitimacy, financial and moral support. This has affected bone-setters hailing from the *Kalari* background. For example, the patient who was buying raw-drugs for a fracture treatment (see Section 6.1) was visiting *Rajan*, one such traditional bone-setter. Being unlicensed, this practitioner maintains a low-profile. It was quite a task to unearth his clinic, which was run in a house in a remote rural area in Central Kerala, well hidden in a thickly housed residential area. There were no boards or any sign to indicate the existence of such a vaidyan. For the sake of legitimacy, he practices along with a retired ayurvedic doctor, displaying only the latter's name plate. His clinic draws 50-100 patients a day, who mainly hail from the surrounding three districts. Domestic demand continues to be high for such services which continue to circulate in exclusive channels mainly by word of mouth publicity, far away from the public gaze. Unlike *Rajan*, *Kannan vaidyan* in another remote village in central Kerala functions on a far smaller scale. Now in his mid-60s, he lives a nomad's life travelling from city to city responding to random service calls, mostly from patients' families. Sometimes he also gets calls from ayurvedic doctors to assist them in treating difficult cases.

Kalari practitioners' problems are similar to that of informally trained ayurvedic practitioners who had been delegitimized in the process of professionalization of the indigenous medical systems. At the same time, it should be noted that it is 'participation in the market' that is at the root of their

problems. The traditional checks that guarded professional boundaries and ethos do not work in the new market. *Kalari* was primarily studied as a passion and as a hobby, not for getting a job or making money. Some basic skills like fixing sprains, dislocations and fractures were commonly taught *Kalari* training to address their everyday occupational hazards. It is common for *Kalari* trainees to leave half-way; some learn skills useful in doing minor massages, ending up as assistants to *Kalari* masters or vaidyans. Many do it just as a social service and hobby, not expecting returns. For example, Savita, a young woman from a lower middle class family in an interior village in central Kerala, had a few years of *Kalari* training as a young school girl. Now a nursing student, in her free time, she helps out neighbors in cases of minor sprain or a simple massage for aches and pains, without taking payment. Only those with special aptitude went on to learn advanced techniques and medicine preparation. Those who did well had people queuing up for service; ayurvedic vaidyans often referred their patients to them. Mohammad Gurukkal, a *Kalari* practitioner who runs a small institute in interior Thrissur, talking about opportunities and lack of it for *Kalari* practitioners said that traditionally most learnt *Kalari* as a hobby. Some like him who continued with passion went on to become teachers. “Now many are going to the *Uzichil* (massage) business, may be some of my half-learnt students (cheats!) might also go, I have no idea”. He was also dismissive of the qualification of the so-called certified masseurs. “One cannot teach massage like that in six months or even a year. This is something that we teach very slowly over time, as a part of a discipline.” Commodification pressures leads to demand for formal certification that consumers in the market can use to gauge authenticity of a practitioner. The traditional curriculum in *Kalari* is organized by levels, ranging from wrestling to full-fledged sword fights. Though students are internally graded by accomplishment of each step, certification is not formalized (unlike ‘belts’ in Karate). In time, as a profession *Kalari* may be forced to institute visible certification markers to guard its boundaries.

8.7.2 The battle for legitimacy in transnational spaces

Ayurvedic tourism has also opened up lucrative opportunities for training professionals from abroad including foundation programs for non-professionals. There is also demand from ayurvedic doctors across India for training in Kerala special treatments. Almost all manufacturers and resorts have opened a Trust or branch for training⁴⁴³. Most of the high-end and even some of the mid-level training institutes target Europeans as the primary clientele; the course fees are listed only in Euros.⁴⁴⁴ Training courses are not just run by large and reputed establishments. There is small scale brisk activity, especially in tourist regions and cities near tourist regions. *Dr. Sridharan*, an ayurvedic doctor from a vaidyan family runs a tourist oriented ayurvedic massage center in the historical city of Fort Kochi. He proudly shows his book full of recommendations from his trainees - around 30 odd trainees, most of them from European countries. He charges a fee of ₹14,000 (\$280) per student for a monthly course⁴⁴⁵.

However, while it works as a lucrative market for local entrepreneurs in the short run, there is a less recognized indirect impact. When Ayurveda travels out of its context, as a commodity to transnational spaces, given the lack of official recognition and consequent lack of regulation, it is vulnerable to diversions. Vijaykumar (2010) provides a neat classification of ayurvedic practice in UK based on his own experience as an ayurvedic doctor in UK. He classifies the services into four categories: widely prevalent Ayurvedic clinics run by North Indian doctors that do not offer Panchakarma; resorts that have doctors and therapists from other parts of India who provide no classical treatment; half a dozen illegal institutions that employ Keralites or those trained in Kerala who are into full-fledged Kerala ayurvedic practice including Panchakarma; and finally centers run by Germans and British, post short-term training in Kerala, which sell services as independent commodities.

⁴⁴³ For example, Kerala Ayurveda Pharmacy's *Kerala Ayurveda Academy*, AVP's *Arsha Yoga Vidya Peetam*, Somatheeram resorts's *Ayurveda Academy*, Birla Kerala Vaidayshala's (BKV), *BKV Institute of spa*.

⁴⁴⁴ Somatheeram resort charges 2000 Euros for a basic *Panchakarma* course for 20 days, excluding boarding and lodging (accommodation costing Euros 70 to 270 per day in the season). Greens Ayurvedic Hospital has targeted at a predominantly North-American clientele in introductory Ayurveda (50 from USA, 49 from Brazil, and 10 from Canada between 2005 and 2009).

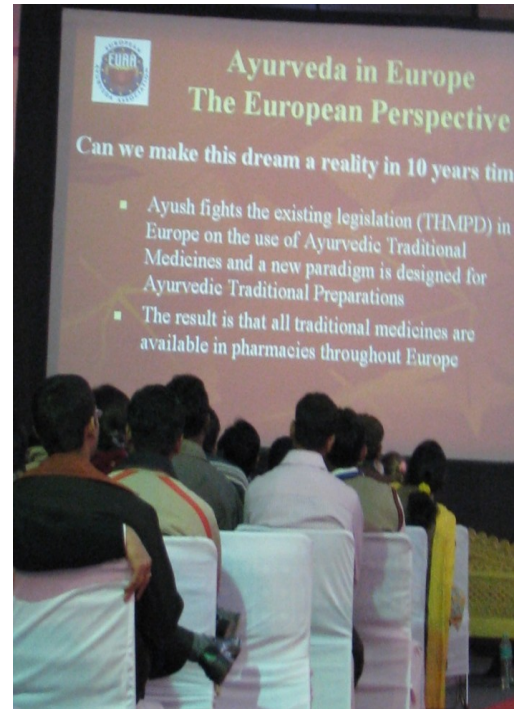
⁴⁴⁵ This is equivalent to a government Ayurveda doctor's basic monthly salary.

Formally qualified practitioners attempting to establish practice abroad, mostly Indian doctors and a handful of European CAM practitioners are concerned that such practices would endanger their interests. Many local CAM professionals in Europe and US with a few months training set up ayurvedic treatment centers or add it as an item in their spas or integrate with other CAM specialties. An agitated ayurvedic doctor from Kerala writes,

Many westerners come to India nowadays to get short ayurvedic courses, so that they can return back to their country and term themselves ayurvedic experts. As in many countries there are no standards in ayurvedic medicines whoever can pronounce *vata pitta kapha* clearly and loudly and chant one or two mantra or can change their name or let their beard grow or put a long sandal paste dot on their forehead can become great ayurvedic experts (Ajit 2007:48-49).

And he warns, “If we do not wake up before it becomes too late Ayurveda will go the same way Yoga has gone in west (Ajit 2007:48-49)”. Qualified practitioners are afraid that such practices might damage the reputation of Ayurveda, making it further difficult to get official recognition. A Latvian Ayurvedic practitioner presenting a paper at the Global Ayurveda Conference in Bangalore calls this ‘pseudo Ayurveda’ which he says led regulators to apply cosmetic industry controls on Ayurveda⁴⁴⁶.

The growth of Pseudo Ayurveda in Europe, in the long run, is detrimental to the interests of the authentic Indian ayurvedic science and the industry. The lack of coordination and standard course programs leads to a number of organizations all over India, offering so-called ‘Indian Ayurveda’ in short term 3-6 months courses to lure foreigners. This promotes Ayurveda but robs the medicinal aspect; this mix is further diluted with the perceptions of the western promoter and Pseudo Ayurveda...finally negative publicity for Original Ayurveda. It also very negatively impacts qualified Indian doctor’s chances in European nations, who have to compete with 3-6 month educated but 5-7 years practiced local European quacks. This is the main reason Ayurveda is largely perceived as a lifestyle in the West and not a medical science and Industry struggles to cut ice with them trying to market ayurvedic medicine (Bhasin 2010).



*Presentation by European Association of Ayurvedic professionals
Arogya Conference Thrissur, 2009*

⁴⁴⁶ His persistent campaigning with the State in Latvia that has led to an Indo-Latvian Health agreement on Ayurveda.

So far perhaps the only full-fledged and legitimate program in the western hemisphere is *Ayurveda Point* in Italy, a training institute founded in 2001. It was born from a joint venture between Dr. Antonio Morandi, an Italian ayurvedic scholar-cum-biomedical doctor and SNA Pharmaceuticals, a medium sized manufacturer group from an *Ashtavaidyan* family. SNA provides technical support to run a full-fledged Ayurvedic training for biomedical doctors in Italy and a 4 year course for therapists. The internship is done at their hospital in Kerala. The program is officially recognized in Italy, and biomedical doctors are allowed to practice other systems. During 2008-2009, there were a few other proposals of joint ventures of local entrepreneurs with various European countries. However, expansion outside the country is slow, both due to regulatory barriers in other countries and the reluctance of traditional stakeholders to enter into grey areas or to bend to suit the regulations. There is increasing pressure on Ayush authorities to provide technical support in designing a curriculum and to evolve a certification procedure for professionals abroad. But there is much disagreement between various stakeholders as to the modus operandi. In the international delegates session at the World Ayurveda Conference in Bangalore in December 2010, this surfaced as a significant bone of contention between officials from the Ayush ministry and foreign delegates.

Foreign professionals are irked at the insistence of Indian authorities that they meet the same requirements as Indian professionals. They find the Indian curriculum and evaluation system classics-heavy and exam-oriented. They expect the freedom to tailor the curriculum to suit local realities and needs. In Europe, the predominant approach appears to be to allow integration of Ayurveda with biomedicine, to let already qualified doctors to acquire knowledge in alternative medical systems. This is another area of difference that surfaces



Presenting the European point of view

International Delegate Assembly, World Ayurveda Congress, Bengaluru, 2010

between European and Indian practitioners. The former insist that unlike India their countries have no historically recognized status for Ayurveda; the best way to gain recognition in their biomedical dominant countries is to allow for integration. But at the same time there are other interest groups among them, like CAM professionals based in various alternative medical systems including European herbal systems, who are resentful of allopathic doctors monopolizing Ayurveda⁴⁴⁷. Used to the model of mixing and matching medical practices from across the world, they feel no need for compartmentalization and regulation.

8.8 New modes of Commodification

With the entry of new stakeholders and consumers, new formats of commodification emerged, of which three are salient.

- *A la carte Panchakarma*: Disassociated from their clinical context, services have attained a commodity status of their own, and are being offered in attractive packages or as individual items that can be ordered off a *therapy menu*.
- *The emergence of Brand Kerala*: A Kerala brand in Ayurveda has emerged and spread to rest of the country. It began with *Kerala Panchakarma* which continues to be the key attraction, but has expanded to become *Kerala Ayurveda*.
- *Expansion of the wellness segment*: A new category of ayurvedic practice and consumption has emerged as the concept of wellness treatment has taken wings and spread from Kerala elite practice to tourism and further on to the domestic sphere. Wellness treatment hitherto affordable only to the elite have emerged as mass commodities accessible to all classes, tailored according to individual need and pocket size.

⁴⁴⁷ As learnt from an Italian CAM practitioner, a participant in Global Ayurveda Conference, December 2010, Bengaluru.

8.8.1 A la carte Panchakarma

When *Brian* inquired about treatments available at the Panchakarma center in Kumarakom, he was asked to look down at the print-out stuck under the glass table, a menu with nine treatments.

General Body Massage	45 minutes	₹ 750
Kerala Traditional Massage with herbal steam bath	60 minutes	₹ 850
Special honey massage	60 minutes	₹ 1000
Njavara kizhi	45 minutes	₹ 1450
Shirodhara	60 minutes	₹ 1500
Head Massage	25 minutes	₹ 450
Elakizhi	40 minutes	₹ 800
Face and head massage	30 minutes	₹ 550
Herbal Steam bath	20 minutes	₹ 300

He was also given a small brochure which described the Kerala special treatments illustrated with tiny pictures. He read that and looked at the menu, picked up three that seemed the most exotic of the lot, and bargained for a better price for a combo. Not much different from ordering a meal in a restaurant. Thick accented broken German-English and nasal accented broken Malayalee-English did not come in the way of a successful bargain. Such treatment menus have become a common sight in the new wellness centers. *Brian* was little aware of the storm that was brewing among the ayurvedic fraternity in Kerala over such gross misuse of an ancient and respected tradition. “Ayurveda is being misused for serving tourists” was a common refrain heard at every single occasion, conferences, practitioners and industry meetings. At the Ayurveda Summit in Kochi in early 2010, many speakers expressed concern at the unhindered spread of Kerala massage across the country. The State tourism secretary said it is not only bad for Ayurveda, but also “for the image of Kerala”. Even those who participate in the tourist market have reservations. Marketing manager of a manufacturer who had a tourist-friendly treatment centre said, “Ayurveda was being misused by unscrupulous elements. It is getting a bad name for Ayurveda...I am afraid serious local consumers might move away from Ayurveda if this trend continues.” Though this seems farfetched, this sentiment is often expressed. Established Kerala stakeholders want to tread cautiously for fear of losing credibility in the eyes of the conservative Kerala consumer. But ironically many among the critics have also become direct and indirect, willing and reluctant stakeholders in the market. *Dr. Abraham* is a 65 year old doctor from a traditional vaidyan family, who runs his clinic-hospital in interior Kochi. A French tourist, dissatisfied

with the touristy outfits in the tourist areas, landed up in his place through some reference for 'authentic' *Panchakarma*.

She had come in search of authentic Ayurveda. She had done some reading and had her own notions. She wanted Panchakarma done. And my! you should have seen her bargaining. She said she will buy 5 treatment procedures if we offer a 6th free, not different from how we buy fish. Anyway, what did we have to lose, we threw in a Ayurveda facial treatment, and she was satisfied. She stayed for a 21 day package, and Lord! her demands were so high - we have cooked every vegetable available in the region for her. She also had this notion that the same set of masseurs had to do the treatment. Ours is a small place, we don't necessarily have regular people. When one has a health or personal problem, we have to find a replacement. But she would throw a tantrum if a different masseur turned up!

The doctor is contemptuous of the tourist, but at the same time his joy at receiving an international guest is palpable. He can now boast that a westerner had come to his clinic in pursuit of authentic Ayurveda. Though he claims being averse to tourist commodification, his brochure provides a list of packages ranging from rejuvenation to obesity care. The brochure states that their nursing home is located "in a typical Kerala village on the banks of a paddy field and waterway." His rural location instead of being a handicap, adds to the authenticity of not-being touristy. However, he squarely places the blame of the new avatar on his son, also an ayurvedic doctor, saying "the new generation does not want to lose opportunity in the name of principles".

Besides the menu mode, the other ubiquitous post-tourist development is the "package" model. An ayurvedic wellness or treatment course involves a combination of treatments, commonly referred to as 'package'. Such packages are typically classified as rejuvenation packages, wellness packages and treatment packages. Average duration of a package ranges between 14-28 days. Of the disease treatment packages, the most common are aimed at arthritis and obesity (See Appendix I for a sample wellness package). They are available at various price ranges.⁴⁴⁸For spas and resorts, Ayurveda is nothing but a commercially attractive venture. Even a traditional stakeholder like SD Pharmacy which offers consultancy for ayurvedic spas extols the commercial benefits of an ayurvedic spa as a business with, "low capital investment, low gestation period with excellent profitability from the very

⁴⁴⁸ A weekly package in Somatheeram in the peak season ranges from 1100 to 4000 Euros (at 160-570 Euros per day = ₹ 10,000-34000/ \$200-680) for a basic room, going up to 2400 to 8000 Euros for a luxury room (at 340-1140 Euros per day= ₹ 20,000-70,000/\$400-1400). In the off-season the rates come down by 20%. In Keraleeyam, (a resort run by a traditional mid-level manufacturer), the costs are moderate, 426-630 Euros (60-90 Euros a day= ₹ 3600-5400/\$72-108) depending on type of package and nature of accommodation. Thanneermukkam, the Kerala State Tourist Department Resort offers 15 treatment packages for diseases ranging from migraine to Parkinson's to psoriasis, diabetes to infertility. Accommodation here is relatively inexpensive 25 to 50 dollars a day (₹ 2500-5000/\$50-100 per day) including boarding, lodging and treatment excluding food. All prices mentioned refer to a period between 2008 and 2010.

1st or 2nd year of operation...very short off-season since Ayurvedic Rejuvenation Therapies can be conducted round the year”.

Saroja, who works in Bombay visited her hometown in rural Thrissur two years ago, went to a local traditional hospital with regard to her arthritic problem. She was in for a shock when she was told that she would require a treatment package of 21 days at the cost of ₹ 35,000 (\$700). “My family and relatives have been consulting the father of the current manager of the establishment since my childhood. So I’m not able to digest this development! Everything is sold in terms of packages, and that too for exorbitant costs! ” she exclaimed, rolling her eyes, evidently still not totally out of shock. Though the hospital is run by a vaidyan family establishment, the stewardship had passed on to a shrewd businessman-son who though not a doctor himself was adept at capitalizing on his father’s legacy. While offering treatments on a menu to be selected at will by the consumer can be considered a brazen flouting of ayurvedic principles, the same cannot be said of the package model. Classical Ayurveda does not talk about disease or wellness packages like *arthritis* or *anti-stress* packages. But not all package selling is driven by commercial logic. It is possible for serious therapy-centric hospitals to prepare systematic protocols aiming at certain ailments, especially chronic ailments like arthritis, back pain, chronic fatigue and so on, that take time to heal. Ayurveda offers a perfect format for commodification - the minimum period stipulated is seven days that can be extended in multiples of seven. Treatment is begun at low intensity and gradually increased in strength, leveled, and then tapered down systematically. In fact, one of the members on a discussion forum pointed out that the minimum time is seven days, “if anyone offers shorter term than that, then he is a quack”.

One test to see if commercial logic dictates supersedes treatment logic is to gauge the approach. Serious therapy places rarely suggest long-term protocols without gauging the patient’s response to initial steps of treatment. Vaidyamadham Vaidyasala gives an advance warning in their brochure, that no inpatient would be admitted in summer, a season inappropriate for ayurvedic treatments, and further sternly states that “no patient will be admitted immediately after the first consultation even if accommodation is available. The patient is first required to start treatment as an outpatient and the admission will be considered only after a month’s treatment based on the

feedback.”⁴⁴⁹

It would be erroneous to heap all credit for the proliferation of the package model on tourist demand. An equally significant contribution comes from shift in demand in the therapy segment, from outpatient to inpatient treatment. With women going out to work and joint families disintegrating, home based services are no more available. Given the paucity of labor supply in Kerala, it has become near to impossible to get paid assistance at home. A case in point is the emerging market of professional post-natal service for mothers. Traditional service-providers were women from two communities (*Vannan* and *Velan*). Given their scarcity today (see section 5.8), new business models have emerged. Initial service-providers were professional temping services which specialize in providing home nurses for geriatric care. In the past decade, ayurvedic service providers have begun to offer post-delivery packages. In mid 2011, an Ayurveda wellness hospital in Trivandrum went a step ahead offering a 14 day package ‘delivered at home.’

Commodification of biomedicine has already made people suspicious of doctors and hospitals. It is common to find Malayalees refusing to go to hospitals worried they would be forced to undergo unnecessary and expensive testing or surgical procedures. Now there is a fear that Ayurveda is going the same way. Unlike allopathic treatments that to a certain extent are verifiable, Ayurveda, with its subjective parameters and individualized therapies has more vagueness at its disposal. The package model allows far greater opportunity for reinventions and diversions than pharmaceuticals. A cursory survey of treatments offered shows that hospitals and resorts have graduated from simple therapy or rejuvenation packages to conjuring up new categories straying away far beyond conventional boundaries. For instance, one new generation hospital announces “memory fitness package” with a catchy slogan, “update your memory without chips”!

⁴⁴⁹ Vaidyamadham, e-brochure, <http://vaidyamadham.com/html/0700fram.htm>

8.8.2 Emergence of Brand Kerala in Ayurveda and Panchakarma

As people from various parts of India visiting Kerala⁴⁵⁰ got introduced to massages or treatment, brand *Kerala Ayurveda* emerged and spread like wildfire across the country. So when in mid 2005, Mr. Ramesh Vangal, a US based businessman of Indian origin, the owner of Katra Health Care acquired majority stakes in Kerala Ayurvedic Pharmacy Limited, he renamed it *Kerala Ayurveda Limited*. He rebranded the products that was earlier known by the acronym KAPL, as “Kerala Ayurveda”. In a recent founder’s day ceremony, he points out, “we have got to revamp, you see the branding is completely different. We are delighted that we actually have the name Kerala associated with our brand name because we would like to be your representative in terms of Kerala and Ayurveda”. An ex-President of Pepsico Asia-Pacific, he talked about his role in popularizing Pepsi in the country in the same breath as he talked about popularizing ayurveda. “In the last two and a half years I have been involved in Kerala Ayurveda. We have now got a US presence, five clinics doing well. We have four academies in the US. (Vangal 2009:6)”



Rebranded ‘Kerala Ayurveda’ products of KAL

The initial spread was in tourist spaces, but it did not take much time to get mainstreamed. Ayurvedic doctors in large cities began to add *Kerala Ayurveda*, especially *Kerala Panchakarma* to their clinics, either by hiring people from Kerala, or by getting themselves trained in Kerala or just as a mere branding strategy. The initial spread was to the middle and upper middle classes in big cities, but from there the trend spread to small cities and towns⁴⁵¹. It was easy for ayurvedic doctors to value add to their practice by incorporating these therapies, all they needed was an additional room for treatment and some low-cost equipment like a massage table. Take for example, Dr. Mahesh Gupta, an ayurvedic doctor who has set up a clinic called *Keraliya Ayurvedic Spa and Panchakarma Center* in Udaipur, a important tourist town in Rajasthan. He and his five other associates all ayurvedic doctors who have

⁴⁵⁰ Domestic tourist to foreign tourist ration stands at 12: 1

⁴⁵¹ The following account is based on a fortnight’s stay and speaking to friends and acquaintances in Pune, Bangalore and Bombay, and from chats with doctors and students at three national level conferences and workshops.

founded the establishment were early birds to catch on local demand that had picked up in the late 90s. Denouncing the trend of unqualified people running massage centers that he said was creating *badnam* (infamy, in Hindi) to Ayurveda, he claimed that theirs was the only second authentic *Keraleeya* center in the region. The first one was a center run by Keralites, which he said mainly focused on providing services to people from Kerala⁴⁵². Dr. Gupta was not using the Kerala brand in vein; he had undergone training in four different places, all traditional places of excellence⁴⁵³. He enthusiastically reeled out names of medicines and treatments in Malayalam, a substantial accomplishment for a Hindi speaker. He now offers a two month certificate course for therapists, which also helps to meet their inhouse personnel requirements. I asked him if the Kerala name was just hype, after all Panchakarma was also part of classical Ayurveda. He emphatically countered, “No, no, it is indeed very effective for treatment and rejuvenation.” Though located in a tourist town, his focus is on treating locals. There is much demand, especially from arthritis patients.

Foreigners fundamentally come for relaxation, not for treatment. But local people are interested in treatment mainly for chronic diseases. There is enormous demand for Panchakarma. We have a range of prices, from ₹ 200-300 (\$4-5) to ₹ 1000 (\$20) per session depending on the level of income. I specialize in sciatica. I have great success in treating insomnia and depression combining *Shirodhara*, aromatherapy and reflexology. I can cure insomnia in two days without medicine.

Since the main revenue earner for therapy is service, which is mediated through the practitioner, low margin classical products make more economic sense than proprietary medicines. Dr. Gupta listed three Kerala brands in terms of popularity - AVS, AVP and Nagarjuna, three of the top five manufacturers in Kerala. This shows a new trend, *the circulation of conventional classical ayurvedic commodities through unconventional channels built on a service-centric model inspired by tourist Ayurveda*.

Even in the city of Pune, one of the four pockets of classical Ayurveda⁴⁵⁴, *Kerala Ayurveda* has taken firm roots. According to *Neha*, an IT professional, it has become fashionable for middle class people to go for wellness treatments that ranged anywhere from an hour’s beauty treatments to a fortnight’s anti-stress treatment. Unlike tourists, locals have the advantage of availing treatment

⁴⁵² Before tourism made Kerala Ayurveda popular, there were clinics and agencies of Kerala manufacturers in large cities that aimed at catering to the Kerala Diaspora. Non-Keralites rarely visited such centers.

⁴⁵³ Vaidyamadham, Keraliya Ayurveda Samajam, Arya Vaidya Sala and Indian Institute of *Panchakarma*.

⁴⁵⁴ Mr. Ranjit Puranik, General Secretary of Ayurvedic Drug Manufacturers Association (2002-2010), identified four regions as being rooted in classical culture besides Kerala, i.e., Pune and the Nasik belt in Maharashtra, Varanasi in Uttar Pradesh, Surat-Baroda belt in Gujarat, and South Kanara in Karnataka.

sessions; they could tailor it to suit their works schedules and they did not have to worry about boarding cost. She says, “take a look at the weekly Sunday supplement of *Sacral* (A Marathi daily). You will see that it is full of Kerala Ayurveda advertisements”. A traditional Ayurveda user, she was skeptical of the new developments “aimed at taking advantage of gullible customers”.

Ayurvedic wellness services have also become popular in the IT capital Bangalore. *Shailah*, an IT professional in her early 40s, a native of Andhra Pradesh, tried ayurvedic massage at a high-end ayurvedic resort in Kerala during a summer vacation. She found it so rejuvenative that she identified a place offering Kerala treatments in Bangalore and enrolled into a fortnight’s program during Christmas vacations. *Vineet*, a business professional in Bangalore in his mid 30s was troubled by a chronic lower back pain. He went to the branded *Ayush Therapy Center* attracted by their advertisement on a bus shelter painted all over with attractive images of Panchakarma. The treatment eased his troubles considerably. He was advised to use two classical ayurvedic medicinal oils that he now continues to use at home. Note here the expansion of the catchment of classical products to include non-traditional users. *Chandrashekhar*, a retired school teacher in a rural town in Southern Karnataka bordering Kerala, had recovered from a trans-ischemic attack five years ago. But he had persisting numbness in an arm for which he decided to try out services offered by a local Ayurveda hospital. The masseur who did the massage was traditionally skilled as part of his *garadi* (local gymnastic tradition)⁴⁵⁵. He skillfully manipulated the afflicted nerve and in three sessions, the pain disappeared. The ayurvedic hospital he visited grew out of a clinic started around 15 years ago. The Panchakarma unit was added only a decade ago, just when its fame had begun to diffuse across the border.

Developments like this are not limited to the neighborhood of Kerala. *Dr. Rajkumar*, an ayurvedic practitioner hailing from Uttar Pradesh runs an eco-shop offering Ayurveda treatment to customers in Wardha, a small nondescript town in Northern Maharashtra, known for its historical association with Gandhi. Since 2005, he has a new sign on his board, “Kerala style massage treatment offered.” The demand for his services is so high that he struggles to find an empty slot for an interview

⁴⁵⁵In this region, such massages were done by traditional vaidyans or masseur-experts to treat sprains and fractures and even paralysis. A neighbor of his who was bed-ridden with post-stroke paralysis had recovered after such treatment.

appointment.⁴⁵⁶ Curious to explore Kerala style massage and Panchakarma, he took a year's training from Sahyadri. He reeled out a few Malayalam words with great enthusiasm. "I can even sing a song in Malayalam", he sang a Christian devotional song which he learnt visiting a classmate's house.

Even State governments have succumbed to the Panchakarma hype. In 2002, Tourism Department of Andhra Pradesh State entered into a joint venture with Santigiri to set up 15 Health Centers in the state. In September 2009, Himachal Pradesh government announced its plan to implement Panchakarma treatment in 20 hospitals. The Health minister, an ayurvedic doctor himself, announced "Himachal will study and learn the functioning of Panchakarma centers in Kerala and will start it in 20 hospitals of the State with active participation of State Tourism Department. Moreover, implementation of this system will go a long way to attract tourists".

8.8.3 The emergence of a domestic wellness segment

The most spectacular of all the impacts of tourist interest, less visible and underrated compared to the global expansion, is the emergence of a *domestic wellness segment*. Ayurvedic stakeholders of various hues have developed strategies to tap this market. In fact, by participating in this new business, a large number of ayurvedic professionals have become stakeholders in the very process that they are critics of. Most important in the initial phase of expansion are large non-ayurvedic business groups. They rushed in to capture the wellness market unhindered by the conservative ethos of ayurvedic stakeholders that limited their expansion to therapy-centric hospitals. Over time, some traditional groups began to expand into the market of wellness, either through joint ventures or networks of wellness clinics. The most important of these are: *Lever Ayush Therapy Center* with 43 centers, *Birla Kerala Vaidya Shala (BKV)* with 27 centers and *Kerala Ayurveda* with 11 centers. All of these are new generation enterprises, either joint ventures with or acquisitions of traditional stakeholders. The first is a joint venture between a large Kerala-origin ayurvedic manufacturer and a multinational company firm. The second is run by one of the largest business conglomerates of India that acquired an ayurvedic company from Kerala, and the third is run by a Kerala origin ayurvedic manufacturer

⁴⁵⁶ The only slot available was 6.30 a.m. a week later on a Sunday. Majority of his clientele were elderly people suffering from arthritis, back pains and joint pains. His charges were nominal, a mere ₹ 150 (\$3) per session. He restricted his services to massage treatments, uncertain of getting sufficient clientele to recoup his investment for upgrading his facilities.

acquired by an US based health care group (for details, see Section 8.5).



Ayush-Lever Wellness Center, Fort Kochi

Besides those specifically branded as wellness centers, it has become now fashionable for regular hospitals of all sizes and hues to offer wellness treatments. As mentioned earlier, the market for disease treatment is far restricted compared to that of health maintenance or enhancement. Both the post-tourist modes of commodification and the changing health requirements of patients are providing new ideas for entrepreneurs to expand the market for Ayurveda. In a discussion session in the Global Ayurveda Festival in Trivandrum (February, 2012), Dr. Ramesh Varier, owner MD of AVN, an ayurvedic doctor himself, responding to a speaker's complaint of underpaid doctors said it was not the State's, but the ayurvedic physicians' responsibility "to create demand" for their services. He first stated that Ayurveda's two main objectives were primarily to: 1. maintain health and prevent disease, and 2. To treat disease. And then he rhetorically asked his colleagues in the audience "are we observing the first objective as ayurvedic physicians?" Answering himself with an emphatic "No!" he added, "the general notion amongst the public is that when I am sick then only I approach the doctor". He said that it is important that doctors create awareness among the public about Ayurveda's health maintenance objective, "If you can create that, even healthy people will walk into your clinic, not necessarily only sick people". He narrates his own efforts in the direction. Patients visiting his clinic are routinely subjected to *prakriti* (constitutional) *analysis* and are provided with 'scientific data' recommending further investigations. They are also provided with *dinacharya* (daily regime) and *ritucharya* (seasonal regime) recommendations. Taking into account the ayurvedic concept of decadal decline in the status of health, he also initiated age-specific *Rasayana* (rejuvenative tonic) recommendations. As a member of CCIM, he had noticed the absence of patients in ayurvedic college hospitals across the country, outside Kerala. He has conscientized other CCIM members to take initiatives to popularize Ayurveda among the public. He mentioned a recent initiative in which an ayurvedic college in Bangalore to organize '*swarnaprashana*' a program to build immunity for children that had 200,000 subscribers.

8.8.4 Expansion of the Service Market in Kerala

There has been an unprecedented expansion in the ayurvedic therapy segment in Kerala in the past two decades, some of which is the expansion of the conventional hospital segment. Ayurvedic hospitals had begun to come up in the early 70s and had attained a significant growth momentum by the 80s in response to increased urbanization. As joint families broke down, people could no more rely on home based services for treatment management. Both public and private sectors have grown to respond to this requirement. Today the government infrastructure for Ayurveda consists of 871 institutions (124 hospitals, 747 dispensaries) with 4020 beds and 160 NRHM (National Rural Health Mission) dispensaries. Ayurveda has 2/3rd the number of allopathic institutions but less than 1/10th in terms of number of beds. It treats 2.2 mn outpatients a year, a little less than half that of allopathic system, but the inpatient number is negligible (See Appendix J.1).



*100-bedded district government hospital,
Thodupuzha*

The number of private ayurvedic hospitals as of March 2004, was 4332, with a bed size of 5502. The private system employed 6000 doctors and treated 9.5 mn outpatients and 0.2 mn inpatients⁴⁵⁷, four times that of the public system (Department of Economics and Statistics 2004) (See Appendix J.2).

Two trends can be noted in the expansion of private sector Ayurveda in Kerala: *traditional* and *non-traditional* though these are not mutually exclusive categories⁴⁵⁸. Traditional stakeholders tend to expand linearly, increasing in size and reach while continuing with their focus on treatment. Almost every ayurvedic manufacturer who had a hospital has scaled up by adding rooms and by expanding into branches. Change in this segment is mainly restricted to improved facilities. For some, it means nothing more than adding a few luxury air-conditioned suites to their otherwise Spartan establishments.

⁴⁵⁷ 4825 allopathic institutions employed 15,000 doctors, treated 39.3 million outpatients and 4 million inpatients.

⁴⁵⁸ Based on practitioners', hospital owners' narratives and secondary data from press releases, brochures, advertisements.



Giant hoarding of Krishnendu Ayurvedic Hospital on NH 47, Kayankulam

Some go a step ahead with establishing new swanky hospitals to cater to 'modern' clientele. While some of this growth might be a natural response to urbanization, it is likely that some has been caused by the growth spurt in the service market post-tourist commodification. The largest of the hospital establishments in this category belong to top ayurvedic manufacturers⁴⁵⁹. The proportions of foreigners treated in these hospitals is substantial: 30% in AVS, 24% in AVP and 30% in Vaidyaratnam.

Medium scale manufacturers have also expanded their hospitals⁴⁶⁰. Another set of traditional stakeholders are treatment-focused groups, who have also seen considerable expansion⁴⁶¹. Groups that have started private medical colleges post liberalization, beginning early and mid 2000s are other large scale contributors to the expansion⁴⁶².

Non-traditional stakeholders who have entered the market on the other hand tend to be heavily influenced by the new era of commodification. This category includes a variety of stakeholders, old and new, big and small, ranging from ayurvedic doctor-entrepreneurs to hereditary practitioner families, from non-ayurvedic businessmen to biomedical hospitals. Most visible are large luxury hospitals aimed at the upper crust of the society, to NRIs and foreigners⁴⁶³. These hospitals are distinguishable from the traditional in that they appear somewhat touristy in their approach. They advertize heavily in print media with emphasis on treatment and wellness packages.

⁴⁵⁹ Arya Vaidya Sala's (AVS) which started with a small hospital in 1954 has now grown to 160 beds. In the past decade it opened branches in two other cities in Kerala, one of them 80-bedded and a 35 bed hospital in Delhi. Arya Vaidya Pharmacy which started as a small hospital in 1957 has grown to 120 bedded hospital. Vaidyaratnam, one of the earliest to start a hospital (in 1910) now has a 150 bed medical college hospital. They opened a 'modern' 53 bed hospital in 2001 to specifically target IT professionals. In 2007, they went a step ahead and opened a branch in the IT city, Bangalore.

⁴⁶⁰ State-owned Oushadi ventured into treatment for the first time with a 30 bed Panchakarma center in 2004. Dhanwantari (estb.1933) has over the last decade established seven hospitals, the largest one being 20 bedded.

⁴⁶¹ For example, Pam Labs has grown from 4 bed in 1954 to 100 beds, Nangelil Hospital from 10 beds in 1980s to 100. Kerala Ayurveda Samajam has grown into a 100 bedded hospital and 7 branches with 15-60 beds each.

⁴⁶² The largest of these, Santigiri, has a 150 bed hospital (in addition to another 100 bed hospital in Palakkad), and the other four have around 100 each, that are attached to the Ayurvedic medical colleges.

⁴⁶³ Some examples are Sreedharyam eye hospital which grew from an 8 to 260 bedded hospital and 8 branches across India in 6 years (estb. 2004) established by a eye specialist practitioner family. Punarnava (1993 estb.) with 175 beds in three hospitals in and around Kochi established by a team of Ayurvedic doctors. It also runs tertiary care in Ayurveda for a large private biomedical hospital. Ahaliya and MAHAR both with 100 beds each were founded in the early 2000s.

Certain new formats have developed in the service market, the most notable being clinic/hospital franchisees and high-profile hospital chains. These categories are exploited by both traditional and non-traditional stakeholders. For example, treatment brands floated by two manufacturers, *Soukhya* of Kandamkulathy Vaidyasala and *Jeevanam* of Pankajakasthuri are promoted through weekly consultation sessions on Malayalam TV channels. Though the format is new, they are simply extensions of the existing agency model. On the other hand, the kind of franchisee the Earth Group of hospitals has initiated is certainly a departure from the norm, in terms of being blatantly market-focused rather than therapy-focused. Dhatri, a new generation cosmetic-focused manufacturer from Kerala has announced a chain ABS (Ayurveda, Beauty and Slimming) clinics in 2009. Beginning with three, the company announced its intention to expand to 200 clinics by 2015.

As for high-profile hospital chains, the most notable is AyurVAID which made news in early 2008 when it got venture funding from a US philanthropic organization for its proposed hospital chain. It claims to be “a pioneer in rigorous process and documentation driven classical Kerala Ayurveda treatment services that has been appropriately and seamlessly integrated with modern medicine”. Their ambition is to create 40 hospitals in this model. It is headquartered in the IT up-market region of Bangalore. In 3 years, AyurVAID has grown to 6 hospitals with a collective bed size of 160. Mr. Rajiv Vasudevan, the founder-CEO claims that the intention is to judiciously blend profit and non-profit ideals; differential branding is done catering to different segments of the economy⁴⁶⁴.

Another important development is the expansion of Ayurveda into biomedical spaces, certainly an unusual ‘diversion’ from its regular path. Almost every large allopathic hospital in Kerala has opened an Ayurveda wing. Some notable examples are Amala cancer hospital, Karithas, Matha and KIMS. According to a survey, 105 institutions have both allopathy and Ayurveda (Department of Economics and Statistics 2004)⁴⁶⁵ The biomedical sector’s new found fascination for Ayurveda is also visible in the national level. Apollo group of hospitals, one of the largest and the most elite in the national

⁴⁶⁴ Four AyurVAID hospitals are targeted at the upper crust; two are called AyurSEVA hospitals targeted at the lower economic strata, one of which is located in Dharavi, Mumbai, Asia’s largest slum. (Source: personal interview 2010)

⁴⁶⁵ There are 47 hospitals with homeopathy and Ayurveda, 18 with all 3 three systems and another 11 with Ayurveda and other combinations. Ayurvedic hospitals opening allopathic wing is rare, one example is PAM labs, Ernakulam.

biomedical sector recently attempted to forge ties with AVS that did not work out⁴⁶⁶. A few ayurvedic practitioners who had colleagues working in allopathic hospitals were critical about the trend. Firstly, they said it was plainly oriented to profiteering. One of them pointed out, “the hospitals wanted to make sure no patient would escape their clutches”. Secondly, their value system and expertise were not suitable to Ayurveda and is likely to lead to compromising ayurvedic principles. Thirdly, they pointed out that there was no communication between the two medical systems; ayurvedic doctors had a subordinate status and were expected to do nothing else than take care of patients sent to them by the allopathic section.

8.9 Going to the roots of wellness commodification

When Pune resident *Neha* says that “all these massage parlors in the name of Ayurveda are fooling people”, she is representing a popular perception of ayurvedic massage as nothing but a corruption of Ayurveda. This perception results partly from the way the services are peddled, and partly from her unfamiliarity with the non-medicinal facets of Ayurveda. Few outside Kerala are aware how rooted the wellness treatment has been in classical ayurvedic practice in Kerala. In the absence of this knowledge, ayurvedic massage gets interpreted as a tourism-generated distortion. As mentioned earlier, Ayurveda aims at enhancing health and longevity than purely address disease treatment. Seasonal diet regimens, routine cleansing, massage and wellness treatment were part of preventive, palliative, and rejuvenative practices. In fact rejuvenation is one of the eight branches of Ayurveda. Panchakarma (cleansing therapy) is a process that is not only part of disease treatment, but also part of rejuvenation and seasonal wellness treatments. The classics recommend annual wellness treatment but do not prescribe a season. In Kerala, *Karkidakam* month in the peak monsoon season (July 15 to August 15) is considered the most ideal for *Sukha Chikitsa* (i.e., wellness treatment).

⁴⁶⁶ Though the reasons are not known, it would have been surprising if it had worked out. Apollo is a giant business conglomerate, one of the first to get into high-cost hospital chains for the elite. AVS is a therapy focused non-profit trust.



Elephants undergoing Karkidakam season wellness treatment: Guruvayoor Temple, August, 2009

Classical Ayurveda was historically considered a luxury commodity. In fact, the classic compendium Charaka Samhita has been criticized for being elitist. It expects ‘affordability’ is one of the criteria expected from an ideal patient. Though there are guidelines on how to manage treatment for the poor, much of the focus on daily regimen and life style, and prescription for cleansing and rejuvenation seemed to have been tailored to meet the requirements of an elite leisure

class. Charaka Samhita, with a touch of humor states that “the original patrons (for rejuvenation) were none other than holy men who had left their Spartan life in the Himalayas for a life of ease and plenty in the plains only to become obese, inactive and infirm. Thereafter, they hastened back to the Himalayas and received the formulas for rejuvenation from (Lord) Indra” (Valiathan 2003: lxviii).

But why did Panchakarma acquire special significance in Kerala? This is a difficult question to answer, as the variables involved are many and spread over centuries of multi-dimensional history. Ayurvedic practitioners and history scholars attribute the continuity and popularity of the therapies to two disparate cultural art forms, one of war and one of entertainment; *Kalari*, the martial arts and *Kathakkali*, the dance-art form. Both demanded flexibility of limbs and suppleness of the body.⁴⁶⁷ The dance movements of *Kathakkali* that took shape during 17th century is said to be heavily influenced by *Kalari*. The story of origins of *Kalari* go far back into medieval history of a prolonged state of war that led to compulsory military training, the proliferation of gymnasia and suicide squads⁴⁶⁸. The injuries they sustained during training and war made them experts in this science, and in the knowledge of anatomy, making them expert orthopedics. Many also achieved expertise in *Marma*, a branch of

⁴⁶⁷ In modern Kerala, Kathakkali is a marginalized art form. On the other hand, Malayalam movie celebrities, the modern counterparts of *Kathakkali* artists are one of the most important consumers of wellness treatment today. In early 2010 newspapers were abuzz with the news of Mohanlal (one of the top two male superstars in Malayalam) undergoing *Sukha Chikitsa*. In an interview the star said, “Don’t we give our car for service once in a while? This is just like that. The body also needs servicing. In my case, I have been doing it annually for the past 23 years (14 day treatment)” (Mathrubhumi, 2010).

⁴⁶⁸ During much of the period in ancient and medieval times, Kerala was ruled by the Chera kingdom. A constant threat to this empire was from the neighboring Chola kingdom of Tamil Nadu. In the 11th century, a prolonged war dragged on between these two kingdoms creating a somewhat Sparta-like military requirement in Kerala. Compulsory military training was introduced. *Salais* (schools) were converted to *Kalaris* (gymnasia). *Namboothiri* Brahmins transferred their attention from temples and priestly duties to these institutions. The institution of *Chavers* (suicide squads) also arose during the same time (Menon 1967).

Ayurveda/Siddha that dealt with pressure points. Panchakarma was still the realm of the vaidyan, but the widespread presence of *Kalari* trained people made the skills and human resource readily available for preparatory procedures. The preparatory procedures that were part of ayurvedic treatment were accessible to all classes, but full-fledged wellness therapies were by and large affordable only to the elite. *Joseph Vaidyan*, an elderly vaidyan from a third generation Vaidyan family in an interior town in Kottayam, enjoys responding to questions that bring back old memories.

In my childhood, about five decades ago, *Sukha Chikitsa* was essentially a luxury commodity that only the elite could afford. The elites, mostly rich land owners and merchant class, owned the basic infrastructure for wellness treatment, i.e., mainly a *Droni* (massage table with grooves for collecting oil), related accessories and space for treatment. They could afford the services of a vaidyan and masseurs. Such people got their treatment done annually in *Karkidakam* for 7-28 days. People from the less privileged class would borrow this equipment during off seasons.

However, not all wellness treatment was limited to elite consumption. Until recently, the procedures were either done at the patient's house or in the vaidyan's house depending on the patient's class, affordability and complexity of the required procedure. *Joseph vaidyan* said that it was also common for laborers to undergo massage sessions following back-breaking work, to revive their sore muscles. There was no dearth for masseur service providers, either *Kalari* trained people or ayurvedic doctor's assistants. Procedures and material could also be tailored according to affordability, a reason for their widespread use and continued survival. In a village in interior Kottayam, *Mukundan*, a 56 year old farmer, recalls his days of youth (that is, mid 60s), "*Gurukkal* (respectable term for a *Kalari* practitioner) was very popular. It was common to hear this statement among average middle-income farmers planning to go for a massage to *Gurukkal*, "*Oru mai vazahakam kittattenne*" (let the body get some flexibility).

Growth in hospitals with in-patient facilities spiraled in the 70s during which period a few located in large cities recognized the needs of an expanding upper middle class⁴⁶⁹. *Annamma*, a housewife aged 65 in interior Kottayam, was introduced to wellness treatment by her uncle, a prominent businessman, in the early 80s. Since then every year she has been undergoing wellness treatment in an ayurvedic hospital in Kottayam. The hospital, one of the pioneers in the wellness market, was named *Sukhodaya* ('the rise of wellness'). Quick to recognize a new niche in the late 70s,

⁴⁶⁹ Mainly rubber/spice estate owners, businessmen, families rich with remittances from gulf, and so on.

predating tourist commodification, it began to advertize wellness treatments targeting the upper middle class. *Annamma* was known to constantly urging her friends and relatives to try it out. According to her cousin, it was her strategy to remind others of her position of wealth. Not many were able to afford the treatment then; cost of a session used to be around ₹ 4000 (\$80). *Annamma's* nephew, *Tony*, a 45 year old small factory owner talks about his treatment experience for the last 20 years. Since his business began looking up five years ago, he has been getting annual wellness treatment in a mid-range hospital. Until then, he used to go to the local branch of the reputed CVN Kalari for an occasional massage, which he says “can make your body twist and turn a few degrees more than normal!” Now wellness treatment is no more a luxury, “So many smaller centers have opened. Even workers at my factory are able to afford *Sukha Chikitsa* in the *Karkidakam* season.” It was this commodification that enabled Suresh, a Keralite scientist in Bombay to undergo a full-fledged ayurvedic massage regime locally. In the past forty years, he had been a regular buyer of medicines from Kerala ayurvedic agencies. It was only in the past decade that they had expanded to include wellness therapies, something he had never dreamt of being able to access without going to Kerala.

The clientele that Charaka Samhita had in mind when the procedures were formulated had not changed, except that the target population he had in mind is no more a minority. The service class had expanded creating millions of people with problems similar to the Himalaya-returned yogis - sedentary life, irregular diet, over indulgence and stress. They have some additional problems now. They live in urban concrete jungles away from nature, buy food from supermarkets and have lost touch with the Indian way of life, food and philosophy. They are ready to pay sky-high prices for a few square feet of green space away from urban noise and pollution. They are ready to shell out hard earned money for the quintessential Indian grandmother's cuisine repackaged as *ayurvedic food*, and to squat in front of the television to learn *yoga*. Caught between wayward schedules, they feel the need of an expert to dictate them *Dinacharya* (daily regime) and *Ritucharya* (seasonal regime). In a nutshell, they are ready to pay through their noses for being educated in the basics of right living written two millennia ago - how to eat, how to think and how to behave right to maintain health, avoid illness and enhance longevity.

8.10 Discussion

There are several reasons for the growth of the therapy market, the most important being growing internal demand by an increasingly aging population, increased demand for inpatient treatment, increased affordability of an expanded middle class and demands from an affluent diaspora. The tourist market must have significantly contributed by providing a model for commercialization to tap an already existing market both by popularizing wellness services and creating a hype that allowed new capital to flow into the service segment. Ayurveda otherwise always depended on traditional stakeholders who, in market parlance, were 'limited' by their therapy and non-profit orientation. An upcoming hospital franchisee service provider addressing a gathering of fresh Ayurveda graduates, "you need to move away from the preconception that Ayurveda is not profitable." The financial consultant hired by the group educated them on making an ayurvedic hospital a profitable venture, the success which would depend on "how many consultations you are able to convert into treatment". Though profit-mindset is often interpreted as a distortion, some new generation doctors question why Ayurveda alone has to be bound by the service mindset. They point out that in a money-driven economy, it is the non-profitability of Ayurveda that draws talent away from the field vis-à-vis the profitability of allopathy. In their view, flow of capital carries more meaning than just monetary value; it raises the prestige of Ayurveda in the public's eyes.

I argue that of the greatest concern from the perspective of ayurveda's affordability to the masses, are not visible diversions like the proliferation of dubious massage parlors but the unnoticed overselling of services to unsuspecting patients that occurs in conventional spaces frequented by middle and lower income groups. In the biomedical market, vagueness of diagnosis and treatment has been used to push therapeutic interventions like surgery. Ayurveda provides an array of concepts conducive for commodifying forces to exploit most important of which are:

- Individualization, a primary feature and strength of the ayurvedic approach to diagnosis and treatment provides immense scope for convenient re-interpretation.
- The broad compass of Ayurveda that includes diet, lifestyle modification and cleansing makes it easy to build in several elements into packages. For example, it is common to find commonplace Indian food being marketed as premium *ayurvedic diet*.
- Preventive and wellness treatments have infinite potential for commodification because the hospital is no more limited by the relatively narrow context of disease and illness.

I came across first hand, one such instance of therapy-pushing, a doctor strongly recommending a *Udvaartana* (reverse-massage) package to a lady who wanted a solution for obesity without making any mention of diet or life style modification⁴⁷⁰. I heard a similar story from a respondent, an educated young woman who went with a complaint of obesity to a medium range ayurvedic hospital in Thrissur.⁴⁷¹ An ayurvedic college lecturer in Kerala who studied in a capitation institution in Karnataka said she quit her job from a hospital in Bangalore after a few months because of pressure from the establishment to prescribe expensive therapies to patients.

Interestingly, while there is much talk about other distortions, there is silence on this subject, perhaps because every stakeholder in Ayurveda benefits from service commodification. The only person who has been vocal on this issue, is Late Dr. Raghavan Thirumulpad, one of the most admired contemporary ayurvedic scholar-practitioners in Kerala, who died recently, at the age of 90. An icon of tradition and austerity, Dr. Thirumulpad in his late 80s was objective and level headed; he was open to modernization and was sympathetic to the pressures of business. Given such credentials, I consider his views on the subject worth close attention. He acknowledges legitimate uses of Panchakarma for cleansing and rejuvenation, but warns that it can be counterproductive when unnecessarily done.

There is plenty of media publicity which claims that Panchakarma as the apex of ayurvedic treatment, which have also served to attract people's attention. Leading hospitals like Arya Vaidya Sala and Vaidyaratnam, have become models in this approach. We cannot ignore the economic advantage that accrues to Ayurveda system as a industry and business by way of such activities. This is the time when wealth is considered the standard of success in any front. There is no point in insisting that Ayurveda alone should remain aloof from this trend. As much as in profit, one should also put effort in service is all we can suggest...But *Panchakarma* is being done in situations where cleansing wouldn't have been necessary, could have been treated by medicine alone (Thirumulpad 2002: 305-306).

Supporting Dr. Thirumulpad's argument that treatment in Kerala was *Shamana Pradhanam* (pacification-centric), Murali (2009) points out that Ayurveda identifies three stages of disease in terms of gravity (mild, moderate and severe), and *Shodhana Chikitsa* (cleansing) should be done only to address serious cases. Mild and moderate conditions should be handled with medicine, diet or life style modification. He points out two problems with the cleansing method: firstly, it is expensive, and

⁴⁷⁰ Reluctant to do the procedure, the lady sheepishly said she expected some decoction to take care of her problem. The doctor conceded and almost wrote the prescription, but he managed to sweet talk her into trying the package.

⁴⁷¹She was subjected to the same procedure package - the hospital did not take into consideration that her problem was hormonal and had to be dealt with systemically. Her experience was particularly bad, as she ended up having skin abrasions. Reverse-massaging is done with medicinal powder and is expected to be done by skilled therapists.

secondly, it is harsh on the patient and should be therefore avoided when unnecessary. Thirumulpad's biggest worry was with regard to ayurveda's affordability to the masses.

All this is possible for only who have extraordinary wealth. Charaka mentions this. The chapter called *Upakalpaneeya* in *Vimana Sthanam* where he talks about *Shodhana Chikitsa* (cleansing) he says, "only kings or people like kings or people with extraordinary wealth can afford this kind of treatment. But even poor people also afflicted by grave diseases".....If you can consider treatment equivalent to food and cloth and are able to meet the basic requirement, it can be simplified such that it becomes affordable to anybody. The large institutions that are motivated by money, will not be able to pay much attention to this issue. Despite that, I feel, this issue needs to be deliberated on (Thirumulpad 2002: 305-306).

Unlike a segment of traditional stakeholders who are conservative and opposed to change, at the age of 86 he wrote, acknowledging the need for change and also the constraints of today's practitioners,

Ayurveda will continue to change. And it must. The principles will remain the same, but intelligent people will make appropriate changes when the practice at different places for different people...I learnt Ayurveda from my guru spending no money. I was advised against treating my profession as a means to making money. It is not the case today; people have to now spend a lot to become a doctor. I cannot sit in judgment on these changes... (Thirumulpad 2008:16)."

Post tourist popularization has created a rush for self-financed Ayurvedic education; Kerala which had a shortage of ayurvedic doctors up to mid 2000s, by the end of the decade has reached a situation where doctors have to register their names in the employment exchange (Anand 2010). Students in self-financing institutions spend a capitation fee of ₹100 - 200 thousand (\$2000-4000), annual fee of ₹100, 000 (\$2000) and half of that money (\$1000) for boarding and lodging, for five years. Approximately the total cost would be around Rs one million (\$20,000).

A natural response of the State to curb alleged malpractice is to introduce new forms of regulation and standardization. But for mandating the presence of ayurvedic doctors in tourist centers and voluntary tourist center certification, there had been no regulation to police the service sector. To address this problem, the Kerala government put forward The Kerala Ayurveda Health Centers Ordinance in 2007, requiring Ayurvedic Health Centers to be licensed under Categories A, B and C. Category B centers were forbidden from in-patient treatment. Category C centers could not undertake complicated treatments including the cleansing treatments. The Bill met with opposition from the Ayurvedic Hospital Management Association (AHMA) and the Ayurvedic Medical Association of India

(AMAI) who submitted memorandums to the government expressing their reservations⁴⁷². It is now under revision; the government had acceded to several of the demands made.⁴⁷³ A doctor who runs a ten bed hospital in Central Kerala pointed out that Bill “made it difficult for legitimate Ayurveda practitioners to run health centers, but makes it easy for quacks”. Similar issues have been raised in the AMAI memorandum, which points out many of the conditions as unviable for average practitioners with small clinics to comply with (AMAI 2009).

In October 2009 the ISMH Department put forth an accreditation policy for Ayush health Centers in India⁴⁷⁴. A minimum bed strength of 10 beds is essential for an AYUSH Hospital to be considered for the Accreditation Program. This policy has been received with much enthusiasm by the tourism industry and other large groups. Though there was no serious objection to the policy from any quarters, questions were raised about the appropriateness of applying the biomedical format to ayurvedic hospital (for example, Editorial 2010a). Though it may not be harmful, there is a fear that quality gets decided by material parameters easily conjured up by capital than reputation built over a life time of committed service. Thus far, five hospitals from Kerala have obtained accreditation of which all but one are non-traditional stakeholders.⁴⁷⁵ The next step taken by the Indian government was to add Panchakarma to its list of standardization projects. A workshop that involved Panchakarma experts across the country was conducted in

February 2010. The debates showed differences in every single aspect of procedure, far more variable than medicine preparations. The consensus was to be built towards development of “standard operating procedures” for Panchakarma to



Resolution on Good Panchakarma Practices, Global Panchakarma Summit, 2010, Thrissur

eventually evolve a policy of *Good Panchakarma Practices*. The pressure on homogenization of services was coming after a decade of the implementation of *Good Manufacturing Practices* policy. Once again

⁴⁷² As learnt from meeting with Dr. Joji Thachil, General Secretary of AMAI in 2009.

⁴⁷³ As learnt from meeting with Dr. P. Udaykumar, the General Secretary of AMAI in Feb. 2012.

⁴⁷⁴ National Accreditation Board For Hospitals and Healthcare Providers (NABH), Government of India.

⁴⁷⁵ A tourist group, a modern Ayurvedic hospital chain, a missionary run biomedical hospital with an Ayurveda wing and a superspecialty Ayurvedic eye hospital.

commodification had demanded its inevitable price, the need for standardization and regulation⁴⁷⁶.

8.11 Conclusion

Researchers have been concerned that when culture is commodified in the context of tourism to cater to the outsiders' gaze, it leads to loss of meaning and identity, but some scholars have argued that it can also help to preserve or reinforce ethnic identity (Stronza 2001). The discussion in this chapter has noted several instances of diversion that show both these facets of commodification. Tourist commodification has stretched the "commodity context" (Appadurai 1986), making it saleable in new spaces where conventional checks and balances do not operate. This allows for unbridled commercialization that often compromises the conventional ethos of Ayurveda. Of the various commonly alleged 'distortions', the most visible is the mushrooming of massage parlors that traditional stakeholders fear will tarnish the image of Ayurveda. The next significant development is the proliferation of menu-driven and market-driven therapy packages that are inconsistent with the fundamental ayurvedic principle of individual tailoring of diagnosis and treatment.

On the flip side, though there is much hue and cry about the casual selling of Ayurveda to pleasure-seeking tourists, it has served to spread awareness and create a brand value for Ayurveda in general and for Kerala Ayurveda in particular. There is a steady stream of both Indians and foreign nationals trickling into Kerala to access ayurvedic medical or/and health services. Profiles of such patients have begun to appear in various media. A recent issue of Ayurveda Tourism monthly carried a write-up from a 30 year old muscular dystrophy patient from Finland who significantly improved with ayurvedic treatment in Kerala for which she returns every year. The article quotes her statement that her experience had inspired many family members and friends to follow suit (Thorstrom 2012).

Service commodification has brought back attention to Ayurveda's health maintenance and wellness facets that were neglected in the disease-centric paradigm. Owing to shift in focus from illness to wellness, the line between hospital and resort has blurred; the "commodity context" (Appadurai 1986) has not only diversified but has also become ambiguous. This is complicated by the entry of new service providers who re-invent conventional concepts to suit market logic. At the same

⁴⁷⁶ Account based on participant observation in Panchakarma Global Summit, 5-6 Feb, 2010. Cheruthuruthy, Kerala.

time, it should be recognized that Panchakarma and rejuvenation were not novel inventions made to cater to the tourist market, but procedures that were part and parcel of classical ayurvedic practice in Kerala, though limited to elite classes because of affordability. Though there were sporadic attempts in the 80s to cater to an emerging elite, it was tourist interest that acted as a catalyst in its shift from luxury to a mass commodity. This created new modes and contexts of selling, some of which departed from existing traditions. The ayurvedic landscape in Kerala today shows the existence of both traditions, the old and the new, and a seamless continuum between the two. Whether a particular format is considered a distortion or a creative re-invention is a question that may not lend to an easy resolution.

Tourism has certainly expanded the space for Ayurveda into previously unexplored territories. The revenue potential of the field has forced the State's attention to a neglected segment bringing in much needed patronage for research, training and global canvassing. Tourism-induced entrepreneurial atmosphere has enabled fresh money to flow into the field of Ayurveda that was otherwise dependent on the limited capabilities of conventional stakeholders. This has gone on to create new infrastructure, providing a platform for Ayurveda to compete with biomedicine in becoming a potentially profitable segment. But at the same time, traditional stakeholders find that the State which aggressively promotes ayurvedic tourism contributes little towards meeting the increased demands for regulation that such commodification has brought forth. Service commodification is now overtaking pharmaceuticalization; this phenomena demands the coining of a new term. *Kerala Ayurveda* that remained affordable to the masses in the era of pharmaceuticalization, is perhaps in the danger of losing its non-elite orientation in this new era of commodification.

CH 9: MEDICINE COMMODITIES: REINVENTIONS AND DIVERSIONS

Though service commodities have stolen the show, medicine commodities have also expanded their market to new niches. Being part and parcel of ayurvedic services, they have undergone some transformation in terms of content, form and channels of circulation. Due to overcrowding and saturation in the classical market, manufacturers across the board, new and old, big and small are finding their profit margins dwindling. Though established manufacturing groups in Kerala have diversified by investing in therapy, tourism and wellness segments, they have remained faithful to the classical market as far as medicines are concerned. Over the last decade they have found a way to reinvent their products using new technology without straying out of the traditional framework (Section 2.2). While old stakeholders manage to hold their ground by banking on traditional brand loyalty, some newcomers in the market try to make their mark by bringing in fancy products and product categories. Some capitalize on the expanded tourist and wellness services market (Section 2.3), some others on heavily marketed OTC products in controversial categories like aphrodisiacs and anti-obesity drugs (Section 2.4). The pre-cursor to this trend was the memory product market built around the reputation of the herb *brahmi* (Section 2.5).

Some of these changes have breached traditional ethos of ayurvedic medicine selling and have become hotly contested in Kerala today. Meanwhile, a range of new products have mushroomed in the vague boundaries between food and medicine, some of which threaten to break the boundaries of convention (Section 2.6). The biggest challenge comes from less visible transformations that might influence the content of the medicine, like the use of hydro-alcoholic extracts or modified extracts to enhance certain active ingredients. Though these are not significant trends as yet, manufacturers' desire to tap the global nutraceutical market could eventually subject them to external pressures on standardization (Section 2.6). With new stakeholders entering the ayurvedic market, ayurvedic medicinal herbs and ingredients are being dragged out of context to create newfangled products whose 'ayurvedicness' has become suspect (Section 2.7). Some of the traditional ayurvedic stakeholders feel compelled to meet new standards of evidence as they move to please the global consumer. Others are resentful of new hegemonies wherein ayurvedic physicians are often relegated to mute spectators.

9.1 Classical products in new avatars

In trying to break the barriers that classical products pose in terms of convenience of consumption and palatability, manufacturers in Kerala, bound as they were in the classical framework, found an innovative solution. The idea was to keep the products and their identities intact, and instead tinker with the forms. This began as a low-profile R&D activity in the early 2000s amidst much uncertainty. AVS found it important to inform its users of their efforts in this direction, assuring customers it will be done without corrupting the traditional product,

Recently, Arya Vaidya Sala has embarked on a venture of modernizing some of the conventional dosage forms by converting them into more user compliant forms. Example :

- *Bitter tasting liquid kashayam into the more convenient form of tablet.*
- *Incinerated bhasmam (mineral ash) into more reliable and accurate dosage form of capsule.*
- *Messy and greasy tailam into more convenient and less greasy form of gel.*

All these modifications are attempted only after confirming about retaining the original quality of the traditional medicines by conducting a series of formulation and clinical studies⁴⁷⁷

The products that started trickling into the market included:

- *Bhasmam capsules* - repackaging incinerated mineral ash in capsules
- *Churnam capsules* - repackaging of herbal powders in capsules
- *Gulikas as tablets* - conversion of hand-rolled pills into tablets
- Syrup forms of decoctions
- *Lehyam Granules* - conversion of lickable jams into granules
- Sugar-free and fat-free products
- *Kashayam Tablets* - formulation of decoctions into tablets
- Soft-gel capsules -repackaging of oils into soft-gel capsules



KAL's poster at an ayurvedic industrial expo

Manufacturers are 'required' to register the transformed product as a proprietary drug. So the classical product, not only gets converted in form, but also undergoes a change in terms of intellectual property ownership. The first three are limited to the simple and straightforward process of repackaging for convenient dose delivery and ease of use. The *syrup form* of juices and decoctions is less common and is used only for branded products. The *Lehyam granule* form is novel, but has entered the market without much fan fare. Granulators are used to turn the messy jam-like *Lehyams* into dry granules chewable or dissolvable in water/milk/honey. A popular product in this category is *Eladi*

⁴⁷⁷ Arya Vaidya Sala, e-brochure, [www. avs. com](http://www.avs.com).

Lehyam, the flag-ship proprietary product of Kandamkulathy Vaidyasala, one of

the earliest to be converted to the chewable granule form. But despite the obvious convenience, very few products are found in the granule form. Two products in this category were born out of an unlikely partnership between a public sector company Hindustan Latex Ltd. (HLL) and AVS, with the latter as the technology partner. *Lactohill*, a prescription galactagogue, is a flavored granular version of the classical *Stanyajananarasayanam*. *Chyavanule*, is a granule form of *Chyawanaprash*, recommended as an OTC tonic targeted to ‘the 30 plus in the corporate world.’ For AVS, which had no branded product until



Full page Chyavanule ad in a monthly

then, this is indeed a big unconventional step; an unsettling one for the classically oriented. So far Kerala manufacturers had by and large restrained from selling classical products as OTC, but lately they have begun to realize that “Ayurveda makes business sense” (see above image).

The use of capsule material and binders in pills are unacceptable to traditionalists who consider these ‘un-ayurvedic’ substances. More problematic however has been the use of sugar-substitutes and flavors. A central policy permitting the use of excipients⁴⁷⁸ issued in Oct. 2008⁴⁷⁹ paved a path for clearing legal hurdles for such usage, raising several other questions. The then Health Secretary of Ayush shot a letter to the Ayurvedic Pharmacopeia Committee raising concerns.⁴⁸⁰ There is much public concern about the new excipients (Jagdale 2009), especially problematic because the

⁴⁷⁸ excipient n. An inert substance used as a diluent or vehicle for a drug

⁴⁷⁹ In a notification dated 23/10/2008, the Union government amended the Drugs and Cosmetics Act 1940, to allow Ayurvedic and other traditional drug makers to use materials such as antioxidants, flavoring agents and sweeteners.

⁴⁸⁰ He said the notification had caused much confusion among the industry and the consumers. He raised special concern on the lack of clarity on permissible limits of artificial sweeteners, pointing out that in the US products containing saccharin were required to carry statutory warning. He pointed out that unlike Allopathic medicines, Ayush products are used long-term as health supplements, and recommended to make statutory warning mandatory for products meant to treat diabetes. Ayush Document. F.No. K.11020/1/2008-DC (AYUSH)

public is misled to believe that the products are classical (Rashid 2006, Varshney 2008).

With diabetes and hyperlipidemia becoming widespread in the population, there is a hesitation to consume medicines containing sugar and fat, especially *Lehyams*, i.e., medicinal jams with jaggery base, *Ghritams* made with ghee base, and fermented preparations that use jaggery as a catalyst for fermentation⁴⁸¹. The most common modifications are *sugar-free syrups* and *Lehyams* re-invented as *sugar-free* and *fat-free granules*, the less common being ghee-based preparations as fat-free granules.

Ayurvedic jam *Chyawanprash* is one of the products most subject to modification in the form of sugar-free and fat-free products, and in their rebirth as proprietary products, sometimes with changed names. For example, Dabur calls its sugar-free product as *Chyawanprakash*. More often than not, the name is maintained, with just the tag *sugar-free* added to it. The *Chyavanule* of HLL is promoted as fat-free, the tag 'No Ghee' figuring prominently on the product package (See above image). Himani's *Sona-chandi Chyawanprash* with gold, silver and saffron, aims at the uber rich. Oushadhi has gone a step ahead making chocolate flavored *Chyawanprash*. Some North Indian companies have evolved *Chyawanprash* into a category. Misappropriation of classical *Chyawanprash* recipes was one of the topics taken up for discussion at a meeting of Ayush's Technical Advisory Board in late 2007. The Drug Controller General of India declared that the use of prefixes like '*Chyawan*' suggesting links with classical ayurveda constituted misbranding (Varshney 2008).

Of all the form changes, the most glamorous are *kashayam-tablets* and *soft-gelatin capsules*. The latter enclose medicinal oils meant for internal consumption. The form per se is not new to Ayurveda;⁴⁸² what is new is its use in repackaging classical medicines. But given the cost of technology, prices are high; convenience remains a luxury commodity. Consequently demand is low and even large manufacturers like AVS have only five products in the category. As of now, it is more of a status symbol; for the first time it has given the large classical manufacturers with an exclusive status marker. The AVS brochure launching *soft-gel capsules* carries the slogan, "Modern technology in propagation of the science of heritage." Four virtues are listed: "Easy absorption, exact dose delivery,

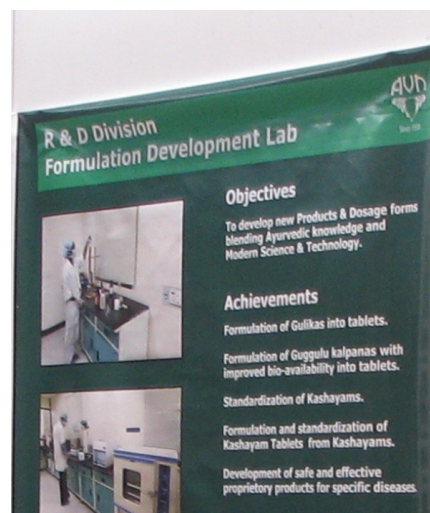
⁴⁸¹ This category is unlikely to be easily transformable unless jaggery is replaced by other substances as aid in fermentation.

⁴⁸² Dabur's *Pudinhara*, a soft gel capsule containing concentrated mint essence, has been in the market for long.

ensured efficacy and added convenience⁴⁸³”. The form has not called forth any objection from practitioners, perhaps because the process is not considered transformative. The same cannot be said of the decoction tablet, whose path has been riddled with controversy right from its inception.

9.2 Is the decoction tablet the same as the decoction?

Conversion of decoction into tablet has come almost exactly a century after it was first commodified and put on the shelf, a step that can be considered as the next important move in the commodification of the Kerala ayurvedic pharmacopeia. Though not as transformative and central, it is symbolic of new era transformations. Arya Vaidya Nilayam (AVN), one of the contenders who lays claim for introducing the decoction tablet in the market, proudly displays its achievements in the industrial exposition at Coimbatore in August 2008 (see image on the right). The owner MD of AVN, Dr. Ramesh R. Varier is upset that they do not get the prime mover advantage, because others quickly moved into the segment that he had created with much effort. “We do not get to reap the benefit of the investment we put in the technology and its promotion. Our investment in publicizing the new product has become advantageous to others. There has to be some way to protect intellectual property exclusivity, at least for a while”. The problem, however, is that processes like these are too obvious for anyone to claim exclusivity.



AVN poster at industrial exposition, Coimbatore lists decoction tablet among its achievements

The initial growth of the product segment was slow, as manufacturers struggled to rationalize the process. As for the technology, it is a simple process of spray-drying the traditional liquid decoction, removing the moisture content and converting the solid residue into a pill. But there were many pain points to handle, and each manufacturer had to perfect the technology on their own.⁴⁸⁴ For those who cracked it early, it was a matter of pride to declare technological superiority over others. By

⁴⁸³ Arya Vaidya Sala, promotional leaflet, n.d.

⁴⁸⁴ The modern tablet form demands more binders, making it difficult to handle dosage apportioning. Dehydrated herbal material is not readily amenable to pill form. Biomedical and homeopathic pills do not have to accommodate biomass.

the end of the first decade of the new millennium, the trend had got firmly established; most large and medium manufacturers had arrived at their own methods of making the product .

However, reception from the Kerala market has been lukewarm. The forms per se were not new, but identities of classical products are inseparable from their forms. Though most proprietary products are produced in non-conventional forms, there is no room for conflict as they lack standards for comparison. But in the case of classical medicines, the consumer is caught between a conventional product with established credibility and a modified form of dubious quality.

The decoction tablet met with considerable resistance from ayurvedic practitioners in Kerala. One argument was that ‘taste’ has a pharmacological action and therefore the purpose is defeated when the pill is swallowed or when it is rendered taste-neutral (for example, Vasudevan 2003). Another concern was that manufacturers were following diverse ways of fixing dosage causing confusion among the users (for example, Manoj 2010a). Further, there was no guarantee that all were following the right production process. Head, R&D of a large ayurvedic manufacturing company was apprehensive that less scrupulous manufacturers who did not have access to the right technology would end up using finely powdered ingredients without putting them through the water extraction process. According to

ayurvedic pharmacological logic, the differentiation between powders, pills and decoctions is there for a reason. The basic logic of the decoction is to extract plant chemicals by boiling raw drug ingredients in water; volatile material is allowed to evaporate during the open boiling. After passing the liquid decoction through a sieve, the residual bio-matter is disposed of. The right process of making the decoction tablet would be to derive the decoction from this traditional process, and then subject the liquid decoction to spray

drying. The difference between the decoction and tablet, is therefore nothing but the presence and absence of moisture content. But if a manufacturer were to skip the process of water extraction, and

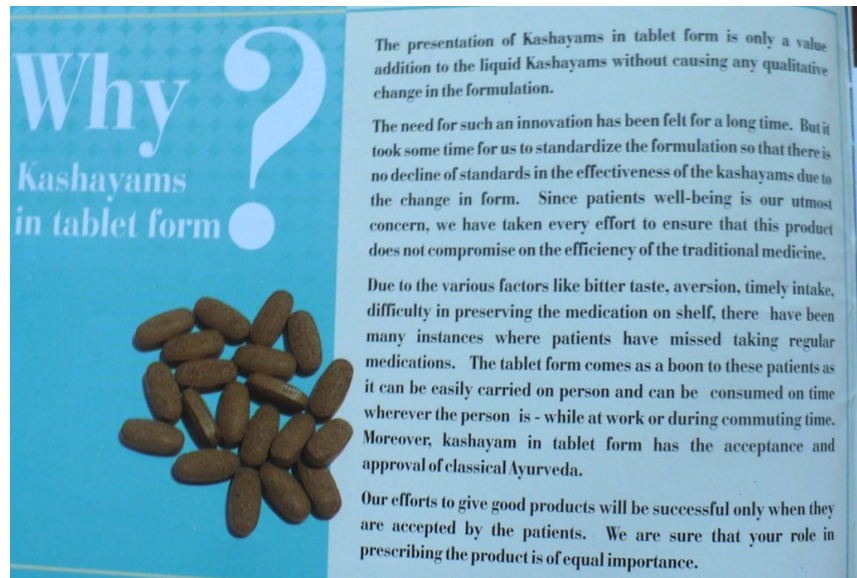


Kashayam Tablets and Softgel Capsules displayed at the AVS stall, Arogya Expo Thrissur, 2009

instead micro-pulverize the material and convert it into tablets, the end product would not be the same.

Most manufacturers are defensive. They do not claim it to be the best form; for reasons known and unknown classical forms are considered indisputably the best. They point out that the decoction tablet is essentially a spray dried form of liquid decoction and there should be no logical reason for substantial difference.

Assistant Manager, R&D of a large manufacturer says “It is an inevitable compromise”. The production manager of another manufacturer says, “Of the *pancha kashaya*



AVP Booklet: Justification for Kashaya tablets

kalpanas (five forms of decoction), *kashayam* itself is the worst form, but we depend on it because the rest are not saleable. This is just one more compromise...though it may be less efficacious it is still better to replace a less palatable form rather than lose customers.” This sentiment is repeated by manufacturer after manufacturer. A respondent from the R&D department at AVS says they are helpless because the younger generation which is used to palatable biomedicine refuses to consume bitter decoctions. Gesturing the hand in resignation, he said, “If we are not quick enough to respond to this attitude change, customers would move to better tasting medicines”. This is no exaggeration. I had occasionally come across practitioners asking their patients⁴⁸⁵ whether they are willing to consume decoctions, quite often meeting with resistance. In one such interaction, the patient, a girl in her early 20s had come in with her mother. After the consultation was over, the doctor told asked her, “The problem will be resolved with this medicine, but are you ready to drink *kashayam*?” The girl refused point blank, forcing the doctor to find an alternative. After she left, the doctor told me ruefully,

⁴⁸⁵ This would happen only with new patients, especially the younger generation.

The Vaidyans of earlier times were fortunate - patients would cherish every drop of advice they gave, followed whatever they were told to, whether it is taking a bitter decoction or following a strict diet regimen. But these days you have to ask the patients and make sure that you give what they like. Otherwise, they won't come back or they will not take the medicines properly. Then they will return with the same complaint or a more complicated complaint.

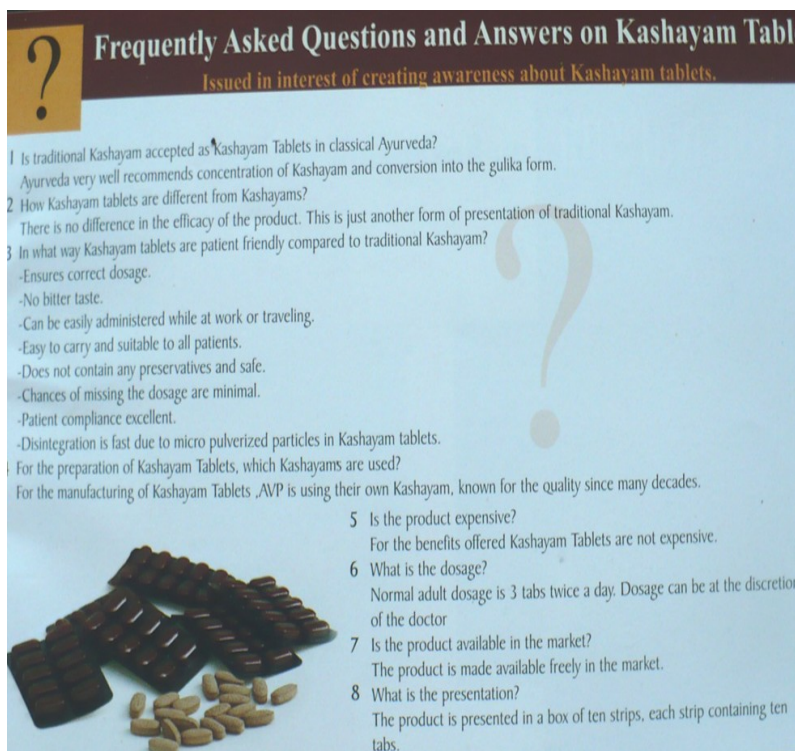
Such patients, manufacturers complain, have increased in number. Ayurvedic doctors have to be sensitive to patient compliance. Only a few patients like Mamatha refuse without hesitation, most feel awkward to express their preference. Doctors take care not to prescribe medicines that patients are unlikely to take. Diet regimen

(*Pathya*) is an important aspect of Ayurveda that doctors have had to make significant compromise. By being rigid, they are afraid they might lose them to other systems of medicine⁴⁸⁶. In one amusing episode

I witnessed during an interview, the doctor was busy on the phone and his secretarial assistant was casually chatting with the patient. The patient was an obese Muslim lady who wanted to lose weight. The assistant identified her

consumption of non-vegetarian *biryani*⁴⁸⁷ as a problem and strictly advised her against eating such food. The doctor who overheard this gently chided her with a smile, "Are you planning to chase away my patients?" and went on to reassure the patient not to worry about diet restrictions.

To counter the resistance, manufacturers are going out of their way to educate consumers (mainly ayurvedic practitioners) of the efficacy of the new decoction tablet. For example, the AVP



AVP Booklet: FAQ on Kashayam Tablets

⁴⁸⁶In biomedicine, one just has to swallow the pills whereas homeopathic pills that constitute negligible amount of medicine mixed in sugar pellets are so palatable that they need to be kept at a safe distance from children.

⁴⁸⁷ Because of its Persian origins, *Biryani* (a fried rice preparation with mutton/chicken) is a regular food among the Muslim communities in Kerala.

booklet on *kashayam* tablets explains the rationale of the new form, and also provides an FAQ to answer potential questions from practitioners emphasizing on its equivalence to the classical decoction (See images above). One common argument in favor of the decoction tablet is that it does away with the need for using preservatives, and is therefore superior to the industrially produced decoction. There are no prescribed standards and uniformity in preservative use. Large manufacturers by and large use 10 ml. of Sodium Benzoate in 200 ml. decoction. But extreme kinds of practices are reported. On the one hand, manufacturers of dubious reputation allegedly used liberal quantities of preservatives to prolong shelf-life. On the other, practitioner-manufacturers worried about the safety and efficacy use less preservatives. Manoj (2010b) points out that while as per US regulations, the permissible rate was 0.1%, many were found to be using 0.5%.

Controversy over new forms in Kerala was loud enough to catch the attention of the media (for example, Nambudiri 2002, Hindu 2002).

New dosage forms are further crippling ayurveda. We are losing the very basic concept of health and healing. Since one is not ready to prepare *kashayam* with the *angadi marunnu* or the *pari Marunnu* (raw drugs) prescribed, you can buy readymade *kashayams*. When you buy 200 ml of *kashayam*, you are buying 190 ml of *kashayam* and almost 10 ml of sodium benzoate...We accepted that compromise, almost from the time ayurveda got bottled by the industry. Now the pharmaceutical companies have come up with newer dosage forms and you get tablets, capsules and even ayurveda injections. *Kashayams* are available in tablet forms. *Choorname*s are available in the tablet form. They will definitely work. The capsule will disintegrate inside the stomach. But you will never get the effect of the same old *kalpana* or the traditional processing techniques like *kashayam*, *churnam*, *ghritam* etc. (Hindu 2002)

Surprisingly, the above critique quoted in a newspaper report does not come from a conservative traditional vaidyan, but from an ayurvedic doctor employed by one of the largest manufacturers of Kerala Ayurvedic products. However, Dr. P. K. Warriar, the chief-physician and MD of AVS states, “Classical formulations have internal strengths which allow them to be converted into more convenient modern forms like tablets, capsules, gels, syrups, etc.” (Warriar 2006:30). This statement has to be taken special note of, as it comes from one of the most respected ayurvedic scholars in Kerala, and from a manufacturer rooted in the classical tradition. AVS has always been the trend-setter in the market; no manufacturer changes prices unless AVS does. The fact that AVS and other large traditional groups like Vaidyaratnam and AVP have embraced the technology with open arms implies that it is a trend that has come to stay. It is likely to eventually get rooted and the controversy forgotten, just as

it happened with the commodification of decoction a century ago. However, this does not mean that it does not meet with resistance from practitioners. Though it is a century since the bottled decoction is in the market, there are consumers who are still ready to make decoctions at home.

Despite all the publicity and hype, in the Kerala market, the new forms still remain on the fringe. The expensiveness of the products coupled with the conservativeness of both practitioners and consumers make their market penetration slow. So conservative is the ayurvedic market in Kerala that even minor modifications becomes a matter worthy of discussion. Take for instance, the use of PET bottles instead of glass bottles for packaging - a transformation that began in the late 90s had become an established trend by the end of the decade⁴⁸⁸. Today it is difficult to find a manufacturer who does not sell medicines in PET bottles. As a consumer, I remember choosing one brand over the other just because a particular medicine was available in a plastic bottle. Such consumer preference that went up with increasing mobility of work force⁴⁸⁹ would have forced manufacturers to make the switch, besides the fact that it also worked convenient for them to transport and ship their products. I had little suspected that it could still have strong detractors until I overheard an conversation at the clinic-pharmacy of Vaidyamadham at Palakkad, a clinic-pharmacy run by an *Ashtavaidyan* family. A Malayali customer, a Bombay resident, was visibly taken aback when he learnt that medicines would be shipped only in plastic bottles. The cashier at the counter explained that sending medicine in glass bottles through postal service was a tricky affair, but the customer grumbled on and on about the safety and efficacy of medicine in a 'plastic' bottle. It was indeed ironical to find a 'purist' establishment that had taken measured steps in adapting to the demands of the market, in an apologetic modernist position vis-à-vis a conservative consumer.

Though during the period of my field work, I had heard such occasional murmurs of disapproval from various quarters including patients, doctors and sellers, I had no expectation that it would be anything more than a inconsequential minority position that would soon fade away. But recently, one of the largest companies announced its decision to revert to glass bottles, citing their own experimental finding that fermented medicines packed in pet bottles undergo qualitative changes.

⁴⁸⁸ This paralleled the trend in the food product market, for example, semi-solid products like pickles and ghee. Initially, it was not considered a cost-effective proposition - pet bottles were more expensive and were not recyclable.

⁴⁸⁹This was particularly true for Kerala, which is known for its highly mobile workforce.

They pointed out that “though it works better from a business perspective, they were doing this keeping in mind “Ayurveda’s *unnathi* (progress)”, requesting consumers for forbearance (Nagarjuna 2012). Given this milieu, it would have been indeed surprising if a change in form or content of classical medicine is welcomed without dissent. The market outside Kerala is more receptive. Two manufacturers who were in the process of expanding their reach outside Kerala reported that they were getting more orders from outside the State, especially from Karnataka and Maharashtra. Non-Malayalees are unaccustomed to consuming bitter decoctions (See *Michael’s* story, end of Section 3.1). With increasing number of them seeking Kerala Ayurveda, moves like this might be in the interest of not only the industry, but in the long run, the survival of the bitter decoction itself. The R&D Managing Assistant of one ayurvedic manufacturing company said, “What is the use of principles if we can’t attract customers? Instead of losing them to biomedicine, it is better we at least compromise a bit to keep them”.

9.3 Products capitalizing on the service market

Ayurvedic services are almost never free of medicine commodities, and consequently, when services are commodified, medicines automatically get a free vehicle to ride on. When the context and format of services change, medicines also undergo some amount of transformation to suit the new context and requirements of new consumers. In Panchakarma centers in tourist regions, therapy requirements for medicines are being met in three common ways:

1. Complex medicines are bought from established manufacturers.
2. Medicinal material required for certain procedures are almost always prepared in-house, quite often freshly made for the procedure and
3. Oils required in large quantities are made in-house or bought at a bulk price from small manufacturers or household level producers.

Each category has a different connection to the ayurvedic commodity chain in Kerala. The first draws from the old commodity chain; the second is most often made in-house. The third category, the most visible in the market, consists of an array of new commodities geared towards tourist and wellness consumption. For example, the independent center that *Brian* visited (see Section 8.3) took recourse to all three methods. They bought complex medicinal oils like *Dhanwantaram* oil from

Vaidyaratnam, a large manufacturer. For procedures like *Njavara Kizhi* and *Ela Kizhi* they prepared the medicines in-house. They sourced the third category of products from a one-man establishment, who hailed from a family with a traditional martial art tradition. He made the oils at home and supplied to most of the hotels and resorts in the backwater tourist region of Kumarakom.

The third category of commodities is also connected to exclusive export channels that are linked to the international ayurvedic spa market. These have a distinct advantage over medicine commodities; unlike internal medicines they do not face a regulatory barrier. Over and above this, they can easily pretend to be cosmetics, an issue that bothers ayurvedic practitioners abroad as damaging to Ayurveda's identity as a serious medical system (see Section 8.7.2).

9.3.1 Ayurveda: Degreased and Deodorized

A new commodity segment that has evolved to meet the demand for tourist and wellness Ayurveda is 'Ayurvedic Massage Oil' or simply 'Massage oil'; a category that was almost absent till 90s, but now as ubiquitous as the ayurvedic hair oil. The manufacturers of this commodity are a medley, ranging from small women's self-help groups to multinational FMCG manufacturers, from street side vendors to reputed Ayurveda manufacturers. The doctor at a certified ayurvedic center said they use specific oils tailored to the procedure and patient's condition, but not generic massage oils. The initial response to the market was either from unheard of small local companies that had little to care about their reputation or from companies without ayurvedic identity. Such products are commonly found in tourist regions in gift shops, perfume and cosmetic shops. The image on the right shows "ayurvedic massage oil" listed in a list of aromatic oils, on a board displayed in front of a perfume showroom in a tourist region of Kumarakom. The product capitalized on the global popularity of herbs like turmeric and neem.



Ayurvedic Massage Oil in the list of aromatic oils

One of the few Kerala origin tourist focused range of products visible in the Ayurvedic industrial exposition in mid-2008 was *Svaztha* (stylized form of *Svastha*, i.e. wellness). The manufacturer, Chempenkulam Ayurveda Pharma, does not confirm to common sense expectations. It is

run by Dr. C. A. Gopi, a doctor-manufacturer whose low-key establishment is tucked between the spice shops in the Thekkadi hill station. Though his grandfather's *vaidyashala* was upgraded to a modernized production unit in the 60s, the current production is meant to serve clinical use, restricted to around 250 commonly required medicines. His clinic and small health center are not upgraded to cater to the tourist industry, nor are there any signs of significant departure from routine clinical practice. When asked, he said, "My focus mainly revolves around therapy. I have a small inpatient facility that I hope to expand." By all measures, it was difficult to imagine such an unconventional and market-savvy idea floating out of such a low profile, therapy-centric establishment. Being located at the heart of Kerala's hill resorts bombarded with tourist flurry, the doctor must have found the opportunity irresistible. The product range is tastefully designed and creatively branded. The brochure of *Svaztha* states,

Medicines are prepared in the traditional and special metal vessel made of '*panchaloha*' *patra* (made of five metals - gold, silver, copper, iron, and brass). Only prescribed types of fire woods are used. Organic sesame is bought directly from the farmers, and the oil is extracted in wooden grinders - as it was in olden days. The herbs are collected from own garden and from the heart of Periyar Tiger Reserve Forest by the tribal people⁴⁹⁰.

Unlike the modern ayurvedic product, here the emphasis is not on technology and modernity, but on tradition and uniqueness. This attempt to enclave a mass commodity from its de-identified mass status (Appadurai 1986), is an apt illustration of the emphasis of the tourist induced service market on tradition. However, in the same breath, *Svaztha* massage oils claim to be "stain less and non-greasy", giving a small concession to the Westerners' aversion to the greasiness and smelliness of ayurvedic oils. *Svaztha* remained low key, not surprising, given the background of the manufacturer. But the trend of de-greasing and de-odorizing the massage oils was fast spreading in the tourist market. In 2010 industrial exposition in Kochi, Sahyadri showcased a new range of degreased and scented massage oils packed in swanky aluminium bottles. They innovated new commodity categories: *Relax Soft* (Children Massage Oil), *Relax Smooth* (Ladies Massage Oil), and *Relax Strong* (Gents Massage Oil). Ayurvedic commodities are now beginning to be subjected to gender differentiation, a common technique used to differentiate commodities in the consumer market.

Interestingly, just as traditional manufacturers have begun to enter the tourist market, there is a reverse trend of tourist stakeholders entering the manufacturing market. Some tourist groups who

⁴⁹⁰ Chempenkulam Ayurveda Pharma, Kottayam, promotional leaflet, n.d.

were typically rebranding bulk purchased products for in-house use, started rolling out their own brands of medicines aiming at the tourist and export market. Their product ideas are inspired by their face to face experience with western tourists. In the Feb. 2012 industrial exposition in Trivandrum, I was taken aback to find a new range of products by Kairali Resorts, branded ‘traditional’ depicted by a picture showing a surgical procedure in ancient India (*see image below*). The same old classical products were being re-invented, not as *modern* but as *traditional* products⁴⁹¹. It would be indeed ironical if tourist induced demand creates a parallel channel for the re-emergence of classical products, albeit couched in stylish post-modern avatars.

An old manufacturer attempting to follow the celebrity endorsement technique of selling an OTC product, takes the opportunity to educate the audience on “*what is real Ayurveda*”. Sitaram Ayurveda Pharmacy is desperate to differentiate his tradition-based product, a branded hair oil, from the new and “unauthentic” OTCs. The advertisement for the product appeared in a popular Malayalam daily entitled “*Does it mean that it when it comes to hair products anything can be experimented with?*” It points out that modern problems like pollution and life style contribute to hair loss and other problems, forcing people to look for solutions. The consumer is asked, “*But can you close your eyes and believe in any product that claims itself to be ayurvedic?*” and told, “*This is where the relevance of Real Ayurveda comes in,*” and further challenged, “*How do you recognize real*⁴⁹² *Ayurveda*”. Three ways of identification are provided.

Textual base: Which text is the formula based on? For example, Narasimham Oil is based on Vagbhata’s Ashtanga Hridayam.

Tradition: the background of the manufacturer. Like for example, Sitaram Pharmacy is 89 years old.

Color and Smell: Avoid using oils that have an agreeable fragrance or which is totally transparent. Such oils are either purified or made by adding artificial fragrances (Malayala Manorama 2010).



Classical medicines recast as ‘traditional’ Products displayed at Kairali Stall, Arogya Industrial Expo, Thrissur 2009

⁴⁹¹ The term ‘traditional’ used by some researchers (for example, Bode 2008) is not a term in use in the domestic market.

⁴⁹² Though the advertisement in Malayalam, English word ‘real’ is used. Compared to other South Indian languages, Malayalam liberally uses English words with or without some transformation, without struggling to look for substitutes.

In other words, the disagreeable smell of ayurvedic oils becomes a marker for authenticity, debunking “degreased and deodorized Ayurveda” as unauthentic.

9.3.2 Wellness Commodities: Dosha-shopping

Ayurvedic massage oils are not the only products that have emerged in this market. At the next level are up-market products by FMCG manufactures and cosmetic manufacturers aimed at the Western or the Indian elite audience. Numerous wellness products and cosmetic products have sprung up, riding on the wellness bandwagon. Among the fore-runners in this segment were a range of cosmetics and health care products along with the wellness chain of “Lever Ayush Therapy Centers” Targeted at the modern health-conscious elite customer, the kind of clientele expected to access wellness treatment, this range includes rejuvenatives, cosmetics like hair oil and cream, and a few OTC products. The names are strange and comic sounding combinations of Sanskrit/Hindi and English, perhaps meant to keep it authentic and understandable for the cosmopolitan Indian. Example, *Ayush Hair Poshak Oil*, *poshak* means supportive, *Ayush Headache Nashak Roll-on*, *nashak* means destructive. They claim that their products, ‘bring authentic wisdom from AVP’, meet ‘international Unilever Standards for safety and quality.’ ‘the goodness of Ayurveda in “pleasant or tasty and convenient-to-use formats⁴⁹³’.

Targeting Western tourists has also geared Kerala manufactures to address the export market, however miniscule. So far exports are limited to 10% of the total turnover of finished ayurvedic medicine in India; for Kerala companies it is an insignificant 1-2%. Very few manufactures from Kerala have exports worth mention. Traditional manufacturers like AVS are uninterested; interested groups like the AVP with its high-cost WHO complaint GMP factory are still struggling with regulatory barriers. Even selling to countries in the Indian subcontinent like Sri Lanka, Pakistan and Bangladesh continues to be a struggle⁴⁹⁴. This being the case, most of the product movement happens through private unorganized channels, that is, to individual customers or through therapy centers and joint ventures in a few locations⁴⁹⁵. To mention some of the illustrious ones, AVP has three centers in Malaysia; SNA which trains biomedical doctors in Italy through its tie-up with Ayurveda Point has a steady market

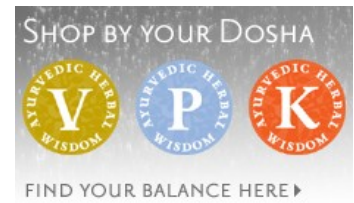
⁴⁹³ Hindustan Unilever Limited. Press Release, 03-06-2002.

⁴⁹⁴ Ayurvedic Manufacturers’ Business meet to discuss draft proposal for trade with SAARC countries, Feb. 14, 2012.

⁴⁹⁵ Manufacturers like to brag of their presence in several countries, are unsurprisingly unenthusiastic about sharing details about these non-glamorous low-end channels.

base in its alumni; Vaidyaratnam and a few other companies have agencies run by Keralite doctors practicing in the Middle East; Nagarjuna has a substantial clientele in Russia; KAL following its acquisition by the US based Katra Health Care has access to customers in US through their three Kerala Ayurveda clinics.

Over the last two decades, ayurvedic manufacturers in Kerala have learnt that addressing the western market is a different ball game. In this market, one has to fit products in categories that Western customers are most familiar with, the most salient being the *dosha* typologies. In the conventional ayurvedic framework, discerning *doshas* is a vaidyan's job, a complex activity that is sometime subconscious, sometimes deemphasized, sometimes ignored. But for a few typologies that are common knowledge⁴⁹⁶, it is rare to hear doctors or patients discuss constitutional *dosha* typologies. But western consumers are known to be preoccupied with *dosha* typologies. Some online sellers have even designed the hilarious-sounding purchase option, "Shop by Dosha".



**Classical oils classified by Dosha:
displayed at Desheeya
Pharmacy's stall, Bengaluru 2010**

Companies like Maharishi Ayurveda which produced its own version of Ayurveda in the 80s have been making commodities tuned to the western market that sound remotely ayurvedic to an Indian ear. But now this trend has become widespread. Many traditional manufacturers now sell non-traditional products named after *Dosha* types, *Vata/Pitta/Kapha Massage Oils* (see image on the left).

Kerala Ayurveda Pharmacy also makes *dosha* typology oils but with the suffix *tailam*, the Sanskrit term for oil. Some of the more market-savvy manufacturers carry a descriptive subtitle proclaiming *Ayurvedic Massage Oil* along with the classical name, making it consumer-friendly without compromising on their classical identities.

⁴⁹⁶ E.g., certain complaints are commonly referred by typology, arthritis as *Vata* complaint or acidity as *Pitta* complaint.

9.3.3 Medicines integrated with therapy: *Njavara Kizhi*

Among the images most commonly used to advertize ayurvedic therapies in the tourist and wellness market, the most popular are that of *Shirodhara*, of oil pouring on a carved earthen vessel on the forehead of a male/female lying down on an aesthetically carved wooden massage table. The next in popularity is the image of two masseurs in action, rubbing the boluses over a half-clothed supine body, commonly female, which most often than not is visibly blonde. The generic name of the bolus massage is *Kizhi*, a Malayalam term equivalent to the Sanskrit term *Pinda Sweda*. One popular variant of this procedure, considered a contribution of Kerala, is *Njavara Kizhi*, i.e., rice-bolus massage.



Shirodhara table with a poster behind in the background, Industrial Exposition, Trivandrum 2012

Once a merely therapeutic ayurvedic procedure in Kerala, *Njavara Kizhi* has now acquired a new fame in the tourist and wellness commodity chain. Perhaps its exoticness is what makes it a popular item on tourist menus and therapy packages.

Njavara, a variety of medicinal rice, is perhaps the only medicinal plant whose trajectory has been influenced by the new commodification centered around tourism. An important chapter in the life of *njavara* opened in November, 2007, when Kerala was awarded geographical indication for the rice variety⁴⁹⁷. *Njavara* is part of the species of *Oriza sativa*, but distinct from the other rice varieties in many ways. Ayurvedic classics describe the medicinal properties of a rice strain called *Sashtika*, i.e., ‘60 days’ referring to its short maturity period. Though it represents a composite of varietal types, its gene pool is distinct from that of other rice varieties, conjectured to represent an ancient unadulterated gene pool (Sreejayan et al 2005). There are two varieties of *njavara*, the black glume and golden glume, the former drought-resistant and the latter susceptible to drought. While physicians in North Kerala prefer the former, those in South Kerala prefer the latter. Within each variety, there

⁴⁹⁷ This had become possible because of the historical exclusivity of Kerala in the production of this rice variety.

are two sub-types, one with awn and one without. (See Appendix F for its ayurvedic pharmacological properties). External application of *njavara* is commonly prescribed in the treatment of neurological disorders, arthritis and emaciation of limbs. The porridge of *njavara* grains in milk is prescribed as special food for invalids and infants. It is also part of the seasonal medicinal rice (*Karkidaka Kanji*) consumption routine. There are two procedures of application, one is *Njavara Theppu*, which involves application of a paste of *njavara* cooked in milk all over the body. Second, and the most popular is *Njavara Kizhi*, which is rubbing of boluses filled with *njavara* paste infused with *kurunthoti* decoction and dipped in milk. The procedure relies on only two medicinal ingredients, both of which happen to be index plants. The procedure is expected to soften the body, make the joints supple, increase hunger, alleviate lethargy, improve circulation and sleep.⁴⁹⁸

Given the nature of medicament used in such procedures, it is common for doctors/therapy centers to have them prepared in-house. For example, for *ElaKizhi* (leaf bolus massage), seven different leaves are required, all in fresh form.⁴⁹⁹ The manager at *Brian's* center said that all of these except *karinochi* were herbs/shrubs available from the commons and were plucked by their assistants, whenever required. As there was no other way of getting *karinochi*, they had cultivated the tree in their small yard. The fast growing tree had already grown to a height of 10 ft; its delicate bluish leaves reflecting the sunlight, made a pretty sight.

9.3.4 The Panchakarma range

Among the slew of new commodities in the market, one category stands apart - novel and strictly traditional at the same time. In mid 2000s, a small company called Ayu:care hit upon a new niche, an innovative idea of marketing therapy-based products for the outside Kerala market. They called it *the Panchakarma Range*, exclusively targeting the therapy market with 15-20 products, mostly classical ayurvedic oils and powders and a few proprietary massage oils. The founder, an ayurvedic practitioner who started his career with a small 15-bedded hospital, began manufacturing medicines to meet inhouse needs. As the popularity of Panchakarma spread across India, he identified

⁴⁹⁸ A full body procedure requires 600 gms of rice, 500 gms of *Kurunthoti* root, 2 liters of milk and 8 liters of water.

⁴⁹⁹ *Karinochi* (*vitex negundo*), *avanakk*, (Castor, *Ricnis communis*), *datura* (*Datura ummam*), *erikku* (*Calotropis gigantea*), *tamarind* (*Tamarindus officinalis*), *muringa* (drumstick, *Moringa olifera*) and *karanja* (*Pongamia pinnata*).

a potential for therapy commodities to circulate in the same channel. But it remains a low-profile segment, their own market restricted to a few hundred doctors outside Kerala as reported by their marketing manager.

9.3.5 Do-it-yourself Ayurveda

Not satisfied with the Panchakarma therapy products, in 2010, Ayu:care introduced a new product, again therapy based, but a step ahead of all other commodities. *Ayu:care Kizhi* converts a clinical procedure performed by a skilled therapist, including the medicament prepared in-house into a “do-it-yourself-kit”. The product leaflet says, “*Ayu:care KIZHI is most advanced and scientifically designed for conducting ayurvedic swedana treatment (medicated fomentation therapy)*⁵⁰⁰”.



Traditional Kizhi



Do-it-yourself Kizhi Kit

Source: Ayu:Care e-brochure

There is much disquiet in the ayurvedic community about this development. A serious therapy procedure has been taken out of its context, simplified and converted into an off the shelf commodity. The product, coming soon after the company’s foray into the controversial anti-obesity oil (see Section 9.4), had rubbed salt on an already festering wound. In June 2011, ayurvedic practitioners represented by AMAI complained to the Ayurvedic Drugs Controller requesting immediate action against the sale of such “fake products”. The General Secretary of AMAI complained that “the manufacturers of *Ayur Kizhi* is giving wide publicity for this product violating laws and its formulation processes are against the principles of Ayurveda.” In April 2012, after the company refused to reply to repeated memos, the

⁵⁰⁰ Ayu:care, promotional leaflet, n.d. Also e-brochure at <http://www.ayucareayurveda.com/home/kizhi>

Kerala Drugs Control Department raided the manufacturing unit and confiscated the products for violation of DCA and DMR⁵⁰¹ (DR 2011).

9.3.6 Non-medicine commodities riding on service

The service market also created an equipment niche that brought its own specialized stakeholders. These are mainly wooden massage tables, boxes for steam bath and other Panchakarma equipments. The material ranged from specific wood recommended in the classics like *venga* to material suited for modern convenience like FRP. Such equipment from Kerala are also finding a lucrative export market in Europe. There are many companies that now specialize in manufacturing Panchakarma equipment, some of which have grown very big. For example, Esteem Services, a Thrissur-based company established in 1999 has grown to a million dollar's turnover specializing in Panchakarma equipment. A few ayurvedic manufactures like AVP also entered the market to supply equipment. There are also emerging modern versions of these equipments, like the automatic Shirodhara unit, that was demonstrated at the Ayurveda industrial exposition, October 2008.



An equipment manufacturer's Stall, Arogya Industrial Expo, Thrissur, 2009



*Traditional Shirodhara Unit
Arogya Expo, Thrissur, 2009*



*Automatic Shirodhara Unit: Demonstration
Arogya Expo, Thrissur, 2009*

⁵⁰¹ DCA: Drug and Cosmetics Act 1940, DMR: Drug and Magic Remedies Act 1958. The Department had given licenses for 'Ayur Kizhi Oil' and 'Ayur Kizhi Powder', but no license has been given exclusively for the single product 'Ayur Kizhi kit'.

A commodity unrelated to Panchakarma that has got a new lease of life is “Ayurvastra” is, “Ayurvedic Textiles,” fabric dyed in medicinal herbs meant to have therapeutic effect. A specialist weaver family group in Trivandrum that supplied these clothes to the erstwhile royalty has now found a lucrative export market, especially in Japan, Italy and France. The group is also now marketing “Ayurvedic Houses” aiming at a niche domestic luxury market. The use of the brand by unconnected business groups irks Ravindran, a weaver from the original family of weavers, but he is least concerned about intellectual property protection. He is confident that nobody else would be able to decode the family secret of ayurvedic dyeing technique (which is free of chemical mordants).

The other increasingly popular new commodity is ayurvedic diagnostic software. The first in this category was Ayur-soft launched in 2006 by Pune-based Centre for Development of Advanced Computing (CDAC), a R&D Institute under the Ministry of IT. It was announced as “a vision of converting classical ayurvedic texts into comprehensive, authentic, intelligent and interactive knowledge repositories with complex analytical tools⁵⁰²”. The organization was approached by the NIH of US and L’Oreal for customization (Bhuyan 2006). In 2008, AVP launched RUDRA (Random Uninterrupted Documentation for Retrospective Analysis) to examine patients and document the proof of medical examination and consultation. The system was expected to act as a 'third eye' that monitors doctors while they check patients (Nampoothiry 2008).

9.4 New and controversial OTC segments

The last half of the decade saw a rising trend in big-budget OTC products in the Kerala Ayurveda market. The sound bites created by this segment can be misleading. In reality, there are only a small number of companies⁵⁰³, whose name and fame are constructed around one or two heavily advertised OTC products. There is much disquiet about this development among the ayurvedic community and also among the general public. Dr. T. Sivadasan, the Kerala Ayurvedic Drugs Controller pointed out that the Department is helpless because the law is toothless. Some practitioners point out that the problem is not with laws, but lack of political will. They point out that the money flowing into

⁵⁰² The full desktop package was priced at ₹ 12,350 (\$247), the multi-user intranet version was priced at RS 50,000 (\$1000).

⁵⁰³ Agnivesh (2011) finds half of the full page ayurvedic advertisements in a woman’s bi-monthly belonged to just two companies.

the media, especially television in Kerala, is too big and they attribute this to be the reason for State inaction.⁵⁰⁴

Aggressive advertisement based selling was until recently limited to a few OTC products - mainly cosmetics like ayurvedic hair oils and soaps, and a few nutraceuticals (for example, memory products). None of these products made therapeutic claims. Low profile products claiming miraculous cure circulated in local spaces, either through street vendors or advertized on small shoddy bills stuck on public walls, like bus stands and rest rooms. More often that not, these addressed stigma-bearing illnesses like STDs and hemorrhoids. The scenario has changed in the past half a decade. While some of the new products like hair oils and soaps are innocuous and legitimately OTC, those that have raised concern are prescription-products that are dragged into the OTC realm, boosted with exaggerated and unsubstantiated health claims. The products tend to be astronomically priced, often promoted through celebrity endorsement and aggressive pricing strategy that allows for high commission to sellers at all levels. Agnivesh (2011:88), on analyzing advertisements in a woman's magazine comments "it would appear that the second priority of a Malayali after wearing clothes is using Ayurvedic concoctions". Besides the fact that they clearly violate the stipulations of the Drugs and Magic Remedies Act 1958, a common concern is regarding the style and language of the advertisements that often resemble the street medicine vendors' sales pitch⁵⁰⁵, threatening the respectability of 'serious Ayurveda'. Unlike rest of the country where the industry seemed to have had an upper hand in meaning making, in Kerala, practitioners are strident in questioning the industry's ways. The critics are loud enough to catch the attention of various media (for example, Hindu 2002,



⁵⁰⁴ Incidentally, all large political parties of the State have a direct or indirect stake in Malayalam television channels. *Kairali*: Marxist party, *Amrita*: BJP, *India Vision*: Muslim League, and *Jai Hind*: Congress party.

⁵⁰⁵ In Malayalam movies, it is very common to see the portrayal of quack street vendors who go street selling a medicine or two extolling its virtues to cure any and every health problem.

Nampoothiry 2008).

Of the segments, three are most visible: aphrodisiacs, anti-obesity products and cosmetics, of which the first two have been the most controversial. Cosmetics too have been controversial, but for a different reason. Some of the classical ayurvedic medicine manufacturers feel selling soap should not be a priority for a serious ayurvedic company. They feel that the cosmetic overkill is lightening the gravity of Ayurveda in public eyes. Ayurvedic soaps emerged as a hot category only in the past decade. Previously, there were two companies that specialized in ayurvedic soap making and had minted millions with a single product each. Of these Chandrika, a bath soap with 7 essential oils was the brainchild of a traditional vaidyan from Kerala, was launched in 1940. The other ayurvedic bath soap with 18 herbs, Medimix, a Kerala based company from Chennai, was launched in 1969 by an ayurvedic doctor, also from a vaidyan family. These were made and marketed at a time when it was not fashionable to sell ayurvedic soap. The market of these two soaps was limited to South India, mainly Kerala. Since 2000s, there has been a boom in the ayurvedic soap market, with several larger cosmetic groups entering the market. Chandrika had achieved a brand value of ₹ 280 mn (\$5.6 mn) when it was acquired by the FMCG wing of IT major WIPRO in 2004. It was during this period that many otherwise herbal cosmetic manufacturers started coming out with products labeled ayurvedic. All of a sudden the word ayurvedic was everywhere, on toothpastes, shampoos, hair oils, skin care products. Overnight, cosmetic giants like Shahnaz herbals began to sport the Ayurveda brand. Very few established ayurvedic manufacturers have been able to resist participating in this booming market, estimated to be 2.3 billion rupees (Kamat 2007).

The expansion of the OTC segment in Kerala and the increase in magnitude of ad spending seems to have had its beginnings in a single product, Musli Power Extra, an aphrodisiac. It is no exaggeration if we call it Kerala's most controversial ayurvedic product of the decade. The company Kunnath Pharmaceuticals is founded by K. C. Abraham, a farmer turned entrepreneur. He claims to have been a farmer who wanted to cash in on the Viagra hype with a herbal substitute. This idea he claims was developed to cash in on the huge surplus of a herb called *Safed musali* which had no

market⁵⁰⁶. An unofficial version is that he fell prey to the *Safed musali* hype (also see footnote 392)⁵⁰⁷, and had reached the brink of bankruptcy. Either way, this was certainly an example of turning a problem into a opportunity. The company founded in 2005, saw a meteoric rise with the single product, with a 100 fold increase in annual turnover, 4.5 mn in 2005 to 450 mn in 2012 (Note the irony: AVS with a century of history makes a little over than double this money with over 500 products).

The category of aphrodisiacs per se is not new to Ayurveda⁵⁰⁸. Of the large number of formulations in the classics, many included animal products (Valiathan 2003), but the aphrodisiacs in the market today are all purely herbal, perhaps keeping in harmony with the modern Ayurveda's "vegetarian" image. But in modern Indian society where public reference to sexuality is taboo, aphrodisiacs were restricted to a few invisible spaces. 1. Shady street corners, where groups of men are seen huddled around a vendor displaying herbs, pills and exotic stuff like the tail of the monitor lizard. 2. As a serious health complaint addressed within the doctor's clinic. 3 Over the counter raw drugs, for example Shilajit. 4. Aphrodisiacs masquerading as 'rejuvenating tonics' or 'fertility drugs', and 5. Products by small unknown manufacturers sold furtively through raw drug shops.



Musli Power's giant hoarding towering over Thrissur city skyline

Kunnath Pharma broke this taboo by boldly launching the product as a herbal aphrodisiac, cashing in on the combined fame of the herb's traditional reputation as an aphrodisiac, the increased value of brand Ayurveda, and the market buzz around Viagra. The advertisement blared through all media, newspapers television and giant hoardings popped up in the skylines of all major cities,

⁵⁰⁷ *Safed musali* cultivation started in parts of Kerala in early 2000s, when a few Hyderabad and Bangalore-based firms got in touch with Kerala farmers, urging them to grow the herb. For the first two years the companies brought back the herbs, after that the companies disappeared. Farmers had paid through their nose for the saplings, and were at a heavy loss when they had the crop ready and there was no one to buy.

⁵⁰⁸ Charaka Samhita recommended the use of aphrodisiacs to all men who sought offspring and pleasure; the author was "totally lacking in prudishness in his references to sexual activity" (Valiathan 2003).

with the roots of *Safed Musali* stylized to form a suggestive image (see image above), making the average conservative Malayalee squirm in embarrassment. But ever since it entered the market, the product has been making headlines for all the wrong reasons. In the very first year, advertizing the product as *Herbal Viagra*, landed him in a law suit with Pfizer. One set of allegations was on the appropriateness of the herb used (black Vs white *musali*). Some argued that the white variety was not part of ayurvedic texts. In the next few years, there have been several allegations of adulteration, none of which have been proved. Exasperated with the rumors, in 2010, K. C. Abraham announced a 10 million rupee (\$200,000) challenge, saying he would pay that amount to anyone who could prove adulteration.⁵⁰⁹

In early 2010, the Kerala government took the company to court on two counts. Firstly, the company was accused of using the white variety while the approval was for the black. The second case was for flouting the provisions of the Drug and Magic Remedies Act which prohibits advertisement of aphrodisiacs. Meanwhile, in late 2010, the company got into trouble for unauthorized use of posters of an adult rated Malayalam movie. Finally in April 2011, after several unsuccessful raids and allegations, the Kerala Ayurvedic Drugs Controller’s office was able to get the high court to ban its production and distribution. The ban was subsequently lifted by the High Court which issued strict stipulations regarding advertisement, after which it has toned down the advertisement. Now the product is accompanied by a simple slogan, “for a healthy and happy family,” comparable to Kingfisher (alcohol brand) advertising mineral water!



Musli power hoarding post court verdict

But the ayurvedic community in Kerala was disgruntled with the product for a different set of reasons. Firstly, the product was making exaggerated claims aimed at fertility, claiming a success rate of 80-85% based on reportedly dubious clinical trials. Secondly, priced at a whopping ₹ 25-35 (\$0.5-0.7) a capsule, the company was believed to be minting money luring innocent buyers with tall claims.

⁵⁰⁹ Of the two varieties of *Musali*, the North-Indian pharmacopeia used the white (*Safed*) variety and the Kerala pharmacopeia used Nilappana (*Curculigo orchioides*), or the black *Musali*. The two are botanically different, but considered variants of the Ayurvedic drug *Musali*.

There was a fear that such large scale scams would make Ayurveda suspect in public eyes. Finally, unlike small companies that sold low profile aphrodisiacs aimed at a selective audience and away from the public eye, here an aphrodisiac was being sold in broad limelight, that too riding on the brand value of Ayurveda. The magnitude of the publicity campaign was so high that it almost gave a sleazy look to Ayurveda itself, which was already getting sullied by the spread of ‘massage parlors’. The Ayurvedic Drugs Inspector who carried out raids on the company is reported to have said, “This purported herbal remedy has been bringing a lot of bad name for Ayurveda. Foreigners who tried this formulation and find it fake blame our system Ayurveda, not the product” (Padanna 2010).

Ironically, the success story of this product led to the mushrooming of ayurvedic aphrodisiacs across the country, with occasional reports of raids appearing in newspapers. In Gujarat, a few companies were raided for selling ayurvedic aphrodisiacs adulterated with Sildenafil citrate.⁵¹⁰ The Punjab Ayurvedic Drugs Controller ordered a moratorium on the registration of aphrodisiacs and the use of certain prefixes and suffixes in medicine names, claiming it was bringing infamy to Ayurveda⁵¹¹. On the other hand, ironically, many respectable companies in Kerala rushed in to exploit the segment. Surprisingly, among the forerunners was Oushadhi, Kerala’s State owned company.

Whatever be the controversy, the founder of Kunnath Pharmaceuticals, K. C. Abraham received *Vyavasaya Pratibha* award for excellence in business from the President of India, in February 2010. His success story would have tempted many others to follow the OTC route to make a fast buck. Most like Sitaram Ayurveda Pharmacy, keep themselves restricted to celebrity advertizing of simple hair care products. Pankajakasthuri and Kandamkulathy Vaidyasala, the proprietary-focused companies advertize their flagship therapeutic OTC products, *Breathe Eazy* and *Eladi*, respectively. Both of these, being cough and phlegm remedies, fall into the traditional OTC segment and have not courted any controversy. However, Nupal Remedies Pvt. Ltd., a traditional vaidyan founded company known historically for its aggressive advertisement of branded products has taken a step further. The recent advertisement strategy used to promote *Kamilari*, a lever supplement, is raising several eyebrows.

⁵¹⁰ Gujarat Beware of Viagra-mixed 'Ayurvedic' aphrodisiacs. www.DrugsControl.org. July 10, 2005

⁵¹¹ www.DrugsControl.org

Connecting one of Kerala's most infamous afflictions, excessive alcohol consumption,⁵¹² to liver problems, Nupal not only tells drunkards that this will help their liver but also makes it sound like they could carry on with their drinking as far as they continued taking this medicine. Nupal's television advertisement in a Malayalam television channel goes like this:

A little girl warning her young father "This beer will eat up your liver." Dad asks, "So what to do?"

The daughter giggles, looks at her mother and says "Mummy says nothing to fear, it is enough if you take Kamilari."

A grey haired doctor in white coat with stethoscope hanging from his neck, proclaims with authority "Alcohol destroys 70-80% of your liver, without manifesting any external symptoms. Kamilari will regenerate the part that alcohol destroys, 100%, the power of Ayurveda clinically proven, no side-effects"

The family appears together all smiles, and the father declares, "Healthy and happy family!"

The product leaflet further elaborates: While consuming alcohol, 90% of alcohol reaches the liver and turns into carbon dioxide and water. This chemical process produces a byproduct called acetaldehyde which remains in the liver. This substance destroys the liver cells and leads to alcoholic cirrhosis. Simultaneously, a chemical substance called tetra hydro isoquinolines (THIQ) gets accumulated in the brain. This substance prompts the brain to require more and more alcohol, which in turn forces alcohol consumption.....Kamilari improves the day to day functions of an alcohol ravaged liver. Continuous use of Kamilari, curtails the daily intake levels of alcohol, and ultimately neutralizes the action of THIQ and may induce the user to stop alcohol altogether. The damaged liver cells are progressively healed with Kamilari....Kamilari virtually throws a ring of security around the liver.....

The bottom of the leaflet is adorned with a slogan, "Kamilari promises a world free of liver diseases".

This is an instance of how branded medicine can lead to medicalization, expanding the catchment of a medicine that was traditionally meant to address liver problems. This power of redefining a patient, is noticed by a Keralite ayurvedic practitioner-scholar,

"It would appear that medicines are made not for those who need it, but with a confidence that the needy can be 'made'. How can this be done? Creating patients is not possible (though allopathic doctors actually do even that, it is said!), but you can always frighten a person who takes an occasional peg about the havoc it is going to do to his liver...(Agnivesh 2011: 85).

The next shocker came from Ayu:care. Perhaps dissatisfied with the limited reach of their innovative Panchakarma range, in 2009, they came out with *Lavana Tailam*, an anti-obesity OTC medicine (see image below for advertisement of the product). The product, an oil for external application, was aggressively advertized over all media, accompanied by exaggerated claims of its ability to cure

⁵¹² Kerala has the highest per capita consumption (1.76 gallons) per person a year, overtaking traditionally hard-drinking states like Punjab and Haryana. 40% of revenues of the State's annual budget come from alcohol (Biswas 2010)

obesity overnight. The advertisement campaign focused steadfastly on the “classical basis” of the product, the main ingredient being a simple oil-extract of rock salt. The product was an instant hit. When I visited the company office, the marketing desk was constantly buzzing with customers’ calls, most of them from outside Kerala, including Karnataka, Andhra and Tamil Nadu. The marketing desk was manned by the marketing manager himself who was fielding all calls using his multi-lingual skills.

The commercial success of the product inspired them to bring two other products. *Njavara Tailam*, oil of capitalizing on the new found fame of medicinal rice *njavara* (the index plant), and *Vaji Thailam*, an aphrodisiac oil. The other two did not attract much attention, but *Lavana Tailam* was the next controversial product after *Musli Power Extra*. In fact, this product was hotly debated in various forums including popular dailies. The reason

why it got more discussion space was the product’s claim that it is founded on classical ayurvedic principles. The proprietor MD of the company, Dr. Mahesh Menon has posted a short video on You Tube answering all allegations, emphasizing the product’s “classical textual foundation”, saying he had chanced upon a reference to this medicine in the classical texts during his MD education in Pune (Ayu:care 2012).

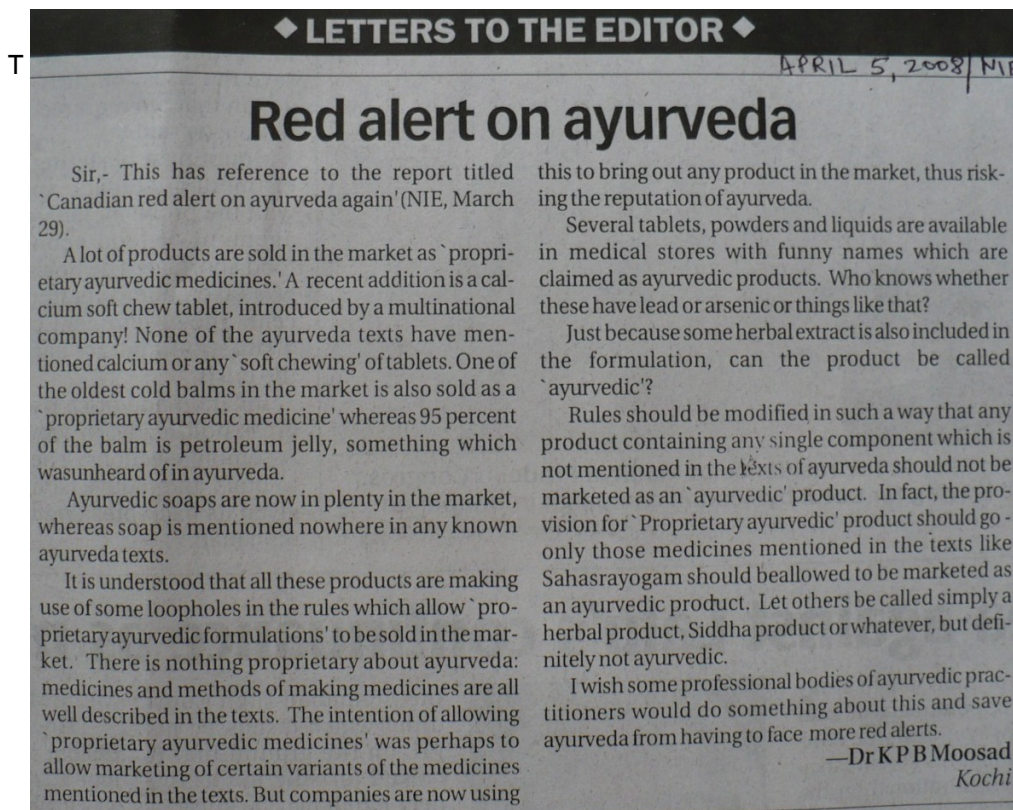
The advertisement is a collage of images and text. At the top left, a woman is shown with the text: "Lavana Tailam brought it back in shape." Below this, a man is shown with the text: "My belly got stretched after childbirth. But Lavana Tailam brought it back in shape." To the right, a woman and a man are shown with the text: "See, I am happy now." and "My belt size is now two points down. It's the Lavana Tailam effect." In the center, a man is shown with the text: "Side effects? Not at all!". At the bottom left, a man is shown with the text: "Yes, like this." The bottom right section contains the text: "The most advanced Ayurvedic solution for excess body size and belly fat." and "Helpline: 09322762518 09322726899". The logo "AYU: CARE" is prominently displayed in the center, with a green leaf icon. Below the logo, it says "AYU-CARE Lavana Tailam Ayurvedic figure care" and "Developed by Institute of Indian Therapies".

Print advertisement for Lavana Thailam an anti-obesity ayurvedic medicinal oil

All together there is a cacophony of Ayurveda advertisements on television and print media. In 2011, ayurvedic medicines led OTC segment in print at the national level, with a share of 32%.(Hindustan Times 2011). Anti-obesity, estimated to be a ₹ 18 billion (\$360 mn) market (Dewan 2009) has been among the main targets. In Kerala, some of the most advertized products include Santhosh Pharmacy’s *Fat Win capsule*, Bhagawathy Madom’s *Fat Free capsules*, Sreedharyam’s

Smartlean, and Dhatri's *Real Slim Oil*. Concerns have been raised by several quarters about the reliability of these medicines and the ethics of advertising (Francis 2009, Jayan 2008).

Ayurvedic practitioners and manufacturers point a finger at the Drug Controlling authority's inability to regulate. Dr. T. Sivadasan, the Ayurvedic Drugs Controller of Kerala throws up his hand in helplessness. "The DMR has no teeth" he says, "If you file a case against a company, it takes ages for justice to be delivered. If they lose the case, they have to pay a small fine, and reword the advertisement. By this time, they will not only recover their investment they will make substantial profit." The General Secretary of AMAI, demanded an inquiry into the veracity of claims made for Ayu:care's anti-obesity and aphrodisiac products, pointing out that such "fake products" would "diminish the dignity of the ayurvedic professionals in the country (Ayurbhishak 2012)." A reputed Ashtavaidyan, Dr. K P B Moosad, wrote a letter to the editor of a popular English daily complaining of the proliferation of un-ayurvedic products.



Letter to Editor by Dr. K P B Moosad: New Indian Express, April 5, 2008

The issue seemed to have reached the boiling point when in early November 2012, rumors of large scale raids on Ayurveda firms in Kerala started pouring in hitherto unheard of online Malayalam news media. Drugs Intelligence Division raided offices and wholesale depots of some of the aggressive OTC sellers including a couple of high flying companies (Madhyamam 2012), leading to confiscation of 50 mn rupee worth of ayurvedic medicines. They raided wholesale depots in 13 of the 14 districts in Kerala as well as the production units of *Dhatri*, *Indulekha*, *Sreedharyam* and confiscated 8 products, mostly oils and other cosmetics for external application. This was followed by a warning by the Health Secretary. The primary allegation was of misleading advertisements and unsubstantiated claims. Query was also raised about the pricing rationale. A 100 ml bottle of *Indulekha* hair oil, whose production cost was less than ₹ 10 (\$0.2) was sold at ₹ 400 (\$8). Interestingly, all the news reports were published by online media, one of which was headlined, “Again media hijacked, news on raids was scuttled (One India 2012). The report alleged that the news of the raids appeared in none of the television channels or newspapers, pointing out that the advertisement revenue was so huge that none of the media wanted to displease the companies, substantiating views I had earlier heard from some ayurvedic practitioners and manufacturers. But the Ayurveda Hospital Management Association alleged that the raids were motivated by interests of MNCs. However, post raids, the advertisements continue unabated.

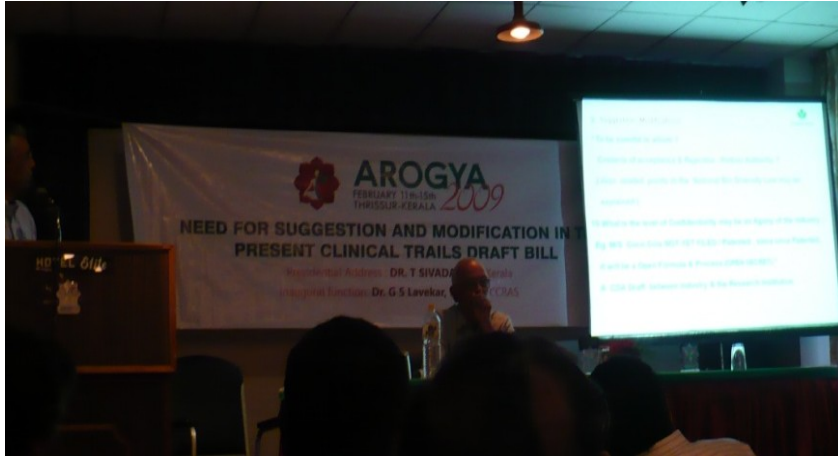
While such high-profile ‘quackery’ is visible, there are many invisible small companies peddling spurious drugs. For example, a company sent an SMS advertisement saying, “Get diabetes reduce with only 1 month course, FDA approved, Kerala Ayurvedic. No side effect. 1,800/- only, money back offer”. The journalist who followed this story, met the company representative who claimed the company was established in 1834, and that the capsule was approved by the Indian Medical Association and the Food and Drug Administration, neither of seem remotely plausible nor have any connection to Ayurveda. The Ayurvedic Drug Controller of Kerala was unaware of the existence of this company (Datta 2011). For those who are aware of the status of the State’s Ayurvedic Drug Control Department, this will not come as a surprise. The Department has been historically under the administrative control of the Biomedical Drug Control Department, without a separate building and adequate resources. After

years of demand, protests and sit-ins, finally in 2010 the State government yielded and created a separate Ayurvedic division in the Drug Control Department, but the Department continued to be hopelessly understaffed. Three ayurvedic drug control inspectors working under the Drug Controller are expected to cover 1000 odd manufacturers across 14 districts. They are expected to check the production facility, to award licenses, and to keep an eye on the distribution network. Dr. P. Y. John, the Ayurvedic Drugs Inspector for Ernakulam zone, for instance, is in charge of 479 manufacturers, each of whom he is expected to visit twice a year. He says this is humanly impossible and that at least one inspector per 100 manufacturers would be essential if the government is serious about regulation.

Ayurveda community in Kerala is disgruntled that the government that runs global campaigns to sell Ayurveda to tourists pays scanty attention to meet the basic requirements of the domestic ayurvedic sector. Practitioners constantly complain about the State government's neglect of Ayurveda, the step motherly attitude that favors modern medicine, and so on, that often gets voiced in media reports. For instance, a media article based on interviews of practitioners states, "Most practitioners oppose the use of Ayurveda as a bait to attract tourists. They demand that the government promote Ayurveda which will attract patients, not tourists, to Kerala (Abraham and Jayadevan 2012)." Another media report aired the complaint of AMAI, of gross disregard for Ayurveda in the comprehensive health policy panel of the State; only one of the 15 panel members was an Ayurvedic doctor (TNN 2013).

It usually happens that the State steps in with regulatory measures, after a critical mass of controversy is built up. And this happened in December 2008 when AYUSH prepared a Draft Bill on Clinical Trials requiring mandatory clinical trials for future proprietary medicines which was received with a mixed reaction. Kerala manufacturers convened a meet to discuss its implications. There was a general feeling that such a regulation was useful to check unscrupulous elements from coming up with spurious products. But they also expressed two major reservations, cost being one. Even large manufactures were worried about the cost. Some including the representative from AVS were concerned about interests of small manufacturers. The second objection was to the biomedical framework of clinical trials, an issue that has been highly debated ever since.⁵¹³ Ayurvedic practitioners have ethical and epistemological problems in conducting randomized clinical trials. They say it is

⁵¹³ Manufacturers' meet to discuss the Clinical Trial Draft Bill, Thrissur, Feb. 14, 2009.



Ayurvedic Manufacturers meet to discuss implications of clinical trial draft notification, Thrissur, 2009

against ayurvedic ethics to use deception (placebo) or to deny treatment (to the control group). They find the framework of randomized trials epistemologically inconsistent in many ways. For example, classification of patients into groups based on diseases, instead of individual

constitutions. An ayurvedic doctor-researcher narrates her experience in participating in the execution of a clinical trial of an antimalarial drug by AYUSH. She found no place for ayurvedic diagnostic of the pathology; the presence of the disease and its cure was confirmed by presence/absence of malaria in the blood smear. Further, the NMEP (National Malaria Eradication Program) dictated that the ayurvedic medicine should be given only for three days to be equivalent to the chloroquine dosage. So even when results showed that the parasite count had come down considerably following the administration of the ayurvedic medicine, it was considered a failure (Rao 2003).

The demand for “evidence” continues to mount. While a minority hold their ground saying it is none of their business to provide evidence, majority of ayurvedic researchers struggle to provide some evidence using biomedical parameters. Some others follow a mid-way, finding innovative ways to adapt the biomedical framework to suit ayurvedic parameters, e.g., classifying patients by body constitution (*prakriti*) or by taking recourse to newly emerging sciences like systems biology (see section 4.3.1).

9.5 The memory market: an unnoticed pre-cursor to the OTC boom

The pre-cursor to the current ayurvedic OTC boom has gone by far unnoticed and unquestioned - a two decade old memory product segment, built over the reputation of a single herb *brahmi*. Though the memory enhancing property of *brahmi* was traditionally known, its nutraceutical usage was

limited to neonatal care and hair care⁵¹⁴. It was not even used as part of the popular ayurvedic rejuvenatives like *Chyawanaprash* (48 ingredients) or *Dashamoolarishtam* (72 ingredients). In 1996, Velvette International Pharma Products Limited launched a commodity called Memory Plus with much fan fare, inaugurated by the then Prime Minister Narasimha Rao. This drug was developed by the Central Drug Research Institute (CDRI), Lucknow, a premier central government organization. Subsequently, a number of celebrities including the chess grandmaster Vishwanathan Anand endorsed the product. It was this product that opened up the new wave of commodification of *brahmi*. Memory Plus succeeded in reviving the fame of *brahmi* across urban consumers in India.

Interestingly, potent plants that go into far more classical preparations (for example index plants like *koovalam* or *kurunthoti*), do not enjoy the popularity of *brahmi*. This is probably because the medicinal property that *brahmi* is known for has a high ‘commodity candidacy’ (Appadurai 1986) as a nutraceutical. The high social value for academic performance makes memory and intelligence premium attributes, conducive to mass marketing. For the expanding middle class that does not want to leave any stone unturned to improve their wards’ grade sheets, *brahmi* makes one more irresistible promise. Naturally, the popular images that appears on product packages and advertisements of *brahmi* are visuals of students in school uniform with books in hand (see image below)

Memory Plus was riddled with controversy right from its inception. Right after the launch, the Indian Council of Medical Research, dominated by biomedical researchers, questioned its credibility, citing insufficient drug trials. Later on in 1998, a random survey conducted by the CDRI revealed that the drug had appallingly lower active ingredients than stipulated, following which the manufacturer’s license was transferred to another company. However, the product went on to open a floodgate for the commodification of *brahmi*’s memory enhancing attribute. Today almost every large and medium pharmacy in India has a *brahmi* product.



Santhosh Brahmi with images of school children

Typical products are named either after the herb, or use the word ‘memory’ or its Hindi/Sanskrit

⁵¹⁴ A review of products in the Ayurvedic Pharmacopeia of India, show that its use was highly selective and restricted to therapeutic purposes. *Sarasvatarishta*, an Ayurvedic wine whose primary ingredient was *Brahmi* was known to stimulate development of intellect, but its Ayurvedic use was mostly limited to the therapeutic context.

synonyms or combine both.

The response from ayurvedic manufacturers in Kerala has been mixed. A section of the traditional large pharmacies like Kottakkal, Vaidyaratnam, SNA and Oushadhi have remained aloof; in their hands *brahmi* remains just another ayurvedic ingredient, with restricted therapeutic application, problem-specific and patient-specific. On the other hand, many large manufacturers including some traditional stakeholders, have jumped on to the memory bandwagon⁵¹⁵. Two aggressively advertized *brahmi* products in Kerala are *Santosh Brahmi* and *Jothish Brahmi*, both from small companies⁵¹⁶. *Jothish Brahmi*⁵¹⁷ is among three ayurvedic products that figured in the top 20 brands in Kerala (Hindu 2009). The television commercial for *Santosh Brahmi*, a product prominently displayed in most biomedical stores, shows a toddler reminding her grandfather that the eye glasses he was searching for was sitting right on his forehead. An ominous warning follows: “small instances of forgetfulness are indicative of memory loss. Ayurveda is the only solution. Before it gets worse, make it a habit of taking Santosh Brahmi every day. It is suitable for people of all ages”.

Unlike classical preparations, these are designed as OTC products many of which are also sold outside the ayurvedic distribution system. They are similar to the nutraceuticals or dietary supplements in the international market, though in India they are sold as ayurvedic or herbal medicines. Another technique employed to capitalize on the nutraceutical value of popular herbs, is to combine them with a well known classical medical formulation, thereby creating a new product niche in the otherwise crowded *brahmi* product market. (e.g., *Chyawan Brahmi* and *Triphala Brahmi*).

Once more, I am tempted to extend the analogy from the Malayalam movie industry that I brought up in Section 2.3. In the quintessential Malayalam movie of the past (up to mid 90s), though the hero had a central role, every supporting actor had a character role to play. Though heroes had the highest star power and popularity, the supporting actors had their own niches; given their versatility, they got far higher role opportunities. In the past decade, with large capital entering the movie industry, the heroes have evolved into superheroes. The story has begun to revolve around them

⁵¹⁵ Some popular products in Kerala are, *Brahmi Pearls* (KAL), *Smaranshakti* (AVP), *Brahmi plus smriti* granules (Nagarjuna), *Brahmi Shakti* (SD pharmacy), *Brahmi Rich* (Kandamkulathy), *Manomitram* (=friend of the mind, from AVN).

⁵¹⁶ In fact, the companies are known by the brand values of these products than by their own identities.

⁵¹⁷ from AshtaVaidya Herbal Pharma

reducing the importance of other characters. A similar trend is what we observe in the commodity careers of ingredients of ayurvedic medicines. The commercial approach to preparing proprietary formulations has made a radical departure from the classical multi-component thinking. The idea is to group many herbs with similar properties together to create a blockbuster. For example, the two *Brahmis* are not found together in the two above mentioned formulations or in *Brahmi Ghritam*, but many proprietary products combine the two. Some add another memory herb *Shankapushpi* also along. An extreme example of such a combination is the multi-crore grossing aphrodisiac *Musli Power Extra*, which combines several potent aphrodisiac herbs in a single pill. By contrast, the components of a classical ayurvedic poly-herbal formulation have diverse properties, and fulfill different functions, like increasing bioavailability, improving digestion, reducing anxiety, improving vitality, and so on (See Section 5.5). Let us take for example the classical brain rejuvenative *Saraswatarishtam*. It has 7 primary and 13 secondary ingredients, of which *brahmi* is the principle ingredient - it is four times greater in quantity than the other ingredients. None of the other herbs are there for their memory enhancing property, not even the other *brahmi*. This is also true of *Brahmi Drakshadi Kashayam* and most of the classical preparations.

9.6 Riding on the vague boundaries between food and medicine

A noticeable trend in the current era of commodification, not just in Kerala but all of India, is the emergence of products that are somewhere between food and medicine, but cannot be classified as either. Though this appears to be a new form of commodification, it is not inherently contradictory to ayurvedic philosophy. In Ayurveda, the boundary between food and medicine has always been amorphous. Many of the material used in food is medicinal, especially spices (for example, turmeric as anti-bacterial, asafetida as carminative, ginger as digestive). Medicinal herbs are also used in daily food (e.g., dry curry of *tazhuthama*) or in beverages (e.g., juice of *koovalam* fruit) or as seasonal diets (for example, seasonal medicinal porridge). Some of these household practices have been going out of use due to unavailability of ingredients, lack of knowledge and lack of time. Commodification appears to have reviving such practices by providing an off the shelf solution, for example, the seasonal medicinal porridge (See section 6.5.1).

But the new wave of commodification does not stop at reproducing traditional forms. Manufacturers invent new forms, new products and new niches. In doing so, they exploit traditional cultural values and memories, but quite often go beyond them. Following the index plant *brahmi* takes us through some of these transformations. In the case of *brahmi*, *Centella asiatica*, the North Indian *brahmi*, has been traditionally part of food but not *Bacopa*. However, with the modern popularity of *brahmi* as a brain tonic, *Bacopa* has also been forced to enter a new commodity life on the shelves of food stores. One such popular commodity in the Kerala market is *Brahmi Jam*, a brain child of Phytomed foundation, a new market-savvy player without ayurvedic background. They identified a niche, designed a successful product, outsourced production to a small ayurvedic manufacturer in interior central Kerala and launched a colorful promotional campaign with advertisements in print and television media. Large cut-outs in the shape of *Brahmi Jam* bottle were embedded with seven small bottles containing samples of the seven constituent herbs and displayed prominently in pharmacies to attract customer attention. The product was distributed through a variety of networks, grocery stores, general medical shops, ayurvedic retail stores and raw drug shops. The product is accompanied with a title slogan, “Spread on the taste. Bring on the health.” The product is based on *brahmi*, that has “a proven quality of improving memory,” The product “improves learning ability” and “children concentrate more and recall better” when it is “used on a regular basis in their diet”. The product talks of ‘ayurvedic principles’, ‘antioxidant agents’, ‘organic, containing no chemicals and artificial colors’, in the same breath, all aimed to charm the modern discerning health conscious consumer. The television advertisement of *Brahmi Jam* features a school girl who shocks teachers with her superior intelligence and outsmarts her parents with her quick wit.



Brahmi Jam

Teas and biscuits have been ideal targets of ayurvedic or herbal augmentation. Tata Tea introduced in March 2007, a new brand called Tata Tea Life launched in the health and wellness market, which included *brahmi* along with four other herbs and spices. AVP, one of the largest ayurvedic manufacturers in Kerala, the first to open a food division, launched *brahmi* biscuits along

with two others, *Ashwagandha* and *Chyawanprash* biscuits. SD Pharmacy launched *Chyavana Rusk*. Nirapara, one of the biggest rice brands in Kerala, added *brahmi* along with five other herbs to preprocessed rice powder that goes into the making of *puttu*, a steamed rice preparation unique to



Chyavana Rusk



Chyavana, Ashwagandha biscuits

Kerala. Interestingly, even public corporations have gotten into the new commodification mood. MILMA, the Milk Federation of Kerala, launched a product called *Brahmi Tone Sweet* in July 2007, and announced its intention of introducing a non-sweet version for the diabetic market.

Though there was no distinction between food and medicine in ayurvedic philosophy, the purpose, mode and frequency of consumption was dictated by custom. In the market context, claims made are evidently linked to commercial logic. Unbridled by regulation, they cross the boundary of wellness and step into the territory of medicine. For example, a cornflake product fortified with *brahmi*, produced by Amrapali, promises that it “reduces stress”, it is used as a “memory enhancer” “cures epilepsy, bronchitis and rheumatism” and that its “Its antioxidant property is used as potent nerve and cardio tonic”. It is not only large companies that cash on such trends. Small companies across the country produce numerous such products selling in local markets. A small company from southern Karnataka was found selling a simple product, *brahmi milk mix* as a memory enhancer; classics recommend *brahmi* to be consumed with milk. A few small ayurvedic companies were seen marketing a range of herb decoctions and syrups in Bangalore targeting the urban health-conscious. Some are meant to be all-purpose health drinks, some recommended for serious diseases like diabetics. Most of them provide no information on the kind and quantity of ingredients and preservatives used. These are sold as health food products, though often accompanied by serious medical advice. This may be justified on the grounds that Ayurveda does not make a strict distinction between nutrition and medicine. However, in the modern market such products escape the regulation of Ayurveda

establishment, and are not covered under any other regulation as India lacks a general policy on herbal drugs and products.

A less visible segment are micro-sellers like women's self help groups and cooperatives. While most of them tend to make known products, some venture into innovations that go beyond traditional boundaries. An example is Gram Niketan, an NGO with 40 branches that has launched several herbal products manufactured and promoted through women's self help groups. Among their product range of nutritious dietary supplements, is a semi-solid extract of *brahmi* combined with a few other herbs. One of their branches that I visited, that has over 300 women as members, are all urged to grow herbs like *brahmi* to save on the input cost. Most of their products are built over the cultural familiarity and ayurvedic knowledge of medicinal herbs, but create a unique niche that is neither food nor medicine, neither traditional nor modern. Such products that try to fit in the food niche, escape the regulations of the medicine market. A local raw drug shop keeper said that women from this NGO had approached him with their products, but he had declined because the products were neither traditional nor registered as proprietary medicines.

A Gujarat based company makes "Intella Biscuits" to enhance memory, which they claim is manufactured by a clinical psychologist. The product carries instructions for consumption that look suspiciously like those found on medicinal products.

INTELLA BISCUITS is best used throughout the academic year to maximize your learning experience. However, using INTELLA BISCUITS for the first time closer to the exam period will still make a difference. It is never too late to start!

CHILD: Take 4-6 BISCUITS daily or as Directed by Physician.

ADULTS: Take 6-8 BISCUITS daily or as Directed by Physician.

Information on the nature of physician who was qualified to be able to prescribe dosage for biscuits, was unfortunately not provided in the brochure. A report published ten years ago in a reputed Indian environmental magazine lamented the international exploitation of the herbal market, and blamed the ayurvedic companies squarely for their inability to commodify the popularity of *brahmi* or *Gotukola* (Down to Earth 1997). The high standards set by the author to match the Gotukola drink sold by the California-based Mrs. Wiggles Rocket Juice Company are evidently now being met.

9.7 Ayurvedic Ingredients, Un-ayurvedic Commodities

Despite the media hype and publicity, high-profile outsiders who seek Ayurveda as a system of medicine for its own sake are a minority when compared to those interested in ayurvedic herbs or herb components. Large multinational firms, mainly biomedical and nutraceutical, aim at harvesting the chemicals out of the plants and utilizing the associated knowledge to fit it within their categories of meaning. Nutraceuticals, the next trillion dollar global market (Pilzer 2001) is increasingly being considered as a market that traditional systems of medicine like Ayurveda feel obligated to tap. That Ayurveda has not been able to exploit this market effectively is an often heard lament from various quarters, including policy makers, scientists and business analysts. For example,

Herbal medicines also find market as nutraceuticals whose current market is estimated at about \$ 80-250 billion in USA and also in Europe. India is sitting on a gold mine of well-recorded and well practiced knowledge of traditional herbal medicine. But, unlike China, India has not been able to capitalize on this herbal wealth by promoting its use in the developed world despite their renewed interest in herbal medicines (Kamboj 2000).

This thrust towards exploiting the global market and the nutraceutical market have begun to have some influence, leading to the marketing of ayurvedic herbs in new market-friendly avatars. The most important transition in the social life of *brahmi* after the Memory Plus popularity was its transition to a *single herb commodity*. This took it out of the polyherbal context and provided it an independent identity. Here *brahmi* represents the commodity life of a number of popular herbs that have acquired a new social life in the form of single herb capsules. Unlike ayurvedic polyherbal products, single herbs have easy access to global markets as dietary supplements. The pioneer company that probably was the trend-setter was the historically export-focused Himalaya Herbal Health Care.⁵¹⁸ This soon caught up as a fashion in the market. Now single herb capsules adorn a few of the Kerala manufacturers' product portfolios, especially those with professed export orientation, like KAL and Nagarjuna. Such products do not figure in Nagarjuna's routine product catalogue, but its export brochure lists 11 single herb products including *brahmi*, with a note: "herbs can be provided in the required combinations also".



KAL's Brahmi Pearls

⁵¹⁸It makes 25 pure herb capsules, which also includes another of the index herbs, *koovalam*.

The next avatar of *brahmi* is in the form of a dietary supplement in international markets, though no ayurvedic manufacturer from Kerala has ventured in this direction as yet. Ayurvedic manufacturers in Kerala feel it is unethical to modify a medicine into a health supplement and make it buyable over the counter. “Ayurveda is being hijacked by the nutraceuticals lobby” complained the General Secretary of the Kerala manufacturer body AMMOI in a media interview (Jayakumar 2008). Mr. Ranjit Puranik, owner-CEO of Dhootapapeshwar, General Secretary of Ayurvedic Drug Manufacturers Association (2002-2010), current executive member of Pharmexcil, is often heard advocating strategy plans to the industry for getting an entry into the developed countries market ⁵¹⁹. Despite this, he admits to being squeamish at the whole idea of having to sell ayurvedic medicines as nutraceuticals⁵²⁰. Let alone nutraceuticals, manufacturers like AVS are yet to evolve a strategy for meeting demands for their own foreign patients.

“It is a diversion” proclaims Dr. Vasudevan, ayurvedic practitioner and Director of the AVP’s educational trust, in a popular media article. He lists key principles of ayurveda that are violated by the new products, viz., the logic of combination (*Samyogam*), processing (*Samskaram*), the form (*Kalpana*), processing (*Pakam*), and dosage (*Matra*), giving examples for each. One example is of a product in the market that combines two ingredients with contradictory characteristics. He says, “a patent product is normally prepared considering the active principle in each herb” which goes against ayurveda’s holistic perception of the herb’s properties (Vasudevan 2003:41). Ayurvedic manufacturers and practitioners in Kerala have little control over the meaning of the ayurvedic herb, of its use and efficacy that are being constantly changed by processes outside the ayurvedic commodity chain. Though common, the usage “ayurvedic herb” is inaccurate. It is important to note that a herb used in Ayurveda does not by default make it ayurvedic, it is the process and the logic behind the formulation which is ayurvedic. A herb has its own life outside the ayurvedic commodity chain, in other systems of Indian medicine, modern nutraceutical use, biomedical use and so on. Pharmacologists are constantly dissecting herbs in attempts to isolate constituents with pharmacological promise. The phytochemical industry aims at extracting the active ingredients to convert them to patentable and saleable phyto-

⁵¹⁹ Various forums on four national conferences that I attended during field work.

⁵²⁰ Interview, Feb. 20, 2012

molecules. *Bacopa monnieri* (*brahmi*) is one of the most researched ayurvedic medicinal plants⁵²¹, and naturally figures in numerous process and product patents. It is classified as belonging to the 'nootropic' class of drugs (smart-drugs). The compounds responsible for the memory enhancing effects are identified as triterpenoid saponins called 'bacosides', especially bacoside A and bacoside B (Russo and Borrelli 2005).

Extract technology has the potential to transform the ayurvedic commodity life of *brahmi*, by overcoming the problem of perishability and seasonality. Herbal extracts are in demand from various quarters, the cosmetic industry, food industry, and especially for exports. Despite abundant availability fresh herbs, extract industry in Kerala is pretty much invisible. Most of the large extract industries are located in North India, often owned by large raw drug suppliers for whom it serves as a highly profitable route to value addition. Arjuna and Elixir are among the few companies in Kerala that supply extracts, but very few ayurvedic manufacturers in Kerala accept *brahmi* or any other herbal extract in its new avatar. Some manufacturers have begun to use aquatic extracts, but restrict the use to making proprietary medicines. Industrial extraction has the potential to modify the end product in ways that may be difficult to establish equivalence. Since understanding the exact nature of a polyherbal product is beyond even the latest of chemical technologies, ayurvedic manufacturers prefer to keep the SOP constant and in line with traditional processes. It is common in ayurvedic medicine making to have different kinds of processes made of the same herb or combinations. For example, *Dhanwantaram Kashayam* is a water extract, whereas *Dhanwantarishtam* is an alcoholic (self-generated) extract. Modern extract technologies may use solvents that may be inconsistent with ayurvedic standards. In 2008, AYUSH permitted the use of hydro-alcoholic extracts, an issue that remains contentious (Kamat 2008). While some modern scientists feel that traditional processing leads to wastage, most ayurvedic manufacturers in Kerala are not sure whether the wastage is intended. The Chief of Technical Services of AVS, Dr. T S Muraleedharan points out that use of extracts is incompatible with ayurvedic logic,

There is no reason to believe that more of a certain set of ingredients is what causes the efficacy because of limitations of chemical tests in revealing the underlying nature of a polyherbal product whose efficacy is mainly based on synergy, we find it safe to stick to traditionally laid procedures.

A different angle on extracts is presented by Dr. Ramesh Varier, the owner-MD of Arya Vaidya

⁵²¹ A search for *Bacopa* in PubMed database gave 130 hits.

Nilayam, the pioneer in *kashayam* tablets. While prioritizing innovation in new production technology, he is at the same time firmly grounded in classical therapeutic tradition, trying to keep the interest of the practitioner in mind while adding value to the manufacturer's role in new ways. Excited by what he saw in the Korean market which he recently visited, he says, "Each individual herb extract is available in the market, and just imagine having that here! It gives enormous power to the vaidyans, enabling them to formulate a medicine based on any permutation and combination". He feels this is the right direction to go because it is a win-win situation for both manufacturers and practitioners. He says, "Industrial manufacturing has led to a situation where practitioners have lost control over ingredients and are in the danger of getting limited to the use of market-available standard formulations".

As for *brahmi*, its commodity life is highly likely to expand in this direction, if not within ayurvedic commodity chain, outside it, as part of various herbal concoctions ranging from cosmetics to nutraceuticals. Today both in the Indian and international market, there are countless herbal products in the form of dietary supplements that sell standardized and modified extracts of *brahmi*. Sami Labs provides standardized extract called bacopin with minimum bacosides 20%, Avesthagen offers BacopaMax with 60% bacosides. For many modern phytomedicine and nutraceutical manufacturers, *brahmi's* 'ayurvedic origins' are an important selling point. But what goes into the end product is a substantially modified extract which is standardized based on various active ingredients, resulting in a product whose *ayurvedicness* becomes questionable. To illustrate, let us look at the product BacoMind produced by Natural Remedies, a Bangalore based company herbal extract company.

BacoMind(patent pending) is a clinically proven (both in elderly and children) enriched standardized phytochemical composition derived from the plant *Bacopa monnieri*, which is well known in Ayurveda as a "brain tonic"... launched after extensive research work by has scientific backup of multiple in vitro, animal and clinical studies to substantiate its beneficial effects as a cognition enhancer and in the management of age related neurodegenerative disorders.

This product, standardized for nine different chemical constituents, provides extensive preclinical and clinical data to support the claims. The brochure extols the ayurvedic origins of *brahmi* depicting an ancient sage writing on a palm leaf together with citations of verses from ancient ayurvedic texts are provided in one page. On another page, *brahmi's* pharmacological prowess is demonstrated in modern pharmacological parlance, 'agonist activation of 6 5-HT-1A receptors'

‘activity modulation of acetylcholine release’ and so on, buttressed with impressive graphics of chemical structures of each active ingredient. Through Baco Mind, *brahmi* enters products around the world, accompanied by strange herbs from far off lands. It is sold to people as an ‘ayurvedic ingredient’ in a product that has little to do with ayurvedic principles. An Australian company manufactures a product called ‘Mega memory: with BacoMind’ combining it with Gingko, *Centella asiatica*, piperine, alpha linoeic acid and vitamin E. The product page online declares, ‘BacoMind® is a patented extract of the popular ayurvedic brain herb *brahmi*’. A Canadian company sells a memory capsule called Solutions Mind that includes BacoMind, Ginseng and Gingko. Another Australian company simply sells BacoMind rebranded along with its name as ‘Ethical Nutrients Memory Booster.’

Ayurvedic companies are being persuaded to look at the active ingredient as a marker to ensure minimum standards of their products. The usual argument is that chemical parameters for quality become important when traditional principles of harvesting are not followed. Classical texts have strict rules about harvesting, sometimes specific to the particular medicine preparation. For example, the *brahmi* for *Saraswatarishtam* is to be plucked on the *Pooyam Nakshatram* (a particular star), two hours before sunrise, in the *Brahma Mahoorta* (auspicious time in Hindu calendar⁵²²). Since such rules are not followed any more, it is argued that the herbs are highly variable in their medicinal content, and there is a need to use marker standardization to ensure reliability.

As of now, ayurvedic manufacturers are not bound to follow these, but those who target export markets or biomedical markets are already using such parameters. For example, Himalaya and Charak explicitly mention the active ingredient constituent in their product brochures. Charak’s Ostolief tablets addressing osteoarthritis is standardized for Boswellic Acid at 85% (See image). Even in relatively conservative Kerala, export-oriented manufacturers have taken the first steps in that direction.



Charak’s anti-arthritis therapy medicine standardized for 85% Boswellic Acid

⁵²² Between 04:08 - 04:56 a.m, believed to be the time when the intellect is at its sharpest.

Nagarjuna, in its export range sells its Nature Range “Gotukola” as a herbal supplement, standardized for Asiaticosides. Kerala Ayurveda Ltd. (KAL) has sent two products revised as per UFSDA norms in 2008 of which its *brahmi* product has been one (KAL 2009). These developments do portend forthcoming global standardization pressures. At the same time, Dr. K. Anil Kumar, Executive Director of KAL himself states the difficulty of exporting classical products, points out, “Many are attempting to bypass the obstructions by exporting products based on single drugs. But remember! Any country can export herbal drugs. Only India could export authentic ayurvedic medicines. Ayurveda got its identity by using formulations that effectively reduced the side effects of single drugs (Kumar 2003:2).”

The effect of such modifications are not necessarily limited to products. Demands for particular active ingredients could have repercussions on the plant itself. Though the average Kerala farmer is unfamiliar with the active ingredient market, the scientists at farmers’ workshops conducted by the Kerala agricultural university were seen talking about cultivars in terms of their constituent content. Regional Research Laboratory of Jammu has standardized a cultivar that has higher bacoside content. For companies like Himalaya that produces products with chromatographic fingerprinting, it makes practical sense to get into contract farming of cultivars with higher levels of the marker constituents. In late 2008, *brahmi* along with three other ayurvedic herbs raked up controversy when agricultural scientists in Kerala announced success in creating a GM version of the herbs. A media report soon quoted a scientist at the department of AYUSH in Delhi.

Scientists may pursue R&D on herbal plants but officially GM is not permitted in Ayurveda. Scientists believe in increasing a single positive attribute but Ayurveda insists on using the holistic character of a plant... (Dasgupta 2008).

The GM approach to herb manipulation though seems appalling from an ayurvedic point of view, is a mere extension of the modern pharmacological interest in ayurvedic herbs as a source of new chemical entities. Just as agricultural scientists try to breed varieties with high bacoside content, genetic engineering of plants to increase necessary constituent parts or chemical constituents must have appeared as a logical next step to biotechnologists. After all, though the herbs are used in Ayurveda, herbs have their own identity outside these systems. One of the scientists involved in the genetic modification experiment, when asked about the research objective responded,

Bacosides A or B have been shown to be important pharmaceutical molecules and we thought that if we could increase the Bacoside content of this plant it would be beneficial for the industry to meet the demand for this molecule. Even today if someone could enhance either taxol or Camptothecin content even by 50% by any means it would be a great service to human society and also to environment.

The argument was logical within his line of inquiry, a pursuit he saw as not only beneficial to the industry but also a service to human society and environment. But the news of genetic modification of herbs rang alarm bells across the ayurvedic community. The heart of the alternative medicine or herbal business is the 'pristineness' the herb, pushing the industry towards more organic and natural. The expected role of science here is not to alter the herb but to ratify, explain and validate its utility. Later in The ayurvedic community's objection to genetic modification became one of the important hurdles in the path of implementation of Bt-Brinjal given the use of wild relatives of brinjal in the production of ayurvedic medicines (for details see Kudlu and Stone 2003). The Kerala sentiment towards genetic modification is evident from the letter that Kerala Chief Minister Achuthanandan wrote to the Prime Minister. Apart from expressing worry that contamination from genetic modification could damage the trade prospects of the State in the international market, he pointed out that, "Kerala is also an important centre of diversity of medicinal plants and heritage of traditional medicines like ayurveda. Serious concern has already been expressed by the Ayurveda practitioners on GM research being undertaken on various crops."

It is the interest in chemical constituents of plants and the global nutraceutical market that has drawn a number of scientists, biotechnologists, pharmacologists and pharmacologists to the Ayurveda field. Though some attention has always been there, the upsurge in attention has been recent, 80% of the articles on Ayurveda in life sciences and chemistry have been post 2000⁵²³. This interest and attention, at the outset is welcomed by the ayurvedic community which feels finally esteemed for the value of its knowledge so far devalued. At the same time, there is also resentment following the gradual realization that the outsiders' interest lies mainly in herbs or chemicals based on herbs, not in the philosophy of Ayurveda, which is often discarded as obsolete and unscientific.

In the Ayurveda Conference at Coimbatore, a Western speaker (see image below) who was trying to bring home the need for ayurvedic therapy to "satisfy the western approach to proof" was

⁵²³ Total number of hits in Google Scholar, out of 4450 articles returned, 3950 were post 2000.

challenged by an irate ayurvedic practitioner in the audience who objected to the imposing of western expectations and standards of what constitutes science.



An American scholar presenting at an ayurvedic Conference, Coimbatore, 2008: Background - collage of PowerPoint slide excerpts

The speaker, visibly taken aback, defended himself saying he was merely responding to ayurvedic interest in addressing the global market. He did not seem to realize that the ayurvedic community had various stakeholders and selling to the West was not necessarily a universal objective among them. Likewise the dissenter also did not realize his challenge was pointless; the speaker was after all addressing a section of the Indian ayurvedic community that was trying to sell Ayurveda to the West. In fact, the key theme of the International ayurvedic Conference organized by Arya Vaidya Pharmacy, “*Globalizing Ayurveda*,” and the speaker was invited to aid in the project of ‘translation’ in the interest of a section of the ayurvedic industry which was eyeing the global market.

After the initial euphoria, there is a slow realization that the glory of Ayurveda is being taken away by scientists from other streams, who begin to dictate terms to their Ayurveda fraternity, chiding them for being “conservative,” persuading them to be “open to science⁵²⁴.” An ayurvedic doctor who

⁵²⁴ Observed in several conference presentations by non-Ayurvedic scientists.

recognizes this, vents his ire in his blog⁵²⁵,

Scientists of other streams or fake practitioners of Ayurveda become the authoritative spokespersons of Ayurveda in high-end forums like seminars, symposiums, workshops or intellectual conclaves of other sort. This is a tragedy. We have academic experts as well as well-versed practitioners of the system in plenty.....It should be realized that the number of decision-makers or policy-makers of the governing systems of any era is a bare-minimum. Naturally the representatives of those systems which have irrefutable social presence get spontaneous entry into the cream of the policy-making camp. It should be admitted with disgrace that we have not achieved that stature yet.

But historically ayurvedic practitioners have always been ready to take on the blame for the deterioration of Ayurveda on their own weak shoulders. The blogger points out,

`The fault is not theirs but it is ours. Nobody else is to be blamed for this vacuum. We are responsible. This should change. We should start talking about our system without delay...Otherwise, the words aired as Ayurveda in front of the global audience will be fractional and biased. It is a disturbing reality that most of the Indian scientific community has limited or no exposure to our traditional knowledge systems. This is nothing connected with personal likes or dislikes. Our system of basic education is very much biased towards the western 'scientific' ideas and predictably, they consider ancient Indian knowledge systems as rituals, myths or pseudo-sciences.

9.8 Conclusion

The discussion in this chapter has centered around new commodities, to use Appadurai's terms, commodities 'diverted' from their regular 'paths'. "The diversion of commodities from their customary paths always carries a risky and morally ambiguous aura...the spirit of entrepreneurship and that of moral taint enter the picture simultaneously (Appadurai 1986:27)." This is true of all the diversions discussed in this chapter. Each diversion has a potential to distort existing practice while at the same time the potential to provide for innovations catering to emerging needs. Products capitalizing on the service market have been mainly inspired by the tourist market and its spin-off, the wellness segment. These diversions serve to provide new entrepreneurial opportunities, mainly leading to re-packaging and re-invention of traditional commodities. They are also characterized by a 'morally ambiguous aura' that has created much anxiety among traditional stakeholders, who respond in various ways by resisting, challenging and even creatively accommodating the diversions. Of the other diversions, the form change of classical medicines though controversial, is a minor issue and as of now, poses no threat to the original form. The expansion in OTC segment is new only to Kerala, but even here, they do not

⁵²⁵ <http://sunethri.blogspot.com/2009/08/address-global-audience-needs-and.html>

seem to pose a threat to the classical segment. The aura of moral ambiguity here is mainly surrounding the breach in advertisement ethics, a matter that is more a failure of the regulatory mechanism than a drastic diversion in the path of the classical commodity.

Diversion towards the neutraceutical path however, can be more threatening, as it calls for a modification of the commodity in terms of its content rather than just form. It is also a segment much likely to be affected by commercial logic, given its connection the flowing in of big capital. But here again, the actors that participate in the diversion are different, mostly natural extract firms, multinational neutraceutical and biomedical pharmaceutical companies (for example, Pharma giants like Ranbaxy and Cadilla have recently entered the ayurvedic OTC segment). While it does carry a potential to distort the definition of ayurvedic medicine in a global context, its role in influencing the domestic ayurvedic market, as of now, is a distant threat. The most challenging to the traditional sector that the classical manufacturers need to watch for is the prescription medicine commodity. This was not the subject of discussion in this chapter because it is not a new trend; it is an old diversion whose role in Ayurveda in the larger national context is well established and has substantially challenged classical Ayurveda as elaborated by researchers Bode (2006, 2008) and Banerjee (2002, 2009) (as discussed in Chapter 2). As of today, it is still a minor segment in the domestic segment in Kerala, but there is a feeling that this could change. The AVS's decision to launch prescription products breaking its century old single-minded commitment to the classical is indicative of this change. However, this does not give a clear indication of the extent of change in the domestic market because in the past decade, many Kerala manufacturers including AVS have been targeting markets in other parts of the country and are in turn being influenced by non-Keralite customers. Inside the Kerala market, the trajectory and significance of this change is closely tied to the prescription habits of ayurvedic practitioners, which is in turn closely linked to the skilling process, as was elaborated in Chapter 4. To estimate the extent of transition in Kerala, it is important to study both historic production profiles of manufacturers and prescription practices of ayurvedic doctors.

CH 10 CONCLUSION

The central focus of this dissertation has been the analysis of the distinctness of Kerala's approach to commodifying Ayurveda. In investigating into the power of commodification in influencing the meaning of a cultural practice, we encountered a case of a cultural commodity generating an alternative commodification model, subsumed within the ethos of its original cultural practice. This subculture of Ayurveda whose practice and consumption was limited to Keralites has catapulted to become an iconic representative of 'authentic' and 'original' Ayurveda in the past two decades of global tourist commodification of Ayurveda. This makes the analysis of the difference additionally significant. Was the difference responsible for the new wave of commodification? Will the hitherto preserved integrity continue to hold given that it is now the inspirational core of the new wave that has not only national but global dimensions? These are questions too broad to be answered here. Rather than providing answers, the dissertation attempts to bring attention to variables that have hitherto been unattended to.

Recent anthropological research on commodities has been guarded in taking a normative view of commodification induced changes, consistent with the discipline's fundamental position on the dynamism of culture. From this perspective, changes have been seen as creative re-inventions, a view that has informed the analysis of commodification of various cultural commodities⁵²⁶ ranging from the mechanical reproduction of food (Bestor 2000) to the globalization of Congolese music (White 1998). In most human endeavors like music or art, commodification-driven diversions can be treated as creative reinventions. But unlike most elements of culture that are "mobile, mixable, unfettered" (Wilk 2000: 18), medicine has parameters that makes reinvention problematic. Though meanings of health and disease are themselves open to renegotiation, concerns about "irrational distortion" (Leslie 1976) are also legitimate, and cannot be ruled out as being judgmental. This is because, unlike most commodities where traders play the role of "cultural brokers that engage in the management of meaning" (White 1998), medicine has officially designated expert mediators - doctors who are bound by a professional

⁵²⁶While all commodities are cultural, cultural commodities are those "that can be distributed and sold as commodities, but which retain to some extent visible signs of the producer's identity, be it national, cultural or individual" (White 2000).

code. In the context of ayurvedic commodification, concerns are often raised about commercial logic overtaking medical logic, of the commodifiable facets of the medical system overshadowing other facets; not much different from those raised with regard to biomedicine. But at the same time, it is important to remember that Ayurveda unlike biomedicine is not restricted to a narrow disease-centric approach to health and is inclusive of dynamic areas of culture ranging from food to life style that provide the potential for creative reinventions.

Keeping this complication aside, the analysis in the first part of the dissertation takes off from the concrete dimension of Ayurveda as represented by pharmaceuticals. I have demonstrated that the trajectory of commodification of ayurvedic pharmaceuticals in Kerala stands in stark contrast to that of rest of India with its focus on classical medicines as opposed to proprietary medicines. The significance of this difference lies in the fact that the former are ‘open-source knowledge based commodities’ that do not allow intellectual property concentration and by virtue of being embedded in the Ayurvedic therapeutic context, limit the commodification potential of ayurvedic medicines. Ayurvedic industry elsewhere in India used the strategies of selling prescription and OTC products to circumvent the ayurvedic physician and the therapeutic context, that were “barriers to commodification” (Kloppenburg 2004). This led to the redefinition of the meaning and identity of ayurvedic commodities and to “diversions” that stretched its “commodity context” (Appadurai 1986). By maintaining the focus on classical medicines, the Kerala industry kept the ayurvedic physician within the loop and thereby helped in keeping the integrity of ayurvedic practice. Kerala’s deviation from the larger norm has been noticed but its significance ignored. It is either seen as an exception (Bode 2008) or as merely being slower on the path of commercialization (Harilal 2010). In fact, expecting the ayurvedic industry in Kerala to soon catch up with the national trend, Harilal expresses doubt on its continued survival as an integral therapeutic system. While acknowledging the winds of change blowing over Kerala, I argue that it is important to understand the uniqueness of Kerala’s trajectory of commodification, against the backdrop of which the change unfolding today can be better understood. I have further argued that it is this culture of integrated practice preserved in Kerala that provided the raw material and impetus for the new era of commodification that has unfolded in the past two decades. Triggered by western

tourist interest, Kerala's Panchakarma" (a set of cleansing therapies) and related therapies, a classical tradition of Ayurveda that had fallen out of use in rest of the country, evolved to become the selling point of ayurvedic tourism. This eventually led to a radical change in the commodification of Ayurveda not only in Kerala, but in rest of India. In the process, Kerala evolved as a new inspirational core for Ayurveda in India, leading to the emergence of a *brand Kerala* in Ayurveda. The analysis of the commodity trajectory of Ayurveda in Kerala assumes special significance given its centrality to the very identity of Ayurveda today.

In trying to analyze Kerala's unique trajectory of industrial commodification, I have argued that manufacturers in Kerala had the "commitment factor" lacking among manufacturers elsewhere. Most of them derive part of their identity by their involvement in the treatment segment and are therefore governed by 'practitioner logic'. AVS, the largest ayurvedic manufacturer in Kerala designed as a charitable trust, played a formative role and set the trend for "committed manufacturing". Commercial logic was made subservient to 'practitioner logic'. In view of keeping the integrity of clinical practice, the pharmacopeia was prioritized rather than individual viability of a particular medicine. This was made viable by the agency distribution model which provided an exclusive channel for the circulation of classical medicines bundled with doctor's consultation.

But at the same time it cannot be denied that this education-service-medicine model intentionally or unintentionally evolved to become a good 'business plan', which is not therefore free of the influence of commercial logic. However, the 'irrational distortion' Leslie predicted is less likely to occur in the context of therapy products, because of the fundamental difference between biomedicine and Ayurveda in the nature of knowledge that goes into the production of medicines. Ayurvedic medicine partly falls in the expert realm and partly in the popular realm. Even in the expert realm it is inherently not as commodifiable as biomedicine. In biomedicine, medicine making is not the doctor's domain; drugs, and knowledge related to prescription of drugs, flow from centralized institutions to practitioners. Unlike biomedicine that relies heavily on privatized intellectual property, Ayurveda depends on a large body of open-source knowledge based in classical texts and collective metis. The strength of classical medicines are that though they are in the expert realm, by virtue of

being open-source they are less centrally controllable. The knowledge of medicines and their making is part of the doctors' skilling process over which industry has little control over. Unlike biomedical drug companies that produce both the product and associated knowledge, ayurvedic manufacturers take up only the lower order 'processing' function. By and large, rather than creating demand, they cater to existing demand that is shaped by historical collective culture of clinical practice.

Hence, at the root of 'commercial viability' of the open-source model is the continuity of a cultural practice, the robustness of it I attribute to its historical evolution in Kerala as a 'mass commodity' in contrast to its elitist status elsewhere in the country. Ethnographical evidence presented in Part Two shows that ayurvedic practice is pervasive in the popular culture of Kerala, that goes beyond medicines to preventive, restorative and rejuvenative regimens. The ethnography of the raw drug shop in Chapter 5 provides an index to this culture. The most salient of these are medicinal diet regimes that lie between the vague boundaries of food and medicine. The medicaments used for such purposes, that I collectively refer to as "traditional-popular formulations," are based in widely distributed household knowledge. The centrality of the poly-herbal decoction, another distinct feature of the Kerala pharmacopeia, has made medicine making a household activity, in contrast to the mainstream Indian mineral-centric pharmacopeia that relegates medicine making to an expert realm. This also has an important implication for conservation. It connected people to ayurvedic ingredients and to their plant sources, thereby promoting the development of popular cultural stakes in medicinal resources in the commons. In Chapter 8, I have argued for the superiority of cultural stakes over economic stakes in long-term conservation of medicinal resources. However, for the forest-dwellers who are the main suppliers of forest commodities, cultural stakes are derived from community-specific oral medical traditions unconnected to Ayurveda.

Ethnographic evidence presented in Chapter 3 adds some historical explanation to Ayurveda's mass commodity status in Kerala. It shows that unlike elsewhere in India where there remained a gulf between elite and popular Ayurveda, in Kerala, practitioners from various castes, religions and classes were found to be participating in a common practice tradition closely linked to classical texts. The regional State government, both pre-independent and post-independent, provided a policy

environment conducive to the continuity of this practice tradition. Continued State patronage for ayurvedic systems under the 19th Century State of Travancore not only provided financial support, but an environment favorable to indigenous knowledge systems. In addition, the post independent Kerala State played a proactive role in participating in manufacturing, therapy and education, providing a formidable counterbalance to commodity forces by keeping Ayurveda affordable for the masses.

If we attempt to identify stakeholders who have “the power to control the meaning of the commodity” (Radin and Sunder 2005:16) it is possible to discern some of the reasons for Kerala’s uniqueness. Though manufacturing industry is the biggest in terms of muscle power, in Kerala, the rest of the stakeholders (practitioners, academy, public and the State) continue to have a strong voice in the construction of the meaning and identity of Ayurveda. Elsewhere in India, the progressive weakening of practitioner power that began with colonial policies of delegitimization continued with post independence (Leslie 1969). The State’s privileging of the “cultural authority of science” (Prakash 1999: 3) created an environment in which both practitioners and the public moved away from indigenous medical systems, setting an environment conducive for deskilling. In this milieu, the manufacturing sector emerged as the most powerful stakeholder, without a strong counterbalancing force to question its ways and means.

I have argued that the turning point of commodification of Ayurveda in Kerala is the bottling of the decoctions following which the industry managed to persuade doctors and consumers to stop making medicines. The resulting deskilling of consumers, as described in Part 2, is neither complete nor irreversible. It is important to differentiate between commodities like medicine that are in the expert realm which are more vulnerable to centralized control over meaning-making than commodities in the popular realm. Deskilling is less likely to be effective in circumstances where cultural habits are strong-rooted and knowledge and skills related to it are more distributed, like for instance in the case of food. “Even the largest behemoths of the food industry have to deal with the resistance and indifference of consumers, and the inherent contradictions of their tastes and demands...(Wilk 2000: 20)” In the aftermath of the factory produced decoction, the home decoction making culture continues to co-exist. In fact, new solutions have emerged in the market that promise to aid in the process of

cooking decoctions at home. In the past decade, simple technological solutions have emerged that help in maintaining the identity of classical products while changing them to forms convenient and palatable. Commodification in this context, appears to aid the maintenance of a tradition that was otherwise facing extinction due deskilling.

But at the same time, industrial production furthered the process of homogenization that was set in motion by modern institutionalization. The concept of *metis* i.e., local practical knowledge (Scott 1998) provided the analytical framework to comprehend ayurvedic knowledge in juxtaposition with pressures of homogenization. Concepts of ‘alienation’ (Marx 1876) and ‘deskilling’ (Stone 2007) further help in unpacking the nuances of the process of knowledge and skill loss that results from industrial commodification. I have argued in Part two that Ayurveda does have both static and changing components, and that the latter that is essentially *metis* is often shortchanged by the “hegemony of high-modernist science” (Scott 1998) which, in favor of universality and uniformity, exalts the former.

In Chapter 4, I have argued that industrialized commodification distances practitioners from making medicines and thereby from associated cognitive processes that feed into innovation. The result has parallels with agricultural deskilling which “is not the displacement of a static set of skills but rather the disruption of an ongoing process of skilling” (Stone 2007:73). Practitioners’ involvement in medicine making is important in keeping intact the cognitive processes (what I refer to as ‘thinking medicine’) that have hitherto contributed to the production of ayurvedic knowledge. Distancing them from medicine making also distanced them from plants and their sources. In Chapter 8, I have described how increased distance of producers from raw material contributes to a crisis in medicine quality and conservation. Ethnographies of index plants demonstrate the knowledge-intensive role played by fresh herb collector-aggregators who in the absence of a direct relationship between practitioners and raw material, wield enormous influence in shaping identities of medicinal ingredients.

But in the context of practitioner deskilling, industry appears to be more a dependent than an independent variable. The most important factor in the deskilling of the practitioner I suggest is the weakening of the skilling process caused by the shift from a practice-centric *gurukula* system to a text-

centric institutional format inimical to the transmission of collective metis. Deskilled practitioners provided the industry more room to expand; the industry merely furthered the process of deskilling by providing a convenient alternative. However, contrary to routine expectations of the industry benefiting from practitioner deskilling, the classical product based industry of Kerala appears to be suffering from its consequences. In a national conference in early 2012, the General Secretary of the largest ayurvedic manufacturers' association of Kerala raised an alarm with regard to poor quality of output of ayurvedic colleges, complaining that it was threatening the classical market. He warned that unless ayurvedic education was reformed, classical focused companies like his would be forced to shift their marketing strategies towards proprietary products. This substantiates the observation I made earlier – ayurvedic industry in Kerala makes products to cater existing demand, which has its foundation in practitioner knowledge of classical medicine.

The situation that industry in Kerala is facing today is comparable to the national scene in the 60s, when committed manufacturers were forced to switch from classical to other segments owing to the moving away of their client base. Is Kerala going in the same direction? Is Harilal's (2010) portent of an impending threat to Ayurveda's integrity in the lines of what happened in rest of India drawing close? What factors would tilt the scale in favor of proprietary medicines? It is beyond the scope of the thesis to answer these questions. However, I suggest that the difference between the ayurvedic milieu inside and outside Kerala has to be taken into account in addressing these questions. The difference is important because Ayurveda in Kerala provides a multi-stakeholder situation that offers more resistance to commodification than elsewhere in India. I have established that the Kerala manufacturers themselves are a different lot who give primacy to practitioner logic and have established a commercial model that continues to be viable. So much so that even new generation proprietary-focused companies adhere to the same model to earn respectability. Those who do not do this are considered unscrupulous "nouveau riche" (Agnivesh 2011). To some extent they are able to influence the market by creating new segments like cosmetics and aphrodisiacs that even traditional stakeholders have rushed in to participate. But they are fringe stakeholders in terms of identity; their potential for meaning making appears to be limited, as yet.

This being the case, I conjecture that the real threat is not from cosmetics or nutraceuticals as Harilal (2010) portends, which have more of an ‘expanding’ rather than ‘diverting’ influence, but from branded prescription medicines that can potentially displace classical medicines. The potential of such displacement is directly proportionate to consumer and practitioner deskilling. However, the Kerala classical manufacturing industry, instead of simply moving away to more lucrative pastures is innovating new ways to retain the classical market. On one hand, faced with the prospect of losing market due to practitioner deskilling, a section of the Kerala industry is taking proactive action to intervene in the skilling process. On the other hand, classical products are being repackaged and presented in new forms to stop consumers from straying away to other convenient and palatable alternatives.

Adding a twist to the story, the post tourist ayurvedic market centered around service and therapy shows a potential to rekindle the classical market. Unlike the industrial era of the past century, the commodification trajectory post tourist Ayurveda is no more linear and predictable. In Part 3, I have described a shift in ayurvedic market that can be called paradigmatic - the focus of commodification in the past two decades shifted not only from *pharmaceuticals* to *services*, but also from *illness* to *wellness*. This led to the revival of other aspects of Ayurveda that were neglected in the era of pharmaceuticalization. In Kerala, this led to the expansion of a seasonal wellness therapy (*Karkidaka Sukha Chikitsa*) from an elite practice to a mass commodity. But in the rest of India, that had no history of such practice, Panchakarma centers spread like wild fire, creating new categories of wellness clinics and wellness consumers.

In Kerala, it led to the further expansion of the therapy segment and made ayurvedic services an area for investment of new capital. The consequence is ironical; Ayurveda in Kerala which had escaped being governed by the commercial logic in the pharmaceutical era, now appears to have become inextricably caught in its web. The emergence of new consumers with unconventional expectations, together with non-ayurvedic stakeholders unfettered by practitioner ethos, has created the opportunity for numerous diversions, some of which appear to carve new “paths” for further commodification. This provides a climate conducive for “irrational distortions” like for instance, the

menu and package model of therapy vending. Ironically, Ayurveda's subjective and individualized approach, makes it eminently commodifiable. In addition to this, unlike classical commodities that catered to knowledgeable insiders, *Kerala Ayurveda* is increasingly targeted to outsiders. The "commodity context" (Appadurai 1986) has been stretched to new geographies (outside Kerala) and new spaces (outside the doctor's clinic). The "morally ambiguous aura" (Appadurai 1986) created in the wake of commodification of a cultural practice out of its traditional context makes way for diversions and reinterpretations that are often controversial. The inherent ambiguity of the fundamental attributes of ayurveda, (like for example, the concept of 'enhancing health', the subjectivity of individualized protocols, and so on) makes it difficult to draw a line between irrational distortions and creative re-inventions.

APPENDICES

Appendix A: Sample Details

1. Manufacturing companies - representative and distinct features

- Three represent the Arya Vaidya guru lineage (i.e., AVS alumni): AVS, AVP & AVN
- Four represent the *Ashtavaidyan* family tradition: Vaidyaratnam, SNA, Vaidyamadham & Vaidyaraj
- Two are owned by the Kerala State: Oushadhi and Ayurdhara Pharmaceuticals
- Three represent historical proprietary focus: Kandamkulathy, Nupal & Kalan Pharmaceuticals.
- Companies with professed traditionalist policies: Keraleeya Ayurveda Samajam & Vaidyamadham
- Two new generation companies with non-conventional OTC focus: Ayu:care & Kunnath
- Niche product companies: AVN for decoction tablets and Everest Pharma for decoction powders.
- Ownership by religious organizations: Santigiri Ashram (Ezhava Hindu), Sahyadri (Christian missionary NGO)
- Publicly listed companies: Nagarjuna Herbal Concentrates Ltd. and Kerala Ayurveda Limited (KAL)
- Treatment oriented production units: Vaidyamadham Vaidyasala and Nangelil Pharmacy
- Other distinct features of companies selected:
 - Sitaram Ayurveda Pharmacy for being the first company to obtain Good Manufacturing Practice certificate.
 - Santigiri, distinct in their ownership of a raw drug franchisee.
 - Keraleeya Ayurveda Samajam and Vaidyamadham Vaidyasala for their historical professed ‘purist’ approach to modern commodification.
 - Traditional companies participating in tourist and post-tourist commodification: AVP, KAL and Kandamkulathy Vaidyasala
 - Companies with international joint ventures: SNA (with Italy) and KAL (United States)
 - Chempenkulam Ayurveda Pharma, a small manufacturer in a tourist region, with tourist focused massage oil range.

2. District wise classification of manufacturers, raw drug shops and retail ayurvedic agencies

	Thrissur	Ernakulam	Idukki	Kottayam	Other districts	Total
Manufacturers	13	8	6			34
Raw drug shops	3	4	8	1	1 Wayanad 1 TVM	18
Retail Ayurvedic agencies ⁵²⁷	4	4	5			15

⁵²⁷ These included agencies of 4 large, 4 medium and 2 small manufacturers.

3. Practitioners' Sample

- Of the 17 traditional practitioners, nine were from Idukki, two from Kottayam, four from Trichur and two from Ernakulam.
- Specializations: four generalists, two single-root practitioners, two *Marma* specialists, one *Kalari* practitioner, three poison healers, two eye-specialists, one veterinarian, one pediatrician and one burn-cure vaidyan. Three of these were women. Two held 'A' class medical practitioners license issued by the government of Kerala. Of the rest, ten had registration numbers issued by practitioner guilds.
- Nature of employment: Of the 16 degree-holding practitioners in the sample, three were government practitioners, one was employed by an agency, one employed by a hospital, two were independent consultants without agency, three were hospital owners and the rest six were owners of clinic cum manufacturer agency. Besides this, many other respondents in the manufacturing node were also practitioners.
- The 9 Scheduled Tribe medical practitioners interviewed represented five communities. One each from the Kadar, Urali, and Kuruchiyar communities, two Muthuvans, and three Kanis. Seven of the Vaidyans were certified by KIRTADS.
- The outside Kerala practitioner sample included 10 degree holding practitioners from various other parts of India and two Italian practitioners whom I met during Ayurvedic conferences.

4. Students and Teachers: Break-up

	Kerala	Outside Kerala
Government/aided	2	0
Private	2	5 (3 Keralites)
MD student	1	3
Teachers	3	2

5. Tourist node sample

Classified by location		Classified by type	
Backwaters in Kumarakom, Kottayam	6	Exclusive Ayurvedic resorts	3 (one owned by the State)
Fort Kochi, Ernakulam district	5	Small independent ayurveda centers	5
Thekkady hill resort, Idukki district	3	Hotels with manufacturers' tie-up	3
Beaches - Kovalam, Varkala	5	wellness center with manufacturer's tie-up	1
Interior regions	2	hotels with small Ayurveda centers	3 (one with tie-up with a local large hospital)
		Regular clinic cum spa in non-tourist town	1
		Tourist therapy- centric places	3 (1 by a large manufacturer, 2 run by doctors)

6. List of office holders, government and non-government

- Directors of the State Ayush Directorate, 2006-2011
- Director of Department of Ayurvedic Medical Education (DAME)
- State Ayurvedic Drug Controller and Drug Inspectors
- CEO and other officers of State Medicinal Plant Board,
- Director of Kerala Pharmacognosy Department
- Tourist officer, Calicut
- Two members of CCIM (Central Council for Indian Medicine) from Kerala
- Forest conservator of Idukki and two other forest officials
- Chairman and other staff of SCST Federation
- Researcher scientists at Medicinal and Aromatic Plant Research Institute, Odakkali
- Director of KIRTADS, Kerala Institute for Research Training and Development Studies of Scheduled Castes & Scheduled Tribes
- Director of Indian Institute of Panchakarma.
- CEO of Ayurvedic industrial cluster (CARE) in Trichur
- The General Secretary of AMMOI- Ayurvedic Manufacturing Association of India
- Two General Secretaries of AMAI - Ayurvedic Medical Association of India, the largest practitioner association of Kerala
- The ex-General Secretary of ADMA - Ayurvedic Drug Manufacturers Association, the largest national manufacturers association (and also member of Executive Committee of Pharmexcil)
- General Secretary of Ayurvedic manufacturers, Karnataka who is also the Director of National Consortium of Ayush Industrial Clusters.

7. List of Conferences/workshops observed/participated during fieldwork

- International conference on Ayurveda and Arogya Expo in Coimbatore, Aug. 21-25th 2008
- 3rd World Ayurveda Congress and Ayurveda exposition in Jaipur, 16-21 December 2008
- Global Ayurveda Business Summit in Kochi, 25-26th March, 2010
- Arogya Industrial Exposition, 11th-15th February, 2009, Thrissur
- Kerala, 4th World Ayurveda Congress and exposition in Bangalore, 9-13th Dec. 2010
- Global Ayurveda Festival, Kerala 9th-14th Feb. 2012 in Trivandrum, Kerala.
- All Kerala Ayurvedic Manufacturers Annual Meeting, Thrissur, August 1-2, 2009
- Ayurvedic Manufacturers' meet to discuss the Clinical Trial Draft Bill, Thrissur, Feb. 14, 2009
- A state wide protest march by Ayurvedic doctors and students, Feb. 26, 2008.
- Ayurvedic pharmaceutical manufacturing workshop, Aug. 2008.
- National Workshop for Standardizing *Panchakarma* in Thrissur, 5-6 Feb, 2010. Cheruthuruthy, Kerala.
- Ayurvedic academic seminar, Kottakkal Arya Vaidya Sala, Ernakulam, Oct. 12, 2008
- *Ashtanga Satram*, a symposium focusing on the recital of classical Ayurvedic text *Ashtanga Hridayam*, Dec. 13-30, 2009, Kanyakumari.
- Two Kerala Ayurveda Mandalam meetings in Kochi.
- State level meet of *Parmaparya* vaidyans, Feb.8, 2009, Kochi
- State level meet of Ayurvedic paraprofessionals, July 22, 2009, Palakkad
- An Ayurveda medical camp, Ernakulam
- Kerala Travel Mart at Ernakulam, an international tourism marketing event organized by the Travel industry. 23-26 2010, Kochi.

Appendix B: Profiles of Ayurvedic pharmaceutical agencies

1. AN town

These are representative of the three common categories, an exclusive franchisee of a large manufacturer, franchisee of a medium sized pharmacy run combined with the raw drug business, and an outlet of a local doctor-manufacturer hailing from a traditional Vaidya family.

The agency of Arya Vaidya Sala (AVS) is run by an Ayurvedic doctor couple. They stock around 250 medicines in sufficient quantity and a bottle or two to represent the rest of the pharmacopeia (AVS makes around 530 classical medicines). Around 70% of the medicines sales is driven by prescription, Of the remaining 30%, around half are repeat patients. The most common medicines bought over the counter are 3-4 wines, mainly digestives and tonics, 3-4 oils used for hair care, joint pains and post delivery care, and 3-4 decoctions. They stock no non-AVS medicine, as is expected of AVS franchises; agencies of other manufacturers have the liberty to stock non-competitive products of other companies.

The agency of Kandankulathi, a medium sized pharmacy based in central Kerala, is run by a raw drug shop keeper. Given the increasing consumption of finished medicine by people, he found it a wiser move to expand his net; finished medicine now constitutes 30 % of his sales. Since it was difficult for him to get an agency of a large pharmacy, he chose a medium sized pharmacy with local reputation. He does not have a doctor for consultation, mainly because of a space constraint. Prescription sales account for half the turnover of finished medicines. He stocks a number of ethical and proprietary products of North Indian companies that are pushed by distributors. These are kept on credit, on the condition that they be taken back if unsold. He also sells semi-processed medicines, mainly decoction mixes manufactured by two local micro level companies. Common products in this category are mixtures meant to treat urinary calculi and hemorrhoids.

Aravind Pharmacy, a small traditional pharmacy, is the oldest in the town. The doctor-owner of the pharmacy inherited it from his father who was a diploma holding traditional practitioner. He makes around 150-200 classical medicines for use in treatment. Given the scale of his practice, he does not find it viable to make rare medicines, which patients buy from the agency of their choice. His shop is located on a main road near the bust stand, as a result of which 30% of his sales come from walk-in customers. He does not make any proprietary medicine nor stock any proprietary medicines of other manufacturers.

2. PS village

The franchisee of Vaidyaratnam, one of the top five Kerala manufacturers, is run by a middle-aged man who returned after a few years of working in the Middle East. He wanted to invest some of his savings in a safe and comfortable business. He stocks around 200 classical medicines in the shop. He also has a dozen proprietary medicines, which are mainly sold on prescription. In general, he said 50% were sold on prescriptions and rest appear to be repeat prescriptions. "They have to be, because but for a handful that are popular, rest are not known to people, and anyway consultation is free, so people don't worry about meeting the doctor." A doctor comes twice a week for consultation. The doctor who works at five other clinics is a beginner, and is yet to establish himself.

Owner of the traditional pharmacy in the old junction was reluctant to speak. This I learnt later was because it was an establishment run by a traditional practitioner family, but did not have a doctor in this generation. In such cases, the license would be usually in the name of an absentee doctor. This pharmacy made around 150 classical medicines, and a couple of traditional proprietary medicines. They also sold a few proprietary medicines of various other companies, mainly those that were pushed by local distributors. Despite the presence of agencies of large manufactures, the pharmacy survived on the trust and good will built over generations. In fact, despite the small scale and absence of doctor, the owner had found it meaningful enough to go for a Good Manufacturing Practice (GMP) certification by the Ayurvedic Drug Controlling authority.

Appendix C: Treatment Protocol on Chikungunya management

(Example for complexity of Ayurvedic diagnostic and treatment protocol)

Developed by the State Epidemic Cell of the Ayurvedic Medical Association of India (AMAI),
a Kerala based Ayurvedic practitioners' association

Important: Information(s) on this page are from Ayurveda Medical Association of India and are intended for qualified ayurvedic physicians only.

(I) Three point management approaches should be adopted

(i) Acute management (ii) Post fever arthralgia management (iii) Prevention

(II) In acute Phase (2-3 days) the following symptoms can be seen

(i) Sudden onset of fever Up to 39 to 40°C (ii) Intermittent shaking chills (iii) Headache (iv) Nausea, vomiting (v) Joint pain with or without swelling (vi) Low back pain (vii) Rash (viii) May remit for 1-2 days & then return "saddle back" fever curve

(III) In this stage the following medications are found very effective

(1) In fever and pain

(i) Amrutharishtam + Punarnavasavam 20-30 ml tds
(ii) 2 Vettumaran gulika with Ginger juice and Honey tds
(iii) 2 Sudarsanam gulika tds (iv) Sudarsanachooram ¼ tsp with 30 ml Amrutharishtam tds (v) 2 Mukkamukkadukadi gulika tds
(vi) 2 Sooryaprabha gulika with Ginger juice tds
(vii) Amruthotharam kashayam with 2 Vettumaran tds
(viii) Godanthi bhasmam 200mg with honey bd

(2) In nausea and vomiting

(i) Thaleesapathradi vatakam sos (ii) ½ Vilwadi gulika with honey tds
(iii) Vilwadi lehyam sos (iv) 2 Dhanwantaram gulika with shadamgam tds
(v) Water boiled with [a. dhanyakam b. sunti c. ela] (vi) Water boiled with Guloochi stem (vii) Tender coconut water (viii) Medicine contained Bhoonimba are found very effective in all cases.
Thrisun tab is also found effective in acute fever

(IV) Formula to make fever reducing drug suggested by Dr Unnikrishnan (Note: Dr Unnikrishnan is Professor in Dept of Pharmacology, AVC, Tvpm)

(i) Godanthi bhasmam 100mg + Sudarsanachooram 100 mg + Guloochi extract 5ml + Vettumaran 100mg

(V) Dhoopanam

(i) Aparajitha dhoopachooram should be fumed in the room of the patient. It will stimulate the resistance of the patient against the infection. It is not meant for mosquito eradication.
(ii) Mustard, Neem leaves, Induppu (Saindhavam) and little ghee
(iii) Gulgulu, Akil, Chenchalyam, Vayambu, Kadukka, Neem leaves, Inthuppu and little ghee

(VI) In the post fever Arthralgia, following are the general symptoms;

(i) Polyarticular, migratory (ii) Predominantly affect small joints of Hands, wrists, ankles and feet, with less involvement of larger joints (iii) Pain on movement [a. worse in the morning b. improved by mild exercise c. exacerbated by strenuous exercise] (iv) Swelling may occur but fluid accumulation is uncommon (v) Generalized myalgias, back & shoulder pain - common (vi) Swelling of feet (vii) Achilles tendonitis

In this stage Ayurvedic management should be designed in accordance with Dosha predominance. We grouped the symptoms as follows;

1) Vata predominant symptoms

(i) Polyarthralgia with minimal inflammation - In this condition the following medicine can be given; (i) Dashamoola kashayam (ii) Balapunarnavadi kashayam (iii) Indukantham kashayam (iv) Yogarajagulgulu (v) Shaddharanam (vi) Karpooradi thailam (local application) (vii) Formula for fresh decoction [a. Guloochi 6 parts b. Musta 4 parts c. sunti 2 parts] (viii) IP management [a. upanahasewdam b. dhanyamladhara c. naleeswedam with tulasi leaves, manual]

(2) Pith predominant symptoms

(i) Patechial maculo papular rashes (ii) Desquamation in feet, testes, vulva etc (iii) Oral lesions (iv) Par aesthesia (v) Restlessness (vi) Apathy (vii) Confusion

In this condition the following medicine can be given: (i) Guloochyadi kashayam (ii) Punarnavadi kashayam (iii) Amruthagulgulu (iv) Chandraprabha (v) Formula for fresh decoction (a. Guloochi 6 parts b. bhoonimbam 4 parts c. sunti 2 parts) (vi) Jadamayadilepachooram local (vii) IP Management (a. lepam)

(3) Kapha predominance symptoms

(i) Swellings of legs, feet, nape, wrist joints etc (ii) Cervical and inguinal lymph adenitis

In this condition the following medicine can be given - (i) Gulguluthikthakam kashayam (ii) Varanadi kashayam (iii) Raasnasapthakam kashayam (iv) Gokshuradigulgulu (v) Simhanadagulgulu (vi) Formula for fresh decoction [a. Guloochi 6 parts - b. amalaki 4 parts c. musta 2 parts]

(vii) IP Management [a. valooka swedam (manal kizhi) b. dhanyamladhara c. naleeswedam]

In all cases Sallaki preparations are found very effective

(VII) Diet

(1) Dos - (i) Light food like kanji (ii) Yoosha of mudga, kulatha (iii) Vegetable curry with low oil and coconut [a. carrot b. koval c. snake guard (padavalam) d. kaipa (bitter guard) e. muringa (drum stick) f. amara (beans)] (iv) small fishes (v) bread (vi) Drinking water [a. sunti b. pepper c. dhanyakam d. kattu thulasi]

(2) Donts - (i) Leafy vegetables (ii) Uzhunnu (Black gram) (iii) Curd (iv) Banana (v) Sour substance (vi) Big fishes (vii) Meat (viii) Heavy foods (ix) Oily foods

(VIII) Prevention: According to the principles of prevention in Janapadodhwamsaneeya Vyadhi a single remedy can be given to all. The following drugs are selected for prevention

(1) Medication

(i) Indukantham kashayam (ii) Sudarssanam gulika (iii) Mukkamukkadukadi gulika (iv) Vilwadi gulika (v) Rajanyadi choornam (children) (vi) Indukantham ghrutham (children)

(2) Mosquito eradication

(i) Decoction of tobacco leaves with neem oil and soap (ii) Garlic juice spray (iii) Dhoopam [a. mustard, neem leaves, inthuppu (saindhavam) and little ghee

b. gulgulu, akil, chenchalyam, vayambu, kaduku, neem leaves, inthuppu and little ghee]

(IX) Mandatory lab tests

(i) Blood routine (ii) Bleeding time, Clotting time, Platelet count (iii) Viral assays (iv) ASO, RA, TSH, LFT

(X) Most found complications

(i) Thyroiditis (ii) Loss of libido (iii) Profuse loss of scalp hair (iv) Hyper pigmentation (v) Menstrual cycle irregularity (vi) Lethargy

Appendix D: Ayurvedic Pharmacology: Basic concepts

1. The classificatory system of objects based in *Vaisheshika*

Charaka Samhita accepts the Vaisheshika view that world is made up of six *Padarthas* (objects of experience), but each of these are described differently in the context of application to medicine.

- i. **Substance (*Dravya*):** The only one category that is independent by itself is the substance, which forms the substratum on which the five others are built. Charaka defines substance as that which possesses quality and action in relation to inherence and is also the inseparable material cause of all effects. There are nine such substances, the Panchabhutas, that is five elements, earth, water, fire, air, ether and four other substances, time, space, manas (mind), and atma (self)
- ii. **Quality (*Gunas*):** Charaka classifies qualities into sensible (sound, touch, color, taste and smell) and physical qualities are classified into Guruvadya Gunas and Paradya Gunas. Guruvadya Gunas are twenty, listed on ten dimensions.

Paradya Gunas (Physico-pharmacological qualities)				Aparadya Gunas (Para-pharmacological qualities)		
Continuum	Gunas		(Qualities)		Gunas	(Qualities)
Weight	<i>Guru</i>	<i>Laghu</i>	Heavy	Light	<i>Paratva</i>	Priority/proximity
Temperature	<i>Sheeta</i>	<i>Ushna</i>	Cold	Hot	<i>Aparatva</i>	Inferiority/unimportance/remoteness
Emolliency	<i>Snigdha</i>	<i>Rooksha</i>	Moist/Unc tuous	Dry	<i>Samyoga</i>	Conjunction
Intensity	<i>Manda</i>	<i>Tikshna</i>	Slow/dull	intense	<i>Vibhaga</i>	Disjunction
Fluidity	<i>Sthira</i>	<i>Chara</i>	Stable	Mobile	<i>Yukti</i>	Reason
Rigidity	<i>Mridu</i>	<i>Kathina</i>	Soft	Hard	<i>Prthaktva</i>	Individuality
Adhesion	<i>Vishada</i>	<i>Picchila</i>	Clear	Sticky	<i>Parimana</i>	measurement by weight
Texture	<i>Shlakshna</i>	<i>Khara</i>	Smooth	Rough	<i>Samskara</i>	Transformation
Density	<i>Sookshma</i>	<i>Sthoola</i>	Subtle	Gross	<i>Abhyasa</i>	Habit or Practice
Viscosity	<i>Sandra</i>	<i>Drava</i>	Solid	Liquid		

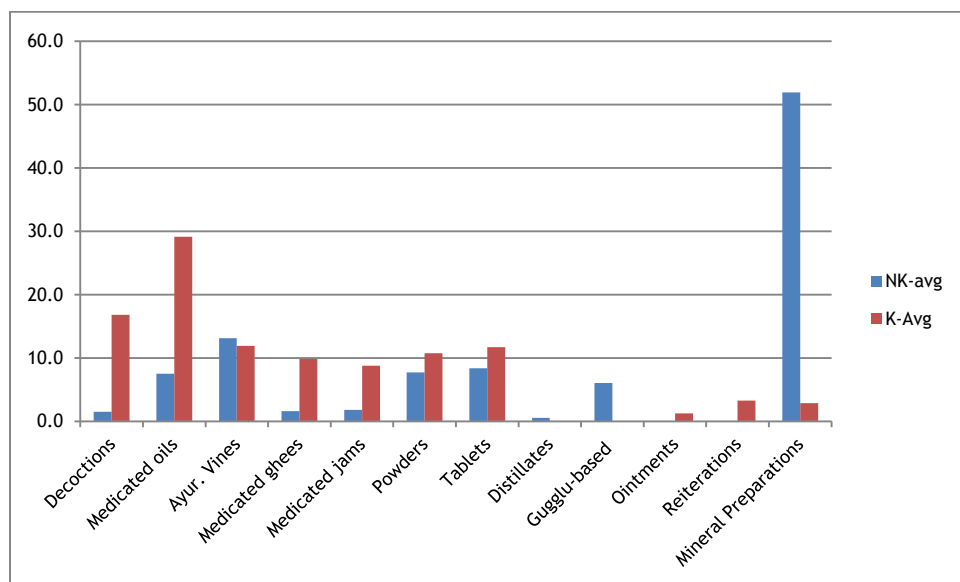
- iii. **Activity (*Karma*):** Five kinds of movements are listed, upward, downward, contraction, expansion and movement in general. All kinds of karmas rest on substances, and cause the things to which they belong to move.
- iv. **Generality (*Samanya*):** stands for the property that tends to make certain things to be regarded as similar; hence the common characteristic belonging to many individuals.
- v. **Particularity (*Vishesha*):** The presence of that what makes a thing diverse. *Vishesha* serves the purpose of differentiating one individual substance from another and also distinguishing itself from all other things. It is the basis of exclusion.
- vi. ***Samavaya*:** The inseparable relation of inherence is a relation by virtue of which two different things (*Padarthas*), such as substance and attribute, substance and movement, substance and *Samanya*, Substance and *Vishesha*, cause and effect, all appear so unified that they represent one whole inseparable reality, and appear to the onlooker as one and the same thing.

2. List of Karmas according to Charaka Samhita

1. Jeevaniya (Invigorators)	28. Chardinigrahana (Anti emetics)
2. Brimhaneeya (Nourishing drugs)	29. Thrusna Nigrahana (Thirst restraining drugs)
3. Lekhaniya (Reducing corpulence)	30. Hikkanigrahana (Anti- Hiccup)
4. Bhedhaneeya (Cathartics)	31. Pureeshasangraheeya (Anti - Diarrhoeal)
5. Sandhaneeya (Healers of wound)	32. Pureeshavirajaneeya (Bowel Anti- discoloring agents)
6. Deepaniya (Digestive stimulants)	33. Moothra Sangraheeya (Anti diuretics)
7. Balya (Strength Promoters)	34. Moothravivarjaneeya (Urinary anti- discoloring agents):
8. Varnya (Complexion Promoters)	35. Moothravirechaneeya (Diuretics)
9. Kantya (Useful for throat)	36. Kasahara (Antitussives)
10. Hrudya (Cardiac tonics)	37. Swaasahara (Broncho dilators)
11. Tripthighna (Removes the sense of Pseudo contentment)	38. Swayathuhara (Anti inflammatory / curatives of edema)
12. Arshoghna (Anti-haemorrhoidals)	39. Jwarahara (Anti pyretics)
13. Kushtaghna (Curatives of all skin diseases):	40. Sramahara (Fatigue relievers)
14. Kandooghna (Anti pruritic)	41. Dahaprashamana (Curatives of Burning syndrome)
15. Krimighna (Anti- infective)	42. Sheethaprashamana (Curatives of cold)
16. Vishaghna (Anti-toxic)	43. Udardaprashamana (Curatives of urticaria)
17. Sthanyajanana (Galactagogue)	44. Shoolaprashamana (Antispasmodics)
18. Sthanya shodhana (Galacto-purificator)	45. Angamardhaprasamana (Bodyache relievers)
19. Shukrajanana (Spermatopitics)	46. Sonithastapana (Blood purifiers)
20. Shukra Shodhana (Spermato purificator)	47. Vedanasthapa (Analgesics)
21. Snehopaga (Adjuvants of unction)	48. Sangnasthapanana (Restoratives of consciousness)
22. Swedhopaga (Adjuvants of fomentation)	49. Prajasthapanana (Anti-abortionificants or procreators)
23. Vamanopaga (Adjuvants of emesis)	50. Vayahasthapanana (Rejuvenators)
24. Virechanopaga (Adjuvants of purgation)	
25. Asthapanopaga (Adjuvants of decoction enema)	
26. Anuvasanopaga (Adjuvants of oil enema)	
27. Sirovirechaneeya (Adjuvants of for elimination of Doshas from the head)	

Appendix E: Differences in Pharmacopeia: North Indian Vs Kerala Ayurvedic manufacturers

	Categories of formulations in terms of % of the total classical pharmacopeia											
	Non-Kerala manufacturers				Kerala manufacturers							
	Dabur	Baidyanath	SDL	Avg	AVS	AVP	VR	Nagarjuna	Oushadhi	Sitaram	SNA	Avg
large	large	large		large	large	large	large	Large	medium	medium		
Decoctions	2	0	2	1.5	16	15	15	16	14	19	22	17
Medicated oils	10	13	0	7.5	28	37	26	26	36	27	24	29
Ayur. Vines	15	12	12	13.1	9	10	12	13	12	13	13	12
Medicated ghees	1	3	0	1.6	9	0	11	9	20	9	10	10
Medicated jams	5	0	1	1.8	9	8	7	11		9	8	9
Powders	7	10	6	7.7	8	8	18	7		10	13	11
Tablets	9	8	8	8.3	12	17	9	12	14	8	9	12
Distillates	0	1	0	0.5								
Guggulu-based	2	5	11	6.0								
Ointments								1				1
Reiterations					3				3			3
	100	100	100	100.0	100	100	100	100	100	100	100	100
Mineral Preparations	47	48	61	51.9	9	5	1	0	3	0	1	3
Total Classical	214	269	133	205.3	483	393	439	322	293	351	269	364



9.9 Appendix F: Pharmacological Attributes of Index Herbs

	<i>Rasa/ Taste</i>	<i>Guna/ Quality</i>	<i>Virya/ Potency</i>	<i>Vipaka/ Post-digestive effect</i>	<i>Karma/ Action</i>	<i>Source</i>
<i>Sida cordifolia (atibala) closest to Kerala's bala (See section 7.2.4)</i>	<i>Madhura (sweet)</i>	<i>Pichila (sticky), Snigdha (unctuous)</i>	<i>Sheeta (cold)</i>	<i>Madhura (sweet)</i>	<i>Ameliorate Pitta and Vata, anti-diarrheal, sperm promoting, complexion promoting, vigor promoting, and strength promoting</i>	API 2008 Part 1 Volume 3. Pp: 110-111
<i>Kattupadavalam/ Trichosanthes anguina</i>	<i>Tikta (bitter)</i>	<i>Laghu (light) Snigdha (unctuous)</i>	<i>Ushna (hot)</i>	<i>Katu (pungent)</i>	appetizer, digestive, germicidal, laxative, aphrodisiac	Sivarajan and Balachandran 1994, Pp.370-371
<i>Koovalam/ Aegle marmelos fruit pulp</i>	<i>Katu (pungent) Tikta (bitter) Kashaya (astringent)</i>	<i>Laghu (light) Rooksha (dry)</i>	<i>Ushna (hot)</i>	<i>Katu (pungent)</i>	<i>Appetizer, digestive... Alleviates Vata and Kapha, strengthening</i>	API 2008 Part 1 Volume 1 Pp. 35-36
<i>Koovalam/ Aegle marmelos Root</i>	<i>Madhura</i>	<i>Laghu (light)</i>	<i>Sheeta (cold)</i>	<i>Madhura (sweet)</i>	<i>Mutrala (diuretic), Tridosaghna, (alleviates tridoshas)</i>	API 2008 Part 1 Volume 3 Pp. 29-31
<i>Koovalam/ Aegle marmelos Stem bark</i>	<i>Tikta (bitter), Kashaya (astringent) Madhura (sweet)</i>	<i>Teekshna (sharp) Rooksha (dry) Laghu</i>	<i>Ushna (hot)</i>	<i>Katu (pungent)</i>	<i>Deepaniya, Kaphahara, Vatahara, Sangrahi, Pittakara, Vishaghna</i> <i>Appetizer, Alleviates Vata and Kapha, accumulative, anti-poison</i>	API 2008 Part 1, Volume 4 Pp.13-14
<i>Njavara/ Oriza sativa</i>	<i>Kashaya (astringent) Madhura (sweet) Anuras</i>	<i>Laghu (light) Snigdha (unctuous), Mridu (soft)</i>	<i>Sheeta (cold)</i>	<i>Madhura (sweet)</i>	<i>Hrdya, Pittahara, Ruchikara, Cardiac, alleviates Pitta, tasty, anti-poison, mildly increases Pitta and Kapha, fattening, good for voice</i>	API 2008 Part 1 Vol.3 Pp. 182-183

Appendix G : Traditional Healers certified by KIRTADS

KIRTADS certified senior healers

- **Shankaran Vaidyan**, a *Urali* Vaidyan in his 70s now had also a thriving consultation and he had even established two centers in two different places. Though highly reputed and extremely successful, he lost money due to mismanagement. A raw drug agent who used to supply medicinal material to him said, that in his hey days Shankar's weekly purchase would amount to around Rs 60,000 (\$1200) of raw material. His production cost was not that high, around Rs 15-16 a bottle of medicinal oil which he sold for Rs 30-40 "Not a bad margins, but you know about their (tribal people's) capability in handling money (implied incapability), so all the profit he made went down the drain".
- **Muthu Vaidyan**, a *Muthuvan Vaidyan's* residence is in interior Idukki, by the side of a state highway which does attract a regular clientele, but his practice is low key compared to the others. But he has widely traveled, worked in tribal camps made friends with mainstream Vaidyans and talks much about the exploitation of tribal medicinal knowledge by others
- **Eeswaran Kani Vaidyan** is a 55 year old tribal healer who practices in Njaraneeli, a small village between Vithura and Palode, on the inner layer of the main road. He was one of the faculty members in the KIRTADS training program and was designated as a Chief Tribal Healer. He has a waiting room with 20 seats, along with a pharmacy counter to dispense medicines. He is highly reputed and he gets a lot of patients from Trivandrum city. An aluminum framed glass fabricated cubicle for the doctor with a hip modern ceiling. Local people are used to cars and jeeps bringing wealthy plains patients to their village. During the interview, a patient came in a hired taxi from Trivandrum, that would have cost them Rs. 600 (\$12) for the transport.
- **Appukkuttan Kani Vaidyan** is perhaps the only tribal healer with a full-fledged inpatient hospital. This 83 year old who was designated as Chief Tribal Healer in the KIRTADS program was exposed to medicine from the age of 7 collecting herbs for his grandfather was a *Plathi* (officially designated tribal healer). His hospital is housed in a modern concrete building with tiled flooring. The nine bed hospital built with a grant of 4 lakh from government has 9 beds and two steam rooms and one *Dharapathi*. He has two three people to assist him, run the steam bath make medicines etc. he also get help in collecting medicines

KIRTADS trained young healers

- Among the young healers, the most successful is **Rajesh Vaidyan** from Kuruchiyar who joined the program after a 12th standard education. He gets reportedly around 300 visitors an average on a day. The clinic had 40 pluckers to make medicines and the herbs were collected from around the forest. When I asked the pharmacy assistant if I can take a photograph of the premises, "you can take photos for yourself, but please don't publish it anywhere" and then he explained, "We are already struggling to deal with the crowd and we really don't want more people to come".
- **Mokshadayakan Vaidyan** is a KIRTADS alumni, a 33 year old Kani practicing in Vithura town near Trivandrum. He moved from an interior location to the town owing to popular demand to near town. Besides prescribed medicines, he has also some oils, herbal juices and decoctions for sale. He also has a traditional steam bath outside his house for which he charge 200 per session. He puts around 66 herbs into the water; the steam is made to pass through for about 20 to 30 minutes during the treatment based on the health of the patient.

Appendix H: Kattupadavalam Farming: Three Vignettes

1. Collective farming of *kattupadavalam*: Lakkam Kudi, a Muthuvan hamlet

Lakkam Kudi is located on the top of a hill which is 2000 ft. vertical climb from the Lakkam junction on the interstate highway between Munnar and Marayur. The community consists of 46 families of Muthuvan tribe who are collectively farming *kattupadavalam*. They are unfortunate to live in a protected sanctuary where the only forest products they are able to access is wild yam and honey. Being located right in the middle of a protected forest, they are not involved in MFP collection. The only cash bringing source was an aromatic medicinal grass, a native of this habitat called *Inchipullu* i.e., Citronella (*Cymbopogon flexobus*). Though it is used in Ayurvedic medicine, its extract is more in demand from the cosmetic industry. During harvest they distil around 2 to 2.5 liters of the oil per day which they sell to the GSCS at a price of Rs 550 (\$11) per liter.

They are familiar with *kattupadavalam* as a forest creeper, but it was not part of their own pharmacopeia. The MPSC had given them the saplings and the know-how, motivating them to try it out. They have been told to avoid using any fertilizer or pesticide. Some of them own cows, so they use the dung to fertilize. All they had to do was to provide some support for the creepers to climb. They harvest the whole plant 1.5-2 ft from above the root, during the month of January, after the plant fruits and ripen enough for replanting. An agent from the society comes with a pickup truck to collect harvested material. In the last harvesting season (in the winter of 2008) they got 50,000 rupees from 500 plants. Given the distance from the forest and the ease of cultivation, it works out more profitable to grow *kattupadavalam* than collect. They would have to spend one whole day wandering around the forest just to collect 10 kilograms.

Krishnan Vaidyan, now in his early 70s earned his livelihood as a watcher in the forest. He gives an overview of the health care resort pattern of the community. They do use medicinal herbs for home remedies. There are also two traditional vaidyans left in the hamlet who treat minor complaints like stomach upset, cold, mild fever, sprain and so on. For everything else they go to the hospital. Earlier vaidyans would treat fractures, but not anymore. The Tata Tea Co. which employs a number of workers from this community provide free medical facility to the whole community. He said, “now our medicine does not have any effect because of the effects of English medicine”.

2. Profile of an individual *kattupadavalam* farmer

Ayyappan, a young Muthuvan who lives in outskirts of Marayur village. Being a mason by profession, he earns double the wages of an unskilled wage laborer. He is therefore more well to do than the average tribal, and owns four small parcels of land, each 0.1 to 0.15 acres. He used to cultivate some tubers and vegetables on the land in the hill slopes, till the collection agent of the society introduced him to *kattupadavalam*. He was familiar with the plant, having been to the forest for a number of times to collect. Three years ago, (i.e. sometime in 2005-2006) he brought a few seeds that he not only planted in his own property but also in a few common spaces like the dry bed of a seasonal brook. He is delighted with the plant's success. Without any additional work or input, he managed to earn Rs 20,000 (\$400) from the total harvest in a season, equivalent to his two months income from masonry work. Within three years he has found some of the plants to be more luxuriant, he proudly shows off the seeds that he has saved from those plants to make his next crops more successful.

3. Profile of a non-tribal medicinal plant farmer cum forest produce collection agent

I met Muthaya when he came to sell *kattupadavalam* to the Devikulam GSCS. His stock included some of his farm produce and also material collected from other farmers. Being a large farmer who owned a Jeep, which he also used for running rental taxi services he automatically became a collection agent for farmers in the remote village of Thalayar. His farm has a veritable collection of medicinal plants that naturally grow in the region. He has been involved in the collection of medicinal plants since the

year 1976. He grew medicinal plants earlier in small numbers like many other farmers with land, for household purpose. But he eventually realized that it made sense to grow plants that fetched a good price and had a long harvesting window. This was possible only because as a trader he was in touch with the market and knew the nature and source of demand. He would limit or expand the space for farming depending on market fluctuations. Two medicinal plants he found most profitable were *Chittaratha* (*Alpinia calcarata/galangal*) and *Vayambu* (*Acorus calamus*). Both plants were dispersed randomly in his multi-crop farm, not occupying much space but ready to spread further if the market demands. Last year he harvested around 300 kilograms of *Chittaratha* for which he got a price of Rs 42 per kg. He also harvested a ton of *Vayambu* for Rs 15-20. This year there was no market for either of them. Talking about *kattupadavalam* he said, “It is the easiest plant to grow, though it’s germination rate is poor. From 1000 seeds, you get 100 plants of which 25 will survive. But from those 25 plants, I got 120 kg. dry matter, sold at Rs. 90 a kilo. Though the income may not be as high as cash crops like cardamom, growing the plant hardly needs any labor.”

Appendix I: Sample Ayurveda Wellness Package

Rejuvenation Package: Ayurvedashram, Trichur

Description	7 Days	14 Days	21 Days	28 Days
Abhyangam	3	3	5	8
Steam bath	1	1	1	1
Ksheera Dhara	2	2	2	2
PPS	3	3	6	6
Thakradhara	1	1	3	3
Shirodhara		3	3	7
Kati/Snehavasti		3	3	2
Avagaham	2	2	5	5
Njavaratheppu	3	3	3	3
Ksheeradhoomam	1	1	1	1
Kativasthi		3	3	2
Njavarakizhi		3	5	5
Pizhichil		3	3	7
Dhanyamla Dhara			2	2
Herbal Facial	1	1	1	1
Virechanam		1	1	1

Note: These treatments are subject to change after direct consultations with our physicians.

Our all inclusive cost including pickup / drop from/to Kochi airport plus accommodation and food on single occupancy as also on twin sharing basis for one person are as under:

	7 Days	14 Days	21 Days	28 Days
Single Occupancy	US \$ 800	US \$ 1300	US \$ 1800	US \$ 2300
Twin Sharing	US \$ 650	US \$ 950	US \$ 1200	US \$ 1400

Appendix J Medical infrastructure in Kerala and India

1. Public Medical Institutions in Kerala

		Institutions		Beds		Patients treated in 2006 (in lakhs)		Patients treated in 2007(in lakhs)	
		2006	2007	2006	2007	IP	OP	IP	OP
1	Allopathy	1279	1279	45405	45553	23.0	461.77	20..27	468.11
2	Ayurveda	871	871	3940	4020	0.57	209.9	0.50	222.47
3	Homoeopathy	561	561	1170	1170	0.21	127.6	0.25	135.33
	Total	2711	2711	50515	50743	23.78	799.27	21.02	825.91

Source: Government Survey Data, from Directorate of Ayurveda, Trivandrum.

2. Private Medical Institutions in Kerala

		1986	1995	2004
1	Modern Medicine	3565	4288	4825
2	Ayurveda	3925	4922	4332
3	Homeopathy	2078	3118	3226
4	Others	95	290	535
	Total	9663	12618	12918

Source: Economic Review of Kerala, 2009

3. Ayurvedic institutions in India: Statewise Statistics

S. No.	States/UTs/ Others	Projected Population as on 1.3. 2007 (in 000) #	Number of Hospitals, Beds and Dispensaries			% Distribution				Average number of availability per one crore population			Average Number of Beds per Hospital
			Hosp.	Beds	Disp.	Pop ⁿ	Hosp.	Beds	Disp.	Hosp.	Beds	Disp.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	Andhra Pradesh	81,315	39	2252	1074	7.2%	1.2%	3.4%	5.0%	4.8	276.9	132.1	57.7
2	Arunachal Pradesh	1,185	4	120	53	0.1%	0.1%	0.2%	0.2%	33.8	1012.7	447.3	30.0
3	Assam	29,471	8	302	483	2.6%	0.2%	0.5%	2.3%	2.7	102.5	163.9	37.8
4	Bihar	92,340	29	2475	634	8.2%	0.9%	3.7%	3.0%	3.1	268.0	68.7	85.3
5	Chhattisgarh	23,255	14	595	698	2.1%	0.4%	0.9%	3.3%	6.0	255.9	300.2	42.5
6	Delhi	16,563	20	1159	289	1.5%	0.6%	1.7%	1.4%	12.1	699.8	174.5	58.0
7	Goa	1,581	3	77	138	0.1%	0.1%	0.1%	0.6%	19.0	487.0	872.9	25.7
8	Gujarat	55,617	69	2778	732	4.9%	2.1%	4.2%	3.4%	12.4	499.5	131.6	40.3
9	Haryana	23,410	17	1215	513	2.1%	0.5%	1.8%	2.4%	7.3	519.0	219.1	71.5
10	Himachal Pradesh	6,488	30	597	1134	0.6%	0.9%	0.9%	5.3%	46.2	920.2	1747.8	19.9
11	Jammu & Kashmir	11,974	5	375	590	1.1%	0.2%	0.6%	2.8%	4.2	313.2	492.7	75.0
12	Jharkhand	29,597	4	262	206	2.6%	0.1%	0.4%	1.0%	1.4	88.5	69.6	65.5
13	Karnataka	56,775	183	10706	721	5.0%	5.5%	16.1%	3.4%	32.2	1885.7	127.0	58.5
14	Kerala	33,902	197	6338	1347	3.0%	5.9%	9.5%	6.3%	58.1	1869.5	397.3	32.2
15	Madhya Pradesh	68,046	64	3216	1632	6.0%	1.9%	4.8%	7.7%	9.4	472.6	239.8	50.3
16	Maharashtra	105,511	114	11971	506	9.3%	3.4%	18.0%	2.4%	10.8	1134.6	48.0	105.0
17	Manipur	2,594	11	215	11	0.2%	0.3%	0.3%	0.1%	42.4	828.8	42.4	19.5
18	Meghalaya	2,504	8	80	23	0.2%	0.2%	0.1%	0.1%	31.9	319.5	91.9	10.0
19	Mizoram	968	1	14	1	0.1%	0.0%	0.0%	0.0%	10.3	144.6	10.3	14.0
20	Nagaland	2,160	1	10	14	0.2%	0.0%	0.0%	0.1%	4.6	46.3	64.8	10.0
21	Orissa	39,483	15	683	1303	3.5%	0.5%	1.0%	6.1%	3.8	173.0	330.0	45.5
22	Punjab	26,288	20	1674	655	2.3%	0.6%	2.5%	3.1%	7.6	636.8	249.2	83.7
23	Rajasthan	63,549	117	1301	3760	5.6%	3.5%	2.0%	17.7%	18.4	204.7	591.7	11.1
24	Sikkim	587	1	10	5	0.1%	0.0%	0.0%	0.0%	17.0	170.4	85.2	10.0
25	Tamil Nadu	65,838	312	3744	585	5.8%	9.4%	5.6%	2.7%	47.4	568.7	88.9	12.0
26	Tripura	3,466	2	20	148	0.3%	0.1%	0.0%	0.7%	5.8	57.7	427.0	10.0
27	Uttar Pradesh	187,380	1993	12544	1878	16.6%	60.0%	18.8%	8.8%	106.4	669.4	100.2	6.3
28	Uttarakhand	9,358	12	487	536	0.8%	0.4%	0.7%	2.5%	12.8	520.4	572.8	40.6
29	West Bengal	86,835	20	1234	1528	7.7%	0.6%	1.9%	7.2%	2.3	142.1	176.0	61.7
30	A & N Islands	403	4	30	20	0.0%	0.1%	0.0%	0.1%	99.3	744.4	496.3	7.5
31	Chandigarh	1,037	2	145	11	0.1%	0.1%	0.2%	0.1%	19.3	1398.3	106.1	72.5
32	D & N Haveli	255			4	0.0%			0.0%			156.9	
33	Daman & Diu	183			1	0.0%			0.0%			54.6	
34	Lakshadweep	67			3	0.0%			0.0%			447.8	
35	Puducherry	1,058	1	10	42	0.1%	0.0%	0.0%	0.2%	9.5	94.5	397.0	10.0
	Total	1,131,043	3320	66639	21278	100%	100%	100%	100%	29.4	589.2	188.1	20.1

Source: Annual Report, 2008, Department of Ayush, New Delhi.

Appendix K Ayurvedic Conferences and associated Ayurvedic Industrial Expositions



International conference on Ayurveda and Arogya Expo in Coimbatore, Aug. 21-25th 2008



3rd World Ayurveda Congress and Ayurveda industrial exposition in Jaipur, 16-21 December 2008



Global Ayurveda Business Meet and Industrial Exposition in Kochi, 25-26th March, 2010



Arogya Conference and Industrial Exposition, Thrissur, 11th-15th February, 2009



Kerala, 4th World Ayurveda Congress and Industrial Exposition in Bangalore, 9-13th Dec. 2010



Global Ayurveda Festival, Kerala 9th-14th Feb. 2012 in Trivandrum, Kerala.

BIBLIOGRAPHY

- Abraham, Aby and Jayadevan, A. P.
2012 The right oil. Enterprise and Economic Update Kerala. January 24.
- Abraham, S.
2012 Sustainability of Medicinal Plants in Kerala Economic Considerations in Domestication and Conservation of Forest Resources. Ph.D. Dissertation, Department of Applied Economics, Cochin University of Science and Technology.
- AFI(Ayurvedic Formulary of India)
2008 Part 1 and 2. E-Book Version 1.0. New Delhi: Department of Ayush, Ministry of Health and Family Welfare, Government of India.
- Agnivesh, C. R.
2003 Editorial: in Search of Research. KAPL Vaidyam 1(2):2.
2005 Editorial: Forms and Formulations. KAPL Vaidyam 3(1&2):2.
2008 Diabetes, the outlook of Ayurveda. November 2008, Oushadham 9(11):10.
2011 Commercial Claims: The Inside Story. Punarjani 1(1): 83-91.
- Ajayan
2010 In the Monsoon, Ayurvedic Porridge Is All Rage in Kerala. Livemint, August 2.
- Ajit, S.
2007 Ayurveda in East and West Today. Global Ayurveda 2(4)
- Alexander, C. A., and M.K. Shivaswamy
1971 Traditional Healers in a Region of Mysore. Social Science and Medicine 5 (6): 595-601.
- Alter, Joseph
1999 Heaps of Health. Metaphysical Fitness: Ayurveda and the Ontology of Good Health in Medical Anthropology. Current Anthropology 40(S1):S43-S66.
- AMAI
2009 Memorandum. Apta 16(3).
2010 Memorandum. Apta 16(10).
- Anand, Rejith
2010 Tozhilavasarankal Kurayunna Ayurveda Mekhala [Ayurveda sector facing unemployment] 17(4):15.
- Andreoni, J.
1988 Privately Provided Public Goods in a Large Economy: The Limits of Altruism. Journal of Public Economics 35(1):57-73.
- API (Ayurvedic Pharmacopeia of India)
2008 Part 1(Volumes 1 To 5). E-Book Version 1.0. New Delhi: Department of Ayush, Ministry of Health and Family Welfare, Government of India.
- Appadurai, Arjun, ed.
1988 The Social Life of Things: Commodities in Cultural Perspective. Cambridge: Cambridge University Press.

- Applbaum, K.
2005 *The Anthropology of Markets*. In *A Handbook of Economic Anthropology*, James G. Carrier, ed. Pp. 275-289. Massachusetts: Edward Elgar Publishing.
- Aravindakshan, S.
2011 *Evolution of Forest Policies in India and the Emergence of Village Forest Councils as Rural Institutions: A Case Study on Kerala in India*. *International Journal of Humanities and Social Science* 1(6): 56-62.
- Arnold, David, ed.
2000 *Science, Technology, and Medicine in Colonial India*. Vol. 5. Cambridge: Cambridge University Press.
- Asianet Television
2012 "Karkidaka Kanji For Students in A Schools", in Program segment ' Kettathum Kandathum'. July 28.
- AVS (Arya Vaidya Sala)
1905 Kseerabala Thailam 100 Avartichathu (Ksheerbala Oil Potentiated 100 Times). *Dhanwantari* 2(5):86
2003 *Angeekritha deelermarodu (To the Authorized Dealers)*. *Satabdi Smaranika [Centennial Souvenir]*: Volume 3:225-226. Kottakal: Arya Vaidya Sala.
2005 Interview of P. K. Warriar. *Satabhisheka Smaranika [Centennial Souvenir]*, Pp. 260-266. Kottakal: Arya Vaidya Sala.
- Ayu:care 2012. *Lavana Thailam*. www.Youtube.com. Date Accessed: 10/15/2012
- Ayurbhishak
2012 <http://ayurbhishak.wordpress.com/2011/06/01/%e2%99%a3-ayurvedic-professionals-ayush-units-of-kerala-demand-action-against-ayur-kizhi-quacks/>
- AYUSH
2011 *AYUSH in India 2011*. New Delhi: Department of Ayush, Government of India.
- Baidyanath
2012 <http://www.baidyanath.com>. Date Accessed: 10/31/2012
- Bala, Poonam
1991 *Imperialism and Medicine in Bengal: A Socio Historical Perspective*. New Delhi: Sage Publications.
2012 "Nationalizing" Medicine: The Changing Paradigm of Ayurveda in British India. In *Contesting Colonial Authority: Medicine and Indigenous Responses in Nineteenth-and Twentieth-Century India*. in Poonam Bala, ed. Pp.1-12. Maryland: Lexington Books.
- Balachandran, Premalatha, and Rajgopal Govindarajan
2007 *Ayurvedic Drug Discovery*. *Expert Opinion*. *Drug Discovery* 2(12):1631-1652.
- Banerjee, Madhulika
2002 *Power, Culture and Medicine: Ayurvedic Pharmaceuticals in the Modern Market*. *Contributions to Indian Sociology* 36 (3):435-67.
2009 *Power, Culture and Medicine: Ayurvedic Pharmaceuticals at Home and in the World*. New Delhi: Orient BlackSwan.
- Barsh, L. Russel
1997 *Epistemology of Traditional Healing Systems*. *Human Organization* 56(1): 28-37.

- Barsh, R.
1997 The Epistemology of Traditional Healing Systems. *Human Organization* 56(1):28-37.
- Basham, A. L.
1976 The Practice of Medicine in Ancient and Medieval India. *In Asian Medical Systems: A Comparative Study*. Charles Leslie, ed. Pp. 18-43. Berkeley: University of California Press.
- Bell, S. E., and A. E. Figert,
2012 Medicalization and pharmaceuticalization at the intersections: Looking backward, sideways and forward. *Social Science & Medicine* 75(5): 775-783.
- Bhagwat, S. A., C. G. Kushalappa, P. H. Williams, and N. D. Brown
2005 The Role of Informal Protected Areas in Maintaining Biodiversity in the Western Ghats of India. *Ecology and Society* 10(8): 5-8.
- Bhasin, Kamal
2010 Original Ayurveda: The Road to Progress in Europe. Paper Presented in 4th World Ayurveda Congress and Ayurveda Exposition, Bengaluru, December 9-13.
- Bhattacharya, Bhaswati
2011 Elucidating the Nanomaterialistic Basis for Ayurvedic Bhasmas Using Physicochemical Experimentation. *Journal of Biomedical Nanotechnology* 7(1): 66-67.
- Bhuyan, Rituparna
2006 C-Dac's Ayurvedic Prescription Finds Global Takers. *The Indian Express*, November 15.
- Biswas, Soutik
2010 Kerala's Love Affair With Alcohol. *BBC News*, March 12.
http://news.bbc.co.uk/2/hi/south_asia/8557215.stm.
- Bode, Marten
2006 Taking Traditional Knowledge To the Market: The Commoditization of Indian Medicine. *Anthropology and Medicine* 13(3):225-36.
2008 Taking Traditional Knowledge To the Market. *The Modern Image of the Ayurvedic and Unani Industry 1980-2000*. Hyderabad: Orient Blackswan.
- Bright, K.
1998 The Traveling Tonic: Tradition, Commodity, and the Body in Unani (Greco-Arab) Medicine in India. Ph.D. Dissertation, Department of Anthropology, University of California, Santa Cruz.
- Brown, Michael F.
2003 *Who Owns Native Culture?* Cambridge MA: Harvard University Press.
- Burghart, R.
1988 Penicillin: An Ancient Ayurvedic Medicine. *In The Context of Medicines in Developing Countries: Studies in Pharmaceutical Anthropology*. Van Der Geest and S. R. Whyte, eds. Pp: 289-98. Dordrecht : Kluwer Academic Publishers.
- Business India
2004 Scaling New Heights. July 5-18.
- Chatterjee, Purvita
2002 Ayurvedic Co Baidyanath Forays Into FMCG Sector. *Business Line*. Tuesday, February 12.
- Cleetus, Burton
2007 Subaltern Medicine and Social Mobility: The Experience of the Ezhava in Kerala. *Indian Anthropologist* 37(1): 147-172.

- Cohen, J. P., C. Paquette, and C. P. Cairns
2005 Switching Prescription Drugs to Over the Counter. *British Medical Journal* 330(7481):39-41.
- Conrad, Peter, and Valerie Leiter
2004 Medicalization, Markets and Consumers. *Journal of Health and Social Behavior* 45:158-176.
- Craig, David
2000. *Familiar Medicine: Everyday Health Knowledge and Practice in Today's Vietnam*. Honolulu: University of Hawaii Press.
- Dabur
2010 Dabur At a Glance. www.dabur.com. Date Accessed: 05/15/2010
- Dasgupta, Debarshi
2008 Change in the Roots: GM Herbs Knock on the Doors of Ayurveda. *Outlook India*, November 10. <http://www.outlookindia.com/article.aspx?238883>.
- Datta, Jyothi
2011 Quick' Cures Luring Patients with Money-Back offers. *Business Line*. July 12.
2008 Sugar-Free Biscuits, Chyawanprash Come Under Health Scanner. *Business Line*, August 11.
- Davies, N. V.
1995 Microfine powder answer to raw material shortage in Ayurveda. *Indian Express*, August 26.
- Department of Economics and Statistics
2004 Report on Private Medical Institutions in Kerala. Trivandrum: Department of Economics and Statistics, Government of Kerala.
- Devi, Vasumathy
2010 Milestones of Medical Practices in Kerala: A Curtain Raiser. *Annual Souvenir, Trivandrum Medical College Alumni Association* 3 (2):9-23.
- Dewan, Neha
2009 Anti-Obesity and Fitness Market in India. *Economic Times*, August 2.
- Dhar, Aarti
2012 Going Back to Nature. *The Hindu*, August 12. <http://www.thehindu.com/health/medicine-and-research/going-back-to-nature/article3754255.ece>.
- Dominic, Jose
2010 Talk Presented At Global Ayurveda Business Meet, Kochi, March 25-26.
- Down To Earth
1997 Drinking Success. *Down to Earth*, July 30. <http://www.downtoearth.org.in/node/24149>.
- Dubey, N. K., R. Kumar, and P. Tripathi
2004 Global Promotion of Herbal Medicine: India's Opportunity. *Current Science* 86(1):37-41.
- Dunn, F. L.
1976 Traditional Asian Medicine and Cosmopolitan Medicine As Adaptive Systems. *In Asian Medical Systems: A Comparative Study*, Charles Leslie, ed. Pp. 133-158. Berkeley: University of California Press.
- Dutt, Nripendra Kumar
1965 *Origin and Growth of Caste in India, Volume II: Caste in Bengal*. Calcutta: Firma KLM.

Editorial

2010a Oushadham, April.
2010b Oushadham, June.

Ernst, Waltraud, ed.

2002 *Plural Medicine, Tradition and Modernity:1800-2000*. London: Routledge.

Etkin, Nina L.

2008 *Edible Medicines: An Ethnopharmacology of Food*. Arizona: University of Arizona Press.

Farquhar, Judith

1994 Eating Chinese Medicine. *Cultural Anthropology* 9:471-497.

Ferguson, R. Brian, and Neil L. Whitehead. eds.

1992 *War in the Tribal Zone: Expanding States and Indigenous Warfare*. Santa Fe NM: School of American Research Press.

Financial Chronicle

2012 Tata Gives a Facelift To Ayurveda, Launches International Helpline. April 16.

Financial Express

2003 Zandu Pharmaceutical's New Prescription. *The Financial Express*. Jan 25, 2003. Zandu, 2003.

Zandu Pharmaceutical's New Prescription, *The Financial Express*, Jan 25, 2003.

<http://www.financialexpress.com/news/zandu-pharmaceuticals-new-prescription/71394/0>.

2008 Zandu Sells Stakes to Emami. *The Financial Express*. Oct 17, 2008.

<http://www.financialexpress.com/news/zandu-sells-stake-to-emami/374306/>

Francis, P. A.

2009 Advertising Excesses. *Pharmabiz*, December 23.

Franke, Richard W., and Barbara H. Chasin

1999 Is the Kerala Model Sustainable? *In Rethinking Development: Kerala's Development Experience Vol 1*. M. A. Oommen ed. Pp118-148. New Delhi: Institute of Social Science.

FRLHT (Foundation For Revitalization of Local Health Traditions)

2011 Medicinal Plant Species of Conservation Concern For Kerala. *Envis Newsletter on Medicinal Plants* 3(1-4). <http://envis.frlht.org/newsletters/envis20newsletter20latest20apr11.pdf>.

Garett, Hardin

1968 The Tragedy of the Commons. *Science* 162(3859):1243-1248.

Geest, Sjaak Van Der

2006 Anthropology and the Pharmaceutical Nexus. *Anthropological Quarterly* 79(2):303-14.

Gevitz, N.

1999 Pray Let the Medicines Be Good: The New England Apothecary in the Seventeenth and Early Eighteenth Centuries. *Pharmacy in History* 41(3):87-101.

Ghosal, S., R. B. P. S. Chauhan, and R. Mehta

1975 Alkaloids of *Sida cordifolia*. *Phytochemistry* 14(3):830-832.

Govind, Biju.

2008 GCC residency cap may force lakhs to return. *The Hindu*, August 19.

Guha, Ramachandra

1983 Forestry in British and Post-British India: A Historical Analysis 1882-1896. *Economic and Political Weekly* 18(44):1882-1896.

- Gupta, B.
1976 Indigenous Medicine in Nineteenth and Twentieth Century Bengal. *In Asian Medical Systems: A Comparative Study*, Charles Leslie, ed. Pp. 368-377. Berkeley: University of California Press.
- Hall, K. R.
1978 International Trade and Foreign Diplomacy in Early Medieval South India. *Journal of the Economic and Social History of the Orient* 21(1):75-98.
- Hankey, Alex
2005 A Test of the Systems Analysis Underlying the Scientific Theory of Ayurveda's Tridosha. *Journal of Alternative and Complementary Medicine* 11(3):385-390.
- Harilal, M. S.
2009 Commercializing Traditional Medicine: Ayurvedic Manufacturing in Kerala. *Economic and Political Weekly* 44(16): 45.
2008 Home to Market: Responses, Resurgence, and Transformation of Ayurveda From 1830s To 1920. Working Paper, 408. Trivandrum: Centre for Development Studies.
2010 Ayurvedic Manufacturing Industry in Kerala. Sarbrucken: VDM Verlag Dr Muller.
- Heimsath, C. H.
1978 The Functions of Hindu Social Reformers—With Special Reference To Kerala. *Indian Economic and Social History Review* 15 (1):21-39.
- Himalaya
2012 <http://www.himalayahealthcare.com/abouthimalaya/index.htm>. Date Accessed 01/11/2012
- Hindu, The
2002 Is Ayurveda Turning Over the Counter? October 31.
2008 Quality Control Sought for Oushadha Kanji. July 18.
<http://www.thehindu.com/2008/07/18/stories/2008071854390700.htm>.
2009 Milma, Eastern Are Most Popular Brands in Kerala. January 28.
<http://www.thehindubusinessline.in/2009/01/29/stories/2009012950691900.htm>.
2012 Karkidakam - The Month For Rejuvenation. July 18.
2009 Swaminathan for Law on Sea Farming Rights. January 29.
<http://www.hindu.com/2009/01/29/stories/2009012955180400.htm>.
- Hindustan Times
2011 Ayurveda Medicines Lead OTC Ads in Print. *Hindustan Times*, December 26.
- Hsu, Elisabeth
1999 *The Transmission of Chinese Medicine*. Cambridge: Cambridge University Press.
- Hymavathi, P.
1993 Religion and Popular Medicine in Medieval Andhra. *Social Scientist* 21(1-2):34-47.
- IIFL
2004 Interview with Pulin Shroff, Managing Director, Charak Pharma. December 7.
<http://www.indiaonline.com/research/leaderspeak/interview-of-mr.-pulin-shroff-managing-director-charak-pharma-pvt.-ltd/12660956>.
- Jagdale, Sachin
2007 Charak Samhita. *Express Pharma*, October 1-15.
2009 Genuinely Green? *Express Pharma*, February 16-28.

- Jalaja, S.
2009 Essence of Ayurveda. Interview with Vaidyabhushanam Raghavan Thirumulpad. Oushadham 10(12):3-4.
- Jayakumar, P. B.
2008 Ayurveda is Being Hijacked By Neutraceuticals Lobby. Interview With Dr. D Ramanathan, General Secretary Ayurvedic Medicine Manufacturers Organization of India (AMMOI), Pharmabiz, September 12.
- Jayan, T. V.
2008 Herbal Pills - Pleasure or Pain? The Telegraph, November 23.
- Jeannotat, Françoise
2008 Maharishi Ayur-Ved: A Controversial Model of Global Ayurveda. In *Modern and Global Ayurveda: Pluralism and Paradigm*. Dagmar Wujastyk and Frederick M. Smith, Eds. Pp. 285- 307. New York: SUNY Press
- Jhaveri, Bhavika
2006 That Health Feeling. Express Hospitality, November 1-15.
(<http://www.expresshospitality.com/20061115/futureofhospitalityoperations12.shtml>)
- Joseph, A., V. R. Kutty, and C. R. Soman
2000 High Risk for Coronary Heart Disease in Thiruvananthapuram City: A Study of Serum Lipids and Other Risk Factors. *Indian Heart Journal* 52(1): 29-35.
- Joshi, Sopan
2003 Super Market. *Down to Earth*, February 28.
- Jyothis, T., and V.K. Janardhanan
2009 Service Quality in Health Tourism: An Evaluation of the Health Tourism Providers of Kerala (India). *South Asian Journal of Tourism and Heritage* 2(1):77-82.
- Kabir, M
2002 Growth of Service Sector in Kerala: A Comparative Study of Travancore and Malabar 1901-1951. Ph.D. Dissertation, University of Kerala. (Cited in Harilal 2008).
- KAL (Kerala Ayurveda Limited)
2009 Annual Report 2008-2009. Aluva: Kerala Ayurvedic Pharmacy Limited.
- Kamat, Gauri
2008 Trouble Brewing. *Businessworld*, March 11-17.
- Kamat, V. R., and M. Nichter
1998 Pharmacies, Self-Medication and Pharmaceutical Marketing in Bombay, India. *Social Science and Medicine* 47 (6): 779-94.
- Kamat, Vinay
2007 The Strength of Santur. *Business Line*, July 26.
- Kamboj, V. P.
2000 Herbal Medicine. *Current Science* 78(1):5-39
- Kannan, K. P.
2005 Kerala's Turnaround in Growth: Role of Social Development, Remittances and Reform. *Economic and Political Weekly* 40(6) 548-554.

- Kannan, K. P., and Hari, K. S.
2002 Kerala's Gulf Connection: Emigration, Remittances and Their Macroeconomic Impact 1972-2000. Working Paper, No. 328. Trivandrum: Centre for Development Studies.
- Kapil, Iris
1988 Doctors Dispensing Medications: Contemporary India and 19th Century England. *Social Science and Medicine* 26(7): 691-699.
- Kerala Ayurveda Limited
2011 Traditional Formulations-1. *Kerala Ayurveda Vaidyam* 4(1-2):24
- Kerala State Planning Board
2006 Economic Review. Trivandrum: Kerala State Planning Board.
<http://www.spb.kerala.gov.in/index.php/economic-review/er-2006.html>
- 2010 Economic Review. Trivandrum: Kerala State Planning Board.
<http://www.spb.kerala.gov.in/index.php/economic-review/er-2010.html>
- Khan, S.
2006 Systems of Medicine and Nationalist Discourse in India. *Social Science and Medicine* 62(11):2786-97.
- Kloppenburg, Jack Ralph
2004 *First the Seed: The Political Economy of Plant Biotechnology: 1492-2000*. Wisconsin: University of Wisconsin Press.
- Kogut, Bruce, and Anca Metiu
2001 Open Source Software Development and Distributed Innovation. *Oxford Review of Economic Policy* 17(2) 248-264.
- Kohl, K. R.
2006 Current Scenario of Ayurvedic Industry and the Way Forward. *The Indian Pharmacist*, September.
<http://medind.nic.in/haa/t06/i1/haat07i1p71.pdf>
- Kopytoff, I.
1986 The Cultural Biography of Things: Commoditization As A Process. *In The Social Life of Things: Commodities in Cultural Perspective*. Arjun Appadurai, ed. Pp. 64- 94. Cambridge: Cambridge Univ. Press.
- Krishnankutty, Gait
2001 *A Life of Healing: A Biography of Vaidyaratnam P. S. Varrier*. New Delhi: Penguin Books India.
- Kudlu, C., and G. D. Stone.
2013 The Trials of Genetically Modified Food: Bt Eggplant and Ayurvedic Medicine in India. *Food, Culture and Society: An International Journal of Multidisciplinary Research* 16(1): 21-42.
- Kumar, Anil
2001 The Indian Drug Industry under the Raj, 1860-1920. *In Health, Medicine and Empire: Perspectives on Colonial India*. Biswamoy Pati and Mark Harrison eds., Pp 356-85. New Delhi: Orient Longman.
- Kumar, Anil
2003 Export Potentials of Ayurvedic Health Care Delivery. *KAPL Vaidyam* 1(1):2.
- Kumar, Deepak
2000 Science and Society in Colonial India: Exploring an Agenda. *Social Scientist* 28(5-6):24-46.
- Kumar, Krishna
2005 Rationality of Ayurvedic Pharmaceutical Procedures. *KAPL Vaidyam* 3(1&2):17-23.

- Kumar, M. K. S.
2012 Keralites prefer allopathy to ayurveda, says survey. Times of India. February 7.
- Kunnathoor, Peethaambaran
2012 Private Ayurveda Medical Colleges in Kerala Face Severe Shortage of Teaching Staff. Pharmabiz, January 27. <http://pharmabiz.com/newsdetails.aspx?aid=67210&andsid=1>. Accessed 11/01/2012
- Kurup, K. Balakrishna
1996 Tantras and Their Impact on Indigenous Medicines. Samagra, Souvenir of 6th World Congress on Holistic Life & Medicine, 5-7 January, Kozhikode.
- Kutumbiah, P.
1999 Ancient Indian Medicine. Hyderabad: Orient Longman.
- Lafuente, Antonio and Nuria Valverde
2004 Linnaean Botany and Spanish Imperial Biopolitics. *In Colonial Botany: Science, Commerce, and Politics in the Early Modern World*. Londa Schiebinger and Claudia Swan, eds. Pp. 134-147. Philadelphia: University of Pennsylvania Press.
- Lambert, Helen
1997 Plural Traditions? Folk Therapeutics and 'English' medicine in Rajasthan. *In Western Medicine As Contested Knowledge*. Andrew Cunningham and Bridie Andrews, eds. Pp. 191-211. New York: Manchester University Press.
- Langford, J.
1995 Ayurvedic Interiors: Person, Space, and Episteme in Three Medical Practices. *Cultural Anthropology* 10 (3):330-66.
- Langford, J.
1999 Medical Mimesis: Healing Signs of A Cosmopolitan" Quack". *American Ethnologist* 26 (1):24-46.
- Leder, D.
1990 Clinical Interpretation: The Hermeneutics of Medicine. *Theoretical Medicine and Bioethics* 11(1): 9-24.
- Leitner, G. W.
1882 History of Indigenous Education in the Punjab Since Annexation and in 1882. Patiala, Punjab: Languages Department.
- Leslie, C.
1969 Modern India's ancient medicine. *Society* 6(8): 46-55.
1976 The Ambiguities of Medical Revivalism in Modern India. *In Asian Medical Systems: A Comparative Study*. Charles Leslie, ed., Pp. 356-67. Berkeley: University of California Press.
1989 Indigenous Pharmaceuticals, the Capitalist World System, and Civilization. *Kroeber Anthropological Society Papers* 69-70:23-31.
1992 Interpretations of Illness: Syncretism in Modern India. *In Paths To Asian Medical Knowledge: Comparative Studies of Health Systems and Medical Care*. Charles Leslie and Allan Young, eds. Pp. 177-208. Berkeley: University of California Press.
- Leslie, Charles, and Allan Young. eds.
1992 Paths To Asian Medical Knowledge. Vol.32. Berkeley: University of California Press.
- Liyanaratne, J.
2001 Some Sri Lankan Medical Manuscripts of Importance for the History of South Asian Traditional Medicine. *Bulletin of the School of Oriental and African Studies*, 64 (3): 392-400.

Madhyamam

2012 <http://www.madhyamam.com/news/167679/120511> Date Accessed: 11/6/2012

Malayala Manorama

2010 Advertisement. November 15.

Manoj, M.

2010a Dhee Dhruti Smruthi Vibhrashta Karma Yat Kuruthe. Apta 17(2).

2010b Dhee Dhruti Smruthi Vibhrashta Karma Yat Kuruthe. Apta 17(3).

Manorama Arogyam

2012 Prasavaraksha [Delivery Care]. February: 36-37.

Marx, Karl

1867 Capital, Volume I. London: Lawrence and Wishart

Mashelkar, R. A.

2008 Second World Ayurveda Congress (Theme: Ayurveda for the Future)—Inaugural Address: Part III. Evidence-Based Complementary and Alternative Medicine: ECAM 5(4):367.

Mathrubhumi

2010 Mohanlalinu sukha chikitsa [wellness treatment for Mohanlal]. 30 July 2010.

McCay, Bonnie J., and James M. Acheson. eds.

1990 The Question of the Commons: The Culture and Ecology of Communal Resources. Tucson: University of Arizona Press.

Menon, Parvati

2003 Conservation and Consumption—A Study on the Crude Drug Trade in Threatened Medicinal Plants in Thiruvananthapuram District, Kerala. Project Report, Kerala Research Program on Local Level Development. Trivandrum: Centre for Development Studies.

Menon, Sridhara

1967 A Survey of Kerala History. Kottayam: SPSS

Moisio, Risto, Eric J. Arnould, and Linda L. Price

2004 Between Mothers and Markets Constructing Family Identity Through Homemade Food. Journal of Consumer Culture 4(3):361-384.

Montgomery, E.

1976 Systems and the Medical Practitioners of a Tamil Town. In Asian Medical Systems: A Comparative Study, Charles Leslie, ed. Pp. 272-284. Berkeley: University of California Press.

Moosath, K. Anitha

2006 Brand Ayurveda. The Hindu Business Line, March 10.

Moynihan, R., and D. Henry

2006 The Fight Against Disease Mongering: Generating Knowledge For Action. PLoS Medicine 3(4), E191.10.1371/Journal.Pmed.0030191.

Muraleedharan, K. P.

2006a The Disguise: Part 1. Global Ayurveda 2(5):24-27.

2006b The Disguise: Part 2. Global Ayurveda 2(6):22-24.

Muraleedharan, P. K., N. Sasidharan, B. M. Kumar, M. A. Sreenivasan, and K. K. Seethalakshmi

2005 Non-Timber Forest Products in the Western Ghats of India: Floristic Attributes, Extraction and Regeneration. Journal of Tropical Forest Science 17(2): 243-257.

- Murali, K.
2004 Ayurveda in Kerala A Historical Review. *Global Ayurveda* 1(1):49-54.
2005 Buddhist tradition. *Ayurvedam*, June.
- Murthy, K. R. Srikantha Trans.
1984 *Sarngandhar Samhita*. Varanasi: Chaukhamba Orientalia.
- Nagam Aiya, V.
1906 *The Travancore State Manual, Volume 2*. Trivandrum: Government of Travancore.
- Nagarjuna
2012 Announcement. *Nagarjuna Vartakal* 7(1):2.
- Nair, P.N and Nair, C.S.
1985 *Keralathile Vana Sasyangal (Forest Plants of Kerala)*. Thiruvananthapuram: Kerala Bhasha Institute.
- Nair, Vasudevan, and Vasudevan, Rekha
2008. *Common Medicinal Plants: A Concise Dictionary*. Coimbatore: Arya Vaidya Pharmacy.
- Namboodiri, Cheriya Narayanan
2000 *Deerghayussum Ayurvedavuum [longevity and Ayurveda]*. Kottayam: D. C. Books.
2008 *Chikitsanubhavangal [Clinical Experiences]*. Kottayam: SPSS.
- Nambudiri, Sudha
2002 in *Search of Ayurveda*. *The Hindu*, November 2.
- Nampoothiry, Govindan K.
2008a *Bitter Pill....No More*. *Ayurveda and Health Tourism* 3(4):38-41.
2008b *Rudra - A New Initiative*. *The Indian Express*, April 2.
- Naraindas, H.
2006 of *Spineless Babies and Folic Acid: Evidence and Efficacy in Biomedicine and Ayurvedic Medicine*. *Social Science and Medicine* 62(11): 2658-2669.
- NDTV
2012 Kerala's 'Authentic Ayurveda' Attracting Germans. March 14.
<http://www.ndtv.com/Article/Kerala/Kerala-S-Authentic-Ayurveda-Attracting-Germans-185819>.
- NDTV
2010. *Born Into Ayurveda*. Television Interview of CEO and Head of International Operations of Baidyanath. August 14. <http://www.ndtv.com/video/player/all-in-the-family/born-into-ayurveda/158200>
- Nesamony, S.
2005 *Oushadha Sasyangal [Medicinal Plants]: Vol.1 and II*. Trivandrum: Kerala Bhasha Institute.
- Nichter, Mark
1989 *Pharmaceuticals, Health Commodification, and Social Relations: Ramifications for Primary Health Care*. In *Anthropology and International Health: South Asian Case Studies*, Mark Nichter, ed. Pp. 233-277. Dordrecht : Kluwer Academic Publishers.
2006 *Anthropology and Global Health: Reflections of a Scholar-Activist*. *India Review* 5(3-4): 343-371.
- Nichter, M., and N. Vuckovic
1994 *Agenda For an Anthropology of Pharmaceutical Practice*. *Social Science and Medicine* 39 (11): 1509-25.

- Nisula, T.
2006 In the Presence of Biomedicine: Ayurveda, Medical Integration and Health Seeking in Mysore, South India. *Anthropology and Medicine* 13(3):207-24.
- Obeyesekere, G.
1992 Science, Experimentation, and Clinical Practice in Ayurveda. *In Paths To Asian Medical Knowledge: Comparative Studies of Health Systems and Medical Care*. Charles Leslie and Allan Young, eds. Pp.160-178. Berkeley: University of California Press.
- Ojha, K., C. V. Rao, S. Mehrotra, and P. Pushpangadan
2004 Ayurvedic Norms For Standard Drugs. *Aryavaidyan* 17 (4): 212-215.
- One India
2012 <http://malayalam.oneindia.in/news/2012/05/11/kerala-raid-dhathri-indulekha-sreedhareeyam-fake-advt-101419.html> Date accessed: 11/6/2012
- Padanna, Ashraf
2010 Kerala Sees Red Over Herbal 'Viagra'. *Arab News*, Jun 29.
- Pandey, S. M, and N. Zide
1965 Mirabai and Her Contributions to the Bhakti Movement. *History of Religions* 5(1):54-73.
- Panikkar, K. N.
1992 Indigenous Medicine and Cultural Hegemony: A Study of the Revitalization Movement in Keralam. *Studies in History* 8(2):283.
2005 Tradition and Modernity. *In Aryavaidyan P K Varier Centennial Colloquium on Tradition and Modernity*. Pp. 69-73, Kottakkal: Arya Vaidya Sala.
- Paninchukunnath, A.
2007 OTC Drug Marketing-Global Trends and Indian Experiences. *International Marketing Conference on Marketing & Society*, Indian Institute of Management, Kozhikode, April 8-10.
- Pankajakasthuri
2005. Honorable Chief Minister Sri Oommen Chandy Unveiled Harmony- Ayurvedic Massage-Based Wellness and Rejuvenation Services. Press Release, Thiruvananthapuram, November.
http://www.pankajakasthuri.in/index.php?route=news/newsandnews_id=3 Date Accessed: 08/15/2008
- Pathak, Suniti Kumar, Shedup Tenzin, and Barbara Gerke
1997 Vagbhata's Ashtanga Hridaya Samhita and Its Importance To Indo-Tibetan Medical Studies. *Ayurvijnana* 3(1). http://www.ittm.org/publications/ayurvijnana/vol_03/av_v03_1.htm.
- Patwardhan, B., and G. Bodeker
2008 Ayurvedic Genomics - Establishing a Genetic Basis For Mind-Body Typologies. *Journal of Alternative and Complementary Medicine* 14: 571-576
- Patwardhan, B., D. Warude, P. Pushpangadan, and N. Bhatt
2005 Ayurveda and Traditional Chinese Medicine: A Comparative Overview. *Evidence Based Complementary and Alternative Medicine* 2(4):465-74.
- Patwardhan, K., S. Gehlot, G. Singh, and H. C. S. Rathore
2011 The Ayurveda Education in India: How Well Are The Graduates Exposed To Basic Clinical Skills? *Evidence-Based Complementary and Alternative Medicine*. Vol 2011: Article Id 197391, Doi:10.1093/Ecam/Nep113.
- Peyre A., A. Guidal, K. F. Wiersum, and F. Bongers
2006 Dynamics of Homegarden Structure and Function in Kerala, India. *Agroforestry Systems* 66(2):101 - 115.

- Peyre, A., A. Guidal, K. F. Wiersum, and F. Bongers
2006 Dynamics of Homegarden Structure and Function in Kerala, India. *Agroforestry Systems* 66(2):101-115.
- Pilzer, Paul Zane
2001 *The Next Trillion: Why the Wellness Industry Will Exceed the \$1 Trillion Healthcare (Sickness) Industry in the Next Ten Years*. Texas: Videoplus.
- Planning Commission of India
2000 Report of the Task Force on Conservation and Sustainable Use of Medicinal Plants. New Delhi: Planning Commission of India.
- Plattner, S.
2000 Profit Markets and Art Markets. *In Commodities and Globalization: Anthropological Perspectives*. Angelique Haugerud, M. Priscilla Stone, and Peter D. Little, eds. Pp. 113-134. Lanham: Rowman and Littlefield Publishers.
- Pordié, L.
2010 The politics of therapeutic evaluation in Asian medicine. *Economic & Political Weekly* 45(18): 57-64.
- Prakash, Gyan
1999 *Another Reason: Science and the Imagination of Modern India*. Princeton: Princeton University Press.
- Puranik, Ranjit
2007 Herbal Drugs Registration: An Ayurvedic Perspective. Lecture Presented at Indian Pharmaceutical Association Convention, Mumbai, September 12-14.
2012. Personal Interview, Bengaluru, March 16.
- Radin, Margaret Jane and Madhavi Sunder
2005 The Subject and Object of Commodification. *In Rethinking Commodification: Cases and Readings in Law & Culture*. Martha M. Ertman and Joan C. Williams, eds. Pp 8-29 NY: New York University Press.
- Rados, C.
2004 Ephedra Ban: No Shortage of Reasons. *FDA Consumer* 38(2):6-7.
- Raghunathan, Nambisan
1996 Multi Dimensional Views on Tantrism. *Samagra*: 87-93, Souvenir of 6th World Congress on Holistic Life & Medicine, 5-7 January, Kozhikode.
- Rajagopalan, C.R.
2008 Vazhi Vanibha Nattarivu, Manipravalthil [Folk Knowledge of Street Markets in Manipravalam Literature]. *In Nattuchandangal [Rural Markets]*, C. R. Rajagopalan, ed., Pp: 22-55. Kottayam: D. C. Books.
- Rajagopalan, K.
1996 Keraleeya Chikitsa [Keralite treatment]. *Samagra*: 65-67, Souvenir of 6th World Congress on Holistic Life & Medicine, 5-7 January, Kozhikode.
2009 Panchakarma Chikitsa Sara Sangraham [Collection of Panchakarma Treatments]. Kottakkal: Arya Vaidya Sala.
- Rajith, N. P., M. Navas, A. M. Thaha, M. J. Manju, N. Anish, S. Rajasekharan, and V. George
2010 A Study On Traditional Mother Care Plants of Rural Communities of South Kerala. *Indian Journal of Traditional Knowledge* 9(1):203-208.

- Ramesh, A., and B. Hyma
1981 Traditional Indian Medicine in Practice in an Indian Metropolitan City. *Social Science and Medicine*. Part D: Medical Geography 15(1):69-81.
- Rao, B. Rama
2003 Some Views on Research in Ayurveda. *Aryavaidyan*17(1):39-41.
- Rashid, T.
2006 Why You Don't Get To Know What Your Ayurvedic Drug Has. *The Indian Express*, January 30.
- Ravikumar, K., D. K. Ved, R. Vijaya Sankar, and P. S. Udayan.
2000 100 Red Listed Medicinal Plants of Conservation Concern in Southern India. Bangalore: Foundation for Revitalization of Local Health Traditions.
- Reddy, S.
2002 Asian Medicine in America: The Ayurvedic Case. *The Annals of the American Academy of Political and Social Science* 583(1):97-121.
- Reyes-García, V.
2010 The Relevance of Traditional Knowledge Systems for Ethnopharmacological Research: Theoretical and Methodological Contributions. *Journal of Ethnobiology and Ethnomedicine* 6(1):32.
- Rosenberg, L. E.
1999 Physician-Scientists: Endangered and Essential. *Science* 283(5400):331-332.
- Russo, A., and F. Borreli
2005 *Bacopa monnieri*, a Reputed Nootropic Plant: An Overview. *Phytomedicine* 12(4):305-317.
- Sangeetha, G.
2010 Manpower Shortage Hits Ayurveda Industry. *Financial Chronicle*, March 20.
- Saper, R. B., S. N. Kales, J. Paquin, M. J. Burns, D. M. Eisenberg, R. B. Davis, and R. S. Phillips
2004 Heavy Metal Content of Ayurvedic Herbal Medicine Products. *The Journal of the American Medical Association* 292(23):2868-73.
- Saradamma, Rema Devi, Nick Higginbotham, and Mark Nichter.
2000 Social Factors Influencing the Acquisition of Antibiotics Without Prescription in Kerala State, South India. *Social Science and Medicine* 50 (6): 891-903.
- Sasidharan, N., and Muraleedharan, P. K.
2009 The Raw Drugs Requirement of Ayurvedic Medicine Manufacturing Industry in Kerala. Research Report, 322. Trichur: Kerala Forest Research Institute
- Scott, James C.
1998 *Seeing Like A State: How Certain Schemes To Improve the Human Condition Have Failed*. New Haven CT: Yale Univ Pr.
- SDL (Shree Dhootapapeshwar India Limited)
2004 Annual Report 2003-2004. Mumbai: Shree Dhootapapeshwar India Limited.
- Sharma, P. V. Trans.
2000 *Charaka Samhita*. Varanasi: Chaukhamba Orientalia.
- Sharma, U.
2008 Transforming Ayurveda. *Express Pharma*, August 16-31.

- Sheldon, Jennie Wood, Michael. J. Balick., and Sarah. A. Laird
1997 Medicinal Plants: Can Utilization and Conservation Coexist? New York: The New York Botanical Garden.
- Shivaprasad, B., and K. R. Chandrashekar
2003 Production of Ayurvedic Medicine in Dakshina Kannada District of Coastal Karnataka. Indian Journal of Traditional Knowledge 2(3):272-283.
- Singh, Nancy
2009 A Paradigm Shift in Ayurveda. Express Health Care, September.
<http://www.expresshealthcare.in/200909/market02.shtml>
- Singh, R. H.
2008 Panchakarma Therapy. Varanasi: Chaukhamba Sanskrit Series
- Singh, R. K.
2011 Swot Analysis of Marketing of Generic (Classical) Vs Brand Named (Proprietary) Ayurvedic Medicines. Indian Journal of Research 5:41-44.
- Sivarajan, V. V., and Indira Balachandran
1994 Ayurvedic Drugs and Their Plant Sources. Calcutta: Oxford and IBH Publishing.
- Sivarajan, V. V., Palpu Pushpangadan, and P. K. Ratish Kumar
1990 A Revision of *Trichopus* (Trichopodaceae). Kew Bulletin 45(2):353-360.
- Sivaramakrishnan, Kavita
2006 Old Potions, New Bottles: Recasting Indigenous Medicine in Colonial Punjab:1850-1945, New Perspectives in South Asian History. No. 12. New Delhi: Orient Longman.
- Soman, C. R., S. Shahulhameed, V. Ramankutty, K. Vijayakumar, R. Kunjukrishnapillai, K. Ajayan, and S. Sajikumar
2011 Cohort Profile: The Prolife Study in Kerala, India. International Journal of Epidemiology 40 (1): 10.
- Spitzer, Denis
2009 Ayurvedic Tourism in Kerala: Local Identities and Global Markets. *In Asia On Tour: Exploring the Rise of Asian Tourism.* Winter Tim, Peggy Teo, and T.C. Chang, eds. Pp. 138-150. New York: Routledge.
- Spooner, Brian
1986 Weavers and Dealers: The Authenticity of An Oriental Carpet. *In The Social Life of Things: Commodities in Cultural Perspective.* Arjun Appadurai, ed. Pp. 195-235. Cambridge, UK: Cambridge Univ. Press.
- Sreejayan, P. Nair, G. Thomas, V. R. Kumar, and L. Kumari
2005 The Njavara Collection: A Composite But Distinct Gene Pool. International Rice Research Notes 30(1):22-23.
- Sreekumar, A. P.
2010 Bodhavalkarnam Vazhi Marumbol [when conscientization changes tracks] 17(4):3.
- Sreekumar, T T.
1993 Urban Process in Kerala. 1900-1981. Trivandrum: Centre for Development Studies.
- Steiner, C. B.
1994 African Art in Transit. Cambridge: Cambridge University Press.

- Stewart, M.
2005 Reflections on the Doctor-Patient Relationship: From Evidence and Experience. *The British Journal of General Practice* 55(519):793.
- Stone, Glenn Davis
2007 Agricultural Deskillling and the Spread of Genetically Modified Cotton in Warangal. *Current Anthropology* 48(1): 67-103.
2011 Contradictions in the Last Mile Suicide, Culture, and E-Agriculture in Rural India. *Science, Technology and Human Values* 36(6): 759-790.
- Stronza, A.
2001 Anthropology of Tourism: Forging New Ground for Ecotourism and Other Alternatives. *Annual Review of Anthropology* 30:261-283.
- Subrat, N., M. Iyer, and R. Prasad
2002 *The Ayurvedic Medicine Industry: Current Status and Sustainability*. New Delhi: Ecotech Services (India) Pvt. Ltd and International Institute for Environment and Development.
- Sudha, Preeti and Venkat, Padma
2004 *Ayurveda in Your Kitchen*. Amrut 8(5): 4-5
- Sujatha, V
2011 What Could 'Integrative' Medicine Mean? Social Science Perspectives on Contemporary Ayurveda. *Journal of Ayurveda and Integrative Medicine* 2(3):115.
- Sujatha, V.
2007 Pluralism in Indian Medicine. *Contributions To Indian Sociology* 41(2):169.
- Sujatha, V.
2011 Innovation Within and Between Traditions. *Science Technology and Society* 16(2):191.
- Suneetha, M.S., and M. G. Chandrakanth
2000 Marketing of Medicinal Plants in Kerala. *In Organic Production of Medicinal, Aromatic and Dye-Yielding Plants (MADPS) With Inputs From FRLHT*. P. Griffiee and S. Metha, eds. Bangalore: FRLHT. <http://ecoport.org/ep?searchtype=earticleviewandarticleid=145andpage=1910>. Access Date: 11/01/2012.
- Svoboda, Robert
1992 *Ayurveda: Life, Health and Longevity*. New Delhi: Penguin Books India.
- Taylor, C. E.
1976 The Place of Indigenous Medical Practitioners in the Modernization of Health Services. *In Asian Medical Systems: A Comparative Study*, Charles Leslie, ed. Pp. 285-299. Berkeley: University of California Press.
- Thankamani, V., A. Sindhu and P. R. Krishnakumar
2005 Evaluation and characterization of Vilwadi Gulika and ayurvedic pill Proceedings of International conference on Health sciences, JSS Mysore March 2005.
- Thankappan, K. R., S. Sivasankaran, S. A. Khader, P.G. Padmanabhan, P. S. Sarma, G.K. Mini, and R.S. Vasan
2006 Prevalence, Correlates, Awareness, Treatment, and Control of Hypertension in Kumarakom, Kerala: Baseline Results of Community-Based Intervention Program. *Indian Heart Journal* 58(1):28.
- Tharakan, P. M.
1984 Socio-economic factors in educational development: Case of nineteenth century Travancore. *Economic and Political Weekly* Vol. 19(45): 1913-1928.

- Thomas, Regi
1999 Ecological and Economic Analysis of Homestead Farming in Kerala. Ph.D. Dissertation, Department of Humanities and Social Sciences, Indian Institute of Technology, Bombay.
- Thorley, J.
1969 The Development of Trade Between the Roman Empire and the East Under Augustus. *Greece and Rome (Second Series)* 16 (2):209-23.
- Thorstrom, Janna
2012 I Googled Ayurveda in India. *Ayurveda and Health Tourism* 7(1):20-21.
- Thirumulpad, Raghavan K.
2008 It's So Simple, So Natural. *Ayurveda and Health Tourism* 3(4):15-16.
2007 *Ayurvedam Oru Avalokanam [Ayurveda an Analysis]*. Kottayam: DC Books.
2005 *Arkkum Engum Panchakarmam [Panchakarma to anybody anywhere]*. Ayurvedam, November.
2002 *Ayurveda Chikitsa: Panchakarmavum Keraleeya Paramaryavum [Ayurvedic treatment: Panchakarma and Kerala Tradition]*. *Shatabdi Smaranika of AVS Kottakkal* 2:297-307 Kottakkal: Arya Vaidya Sala.
1977 *Ayurveda Darshanam*. Trivandrum: Kerala Bhasha Institute.
- TNN
2013 Ayurveda not adequately represented in policy panel, *Times of India*, March 8.
- Trawick, M.
1992 Death and Nurturance in Indian Systems of Healing. *In Paths To Asian Medical Knowledge: Comparative Studies of Health Systems and Medical Care*. Charles Leslie and Allan Young, eds. Pp. 129-59. Berkeley: University of California Press.
- Trawick, Margaret
1987 The Ayurvedic Physician as Scientist. *Social Science and Medicine* 24 (12):1031-50.
- Tu, Y.
2011 The Discovery of Artemisinin in (Qinghaosu) and Gifts From Chinese Medicine. *Nature Medicine* 17(10):1217-1220.
- Udayakumar, P.G.
2010 Editorial. *Apta* 17(4).
- Unithiri, N. V. P.
1996 Sanskrit Tradition of Kerala and Ayurveda. *Samagra*: 50-55, Souvenir of 6th World Congress on Holistic Life & Medicine, 5-7 January, Kozhikode.
- Valiathan, M. S.
2003 *The Legacy of Caraka*. Hyderabad: Orient Longman.
- Valiathan, M. S.
2006 *Towards Ayurvedic Biology: A Decadal Vision Document*. Bangalore: Indian Academy of Sciences.
- Valiathan, M.S.
2012 Address at Vision Conclave. Global Ayurveda Festival, Trivandrum, February 9-14.
- Van Der Geest, S.
1988 Pharmaceutical Anthropology: Perspectives for Research and Application. *In The Context of Medicines in Developing Countries: Studies in Pharmaceutical Anthropology*. Van Der Geest and S. R. Whyte, eds., Pp. 329-366. Dordrecht: Kluwer Academic Publishers.
- Van Der Geest, S., S. R. Whyte, and A. Hardon

- 1996 The Anthropology of Pharmaceuticals: A Biographical Approach. *Annual Review of Anthropology* 25:153-78.
- Van Der Geest, Sjaak, and Susan Reynolds Whyte
1989 The Charm of Medicines: Metaphors and Metonyms. *Medical Anthropology Quarterly* 3(4):345-367.
- Van Esterik, P.
1988 To Strengthen and Refresh: Herbal Therapy in Southeast Asia. *Social Science and Medicine* 27(8):751-759.
2006 From Hunger Foods To Heritage Foods: Challenges To Food Localization. *In Fast Food/Slow Food: The Cultural Economy of the Global Food System*. Richard Wilk, ed. Pp.83-96. Lanham: Altamira Press.
- Vangal, Ramesh
2009 Presidential Address On the Occasion of the Inaugural Ceremony of Founders Day. *KAPL Vaidyam Vol 2(1):5-6*
- Varier, N. V. K.
1996 Ayurvedic Tradition in South India. *Samagra:41-44*, Souvenir of 6th World Congress on Holistic Life & Medicine, 5-7 January, Kozhikode.
2003 Bala chikitsa - Keralathil [Pediatric treatment in Kerala]. *Shatabdi Smaranika of AVS Kottakkal 2: 319-323* Kottakkal: Arya Vaidya Sala.
- Varier, P. S.
1915 Anoushadha Chikitsa. *In Tayverukal [Taproots]: Selected Essays of Vaidyaratnam P. S. Varrier*. C. R. Agnivesh, ed. (1993), Pp. 66-79. Kottakkal: Kerala Ayurvedic Studies and Research Society.
- Varrier, P. S.
1908 *Arya Vaidya Shala*. *Dhanwantary* 4(3): 52-53.
- Varrier, Raghava
2009 *Alathur Manipravalam*. Kottakkal: Aryavaidya Sala
- Varier, Raghava
2002 *The Rediscovery of Ayurveda: The Story of Kottakkal Arya Vaidyasala*. New Delhi: Penguin Books.
- Varshney, V.
2008 Chyawanprash, An Ayurvedic Tonic has Artificial Sweetener. *Down to Earth*, February 14.
- Vasudevan, V.
2008 It is a Diversion. *Global Ayurveda* 3(4): 38-40.
- Ved, D. K., and G. S. Goraya
2007 *Demand and Supply of Medicinal Plants in India*. Bangalore: FRLHT.
- Venkatasubramanian, P., S. K. Kumar, and V. S. Nair
2010 *Cyprus Rotundus, a Substitute For Aconitum Heterophyllum: Studies on The Ayurvedic Concept of Abhava Pratinidhi Dravya (Drug Substitution)*. *Journal of Ayurveda and Integrative Medicine* 1(1): 33.
- Vijayakumar, T. K.
2010 *Ayurvedam Englandil [Ayurveda in England]*. *Apta* 17(5)
- Viswanath
2012 *Wayside Beautification Kills Medicinal Plants*. *The New Indian Express*, August 26.
- Vollan, B., and Elinor Ostrom
2010 *Cooperation and the Commons*. *Science* 330(6006):923-924.
- Warrier, P. K.

2006 Ayurveda: Past, Present and the Future. *Kerala Calling* 26(8):28-33.

Warrier, P. K., V. P. K. Nambiar, and C. Ramankutty
1996 *Indian Medicinal Plants: A Compendium of 500 Species*. Vol. 5. Hyderabad: Orient Blackswan.

White, Bob
2000 Soukouss Or Sell-Out? Congolese Popular Dance Music on the World Market. *In Commodities and Globalization: Anthropological Perspectives*. Angelique Haugerud, M. Priscilla Stone, and Peter D. Little, eds. Pp. 33-58. Lanham: Rowman and Littlefield Publishers.

Whyte, Susan Reynolds, Sjaak Van Der Geest, and Anita Hardon
2002 *Social Lives of Medicines*. Cambridge: Cambridge University Press.

Wilk, R. Richard ed.
2006 *Fast Food/Slow Food: The Cultural Economy of the Global Food System*. Lanham: Altamira Press.

Wolfgram, M. S.
2009 *Ayurveda in the Age of Biomedicine: Discursive Asymmetries and Counter-Strategies*. Ph.D. Dissertation, Department of Anthropology, The University of Michigan.

Woloshin, S., and L. M. Schwartz
2006 Giving Legs To Restless Legs: A Case Study of How the Media Helps Make People Sick. *PLoS Medicine* 3(4):E170. Doi:10.1371/Journal.Pmed.0030170.

Wood, Ananda
1985 *Knowledge Before Printing and After: The Indian Tradition in Changing Kerala*. New Delhi: Oxford University Press.

Wujastyk, Dominic
1996 *Medicine in India*. *In Oriental Medicine: An Illustrated Guide To the Asian Arts of Healing*. Jan Van Alphen and Anthony Aris, eds. Pp 19-38. Boston: Shambhala.

Wujastyk, Dominik
1998 *The roots of ayurveda: Selections from Sanskrit medical writings*. New Delhi: Penguin India.

Yamashita, Tsutomu and P. Ram Manohar, P.
2007 *Memoirs of Vaidyas: The Lives and Practices of Traditional Medical Doctors in Kerala, India*. *Electronic Journal of Indian Medicine* 1: 117-139.

Zhan, Mei
2009 *Other-Worldly: Making Chinese Medicine Through Transnational Frames*. Durham: Duke University Press.

Zimmermann, Francis
1992 *Gentle Purge: The Flower Power of Ayurveda*. *In Paths To Asian Medical Knowledge: Comparative Studies of Health Systems and Medical Care*. Charles Leslie and Allan Young, eds. Berkeley: University of California Press.

Zysk, G. Kenneth
1995 *New Age Ayurveda*. Lecture Presented At A Conference of the International Association For the Study of Traditional Asian Medicine, Wellcome Institute For the History of Medicine, April, London.

1998 *Asceticism and Healing in Ancient India*. New Delhi: Motilal Banarsidass.

GLOSSARY

Allopathy/allopathic = term used to refer to biomedicine in India

Angadi/Angadi marunnu = raw drugs (The literal meaning of Angadi is ‘market’)

Arishtam = self-generated alcoholic medicine preparation (with boiled ingredients)

Arogyapacha (*Trichopus zeylanicus*) = the plant that was internationally famous for benefit=sharing agreement

Asavam = self-generated alcoholic medicine preparation (with raw ingredients).

Ashtanga Hridayam = the last of the compendiums in the compendium triad, C.7th century CE written by Vagbhata. Significant because it is the foundation text of classical Ayurvedic practice in Kerala.

Ashtavaidyan tradition = medical tradition shared by 18 Namboothiri brahmin families who claim to be the first to learn Ayurveda from the Buddhist physician=scholar Vagbhata (C. 600 CE). Only eight of these families are extant.

Bala = Sanskrit drug name for the Malayalam *kurunthoti*.

Bilva = Sanskrit drug name for the Malayalam *koovalam*.

Brahmi = *Bacopa monnieri*, an index plant

Charaka Samhita = the first known Indian classical medical compendium, part of the compendium triad, C. 1st BCE

Chikitsa = treatment

Chooranam/Churnam = powder, adjective used to refer to medicinal powder.

Classical medicines = medicines based on officially approved classical texts as per the Drugs and Cosmetics Act 1940. Classical products need not be registered, they have to carry the name of the reference text on their labels.

Decoction tablet = decoction converted to tablet

Dhara = pouring of liquid (oil, milk, buttermilk, etc.) over the body. Hence, Shirodhara, pouring over head.

Dosha = humor, also used to refer to an imbalance of the humor. There are three humors, Vata, Pitta and Kapha, together termed Tridosha.

Ethical medicines = Term used in Indian market to refer to prescription (Rx) medicines

Ezhava = a historically marginalized caste in Kerala, professionally toddy-tappers, known to be closely associated with traditional medical practice

Federation = used to refer to SCST Federation, nodal agency of medicinal plant collection in Kerala.

Ghritam = ghee, adjective used to refer to ghee=based medicine preparations

Gulika = pill

Gurukula = residential master-disciple mode of education taking place in the Guru’s house or in a space attached to Guru’s house.

Jeevani = The product made with Arogyapacha

Kalari = the gym where Kalari is taught

Kalari-Marma Vaidyan= practitioner who combines the knowledge of Kalari and Marmam

Kalaripayattu = martial art tradition of Kerala

Karkidaka Kanji = medicinal rice=porridge consumed during the Karkidakam season.

Karkidakam = last month in the Malayalam calendar during the peak monsoons (Mid July to mid August). The season recommended for wellness treatment and for medicinal diet regimes. This is also

the time considered ideal to read scriptures, and hence also called Ramayana Masam (the month of Ramayana)

Kashayam = decoction

Kashayam tablet= decoction converted to tablet

Kattupadavalam = *Trichosanthes cucumerina*, an index plant

Keraleeya = of Kerala (like in Keraleeya Panchakarma)

Keralite = term used to denote residents of Kerala.

Kizhi = bolus massage

Koovalam = *Aegle marmelos*, an index plant

Kurunthoti = *Sida rhombifolia* spp. *retusa*, an index plant

Kuzhambu = thick oil, meant for topical application

Lehyam = medicinal jam-like preparations, literally 'lickables'

Malayalee = term used to denote residents of Kerala, based on the local language

Malayalam = language of Kerala

Manipravalam = Ancient Malayalam, in vogue up to 16 the century.

Marma = pressure point

Marmam/Marma Vaidyam = specialized branch of medicines that is based on the theory of pressure points.

Marunnu = medicine

Namboothiri = Community of Brahmins native to Kerala.

Njavara = a variety of medicinal rice, *Oriza sativa* spp., an index plant

Njavara Kizhi = bolus massage with medicinal rice, Njavara

Open-source = knowledge based in documents that are open to all for use and experimentation.

Orientalists = term denoting the British who favored indigenous knowledge, education and languages during the colonial period. (as opposed to anglicists= British who favored anglicization of India)

Ottamooli practitioner = 'single-root' practitioner, practitioner who specializes in giving medicine to a narrow range of ailments (mainly urinary problems, hemorrhoids, migraine). Unlike other generalist traditional practitioners they are not considered to be learned in theoretical knowledge and are secretive about their medicines.

Pacha Marunnu = fresh raw drugs

Panchakarma = a class of five cleansing therapies. These include therapeutic vomiting (vamana), Purgation (virechana), nasal application of medicine (nasya), enema (vasti) and blood-letting using leeches or incisions (rakta-moksham).

Paramparya = traditional

Paramparya vaidyan = traditional vaidyan, a popular usage for those who have learnt their knowledge in a traditional system, either from Gurukula or from family members.

Pashchatkarma = class of procedures meant to be followed after the administration of Panchakarma.

Petti Marunnu = dry raw drugs (Petti means box, raw drug shops typically have box with 64 compartments)

Poorvakarma = preparatory procedures for Panchakarma, classified into two: Oleation (snehana) and Sudation (swedana).

Proprietary ayurvedic medicines = new formulations registered with the regional drug controller.

Rasa = has several meanings. Used in the text to mean taste or mineral preparation.

Rasayana = rejuvenation, rejuvenative.

Sahasrayogam = literally 'thousand formulations', a popular Malayalam practitioner's hand book of unknown antiquity.

Samhita = compendium

Sarngadhara Samhita = master classic on pharmacology, dated to 13th century CE.

Scheduled caste/tribe = Scheduled Caste and Tribes are designated communities in the constitution (Article 366 (25)), who are protected with policies of positive discrimination as they are considered historically marginalized. While there is some overlap, typically scheduled caste members are untouchable communities within the Hindu fold, whereas Scheduled Tribe members are those who were historically secluded from the mainstream, and mainly lived in endogamous groups in hilly regions and forests.

Sushruta Samhita = the second medical compendium, part of the compendium triad

Siddha = One of the five recognized Indian systems of medicine, based in Tamil Nadu, South India.

Sukha Chikitsa = wellness treatment

Tailams = oils

Traditional knowledge = knowledge acquired through informal social networks.

Traditional medicines/formulations = medicines based in popular tradition

Traditional practitioner = the practitioner who has acquired medical knowledge outside modern institutions, either through family members or Gurus (as opposed to institutionally trained).

Traditional stakeholders = those who have been historically involved in the Ayurvedic segment either as manufacturers or as therapy service providers.

Traditional-popular formulations = a term I use to refer to a range of formulations based in popular seasonal and post delivery diet regimes, they may or may not have a textual track record.

Tribal = member of the Scheduled tribes

Unani = Unani is a product of a marriage between Persian and Indian medicine, often considered to be Islamic medicine as opposed to Ayurveda which is considered Hindu.

Vagbhata = Author of the last compendium, Ashtanga Hridayam, assumed to have been a Buddhist sage.

Vaidyan/Vaidya: Though this is an umbrella term for a practitioner of any system of medicine including biomedicine, it is typically used to refer to practitioners of indigenous systems of medicine. It is used in the dissertation to refer to ayurvedic doctors who are informally trained (licensed or unlicensed) in contrast with those who are institutionally trained.

Vaidyashala = pharmacy, where medicines are made and sold.

Vati = Pill

Velan = a Scheduled caste community in Kerala which traditionally specialized in pediatrics (Balavadiya)

Vishavaidya = Poison healer

Yogam = Formulation

Yukti = Reason/reasoning