

From the shadows of legitimacy problems and prospects of folk healing in India

M. D. Subash Chandran

Centre for Ecological Sciences, Indian Institute of Science, Bangalore- 560012

Tel: 08386 223142; Cell: 09449813043

Email: mdschandra@yahoo.com; mds@ces.iisc.ernet.in

Abstract

Contributions of Indian folk medicine towards Ayurveda, and vice versa, are examined through a case study of Ezhava medical traditions in Kerala, in historical context. *Hortus Malabaricus*, a masterly 12 volume ethnobotanical treatise, by Van Rheede, primarily based on 17th century Ezhava botany and medicine, captured the attention of European biologists, promoting modern systematic botany and probably binomial nomenclatural system by Linnaeus. Despite social backwardness, Ezhavas of yore excelled in indigenous medicine and Ayurveda, almost on par with celebrated Ashtavaidya Brahmin practitioners. A paradigm shift in indigenous medicine happened during late British period, with premium on Western biomedicine. However, compulsions on formal qualifications for Ayurvedic practitioners became inevitable in free India, keeping folk healers and traditional Ayurvedic practitioners outside the zone of legitimacy. Results of a case study conducted in Uttara Kannada to evaluate the current status of folk healers show their important role in the society for curing a wide array of health problems of humans and livestock. More than 50% of healers studied were Brahmins. Most healers being elderly, find it hard to get successors, for lack of legitimacy and fear of punitive actions. In this dismal scenario for folk medicine, the Biodiversity Act, 2002 upholds the freedom of *vaidyas* and *hakims* to gather bioresources for indigenous medical practice and requires the local bodies to keep lists of *vaidyas* and *hakims* in People's Biodiversity Registers. The Biodiversity Act and medical acts of the country should function complementarily so as to help resurrection of ethnomedicine to ensure health for all.

Keywords: *Folk healing, Ayurveda, Traditional medical knowledge, Ezhavas, Itti Achudan, Hortus Malabaricus, Uttara Kannada*

Introduction

Species that live today have evolved a variety of ways of protecting themselves from predators and parasites, large and small, in their environment. Certain fungi produce antibiotics, lethal to parasites, and secure themselves from getting infected. Higher plants evolved various classes of defensive biochemicals like alkaloids, glycosides, terpenes, saponines, cellulose, lignin *etc.* which acted as toxins, inhibitors of respiration, irritants, diuretics, emetics, mutagenics, carcinogenics, purgatives, indigestibles *etc.* (Howell, 2003; Huffman, 2009). Many animal species selectively feed on

substances of therapeutic value from nature. From creatures with brains the size of pinheads to birds, and lizards, elephants, and chimpanzees all share a survival trait – that of self-medication, by eating things that make them feel better, or prevent disease, kill parasites, or aid digestion. Somehow they know to ingest certain plants or use them in unusual ways when they need them (Shukin, 2014). Thus dogs and cats instinctively treat themselves during illness or indigestion by feeding on the *durva* grass, *Cynodon dactylon*, which induces vomiting in case of indigestion or food poisoning (Kandwal and Sharma, 2011).

Such observations in the past, and their own experiences through generations, paved the way for development of medical systems by every human society. Beliefs and practices relating to disease are the products of indigenous cultural development and are not explicitly derived from the conceptual framework of modern medicine (Hughes, 1968). Food and medicine greatly overlap in the diet, especially among the indigenous communities world over. Among the Hausa tribe of Nigeria 30% of the plant species identified as food were used in medicine. It was also found that 89% of the plants which they used for treating malaria were also used in food (Etkin and Ross, 1983; Etkin, 1996). The concept of 'functional food' first arose in Japan in 1980's when the country was faced with an aging population and increased health costs. Japan's Ministry of Health and Family Welfare prepared a compilation of 'Foods for Specified Health Use' (FOSHU). By 2002, 300 such foods got FOSHU status (Mangathayaru, 2013). At the time when antibiotics and other pharmacy products did not exist, a bulb of garlic meant a whole pharmacy industry. Garlic's therapeutic uses were known to ancient Sumerians, Egyptians and Chinese even 4000 years back (Petrovska and Cekovska, 2010). Today, garlic is considered a wonder-food for its antibacterial, antibiotic, antioxidant, anticarcinogenic and hyperlipemic effects, as source of supplements like minerals, vitamins and enzymes, for cholesterol reduction, in controlling hypertension, prevention of thrombosis and so on (-ibid-). Kassaian *et al.*, (2009) observed that type 2 diabetes mellitus can be controlled by consuming seeds of fenugreek (*Trigonella foenum-graecum*), soaked in hot water. Interestingly, an ethnobotanical study of 200 persons in Jammu showed that, 8.9% of them, who were diabetic, consumed a teaspoon of fenugreek soaked overnight in a glass of water early morning (Aggarwal and Kotwal, 2009). For blood enrichment, 70% of the surveyed subjects consumed

pomegranates and dates (-ibid-). Whether based on faith or fact, 'punicalagins' in pomegranate benefit heart and blood vessels. *In vitro*, animal and human trials showed that various pomegranate constituents prevented and reduced atherosclerosis; its juice inhibited serum ACE and reduced systolic blood pressure in hypertensive patients. Juice consumption (*via* antioxidative mechanisms) significantly reduced carotid artery stenosis and improved myocardial perfusion (Jurenka, 2008). Bittergourd (*Momordica charantia*), is well known in Indian folk healing practices and its regular use is believed to benefit diabetics. It has antidiabetic compounds like charantin, vicine, polypeptide-p *etc.* with proven hypoglycemic effects and other unspecific bioactive substances like antioxidants (Krawinkel and Keding, 2006).

Codification of traditional medical knowledge

The World Health Organization defines traditional medicine as "the sum total of the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevention, diagnosis, improvement or treatment of physical and mental illnesses (WHO, 2000)". Every human society must have developed a system of medicine, may be based on medicinal substances, incantations, magic and rituals, which to the modern world looks meaningless. Traditional Medicine (TM) is not only vital for health care, but also an income for many and integral to the community's identity (Abbott, 2014).

TM in India can be classified into codified (Ayurveda, Unani, Siddha) and non-codified (folk medicine) systems (Upadhyaya *et al.*, 2014). TM takes care of the primary health needs of about 70% of the Indian population (WHO, 2002). TM with a systematic body of knowledge in the form of pharmacopoeias, or ancient works like Ayurveda, Chinese and Tibetan medicine, Siddha, Unani *etc.* belongs to

the codified system whereas non-codified system of traditional medicine or folk medicine, is transmitted by oral means (Upadhyaya *et al.*, 2014). The codified medical systems have their beginnings in non-codified traditions (Narayanaswami, 1981). From Hippocrates onward physicians agreed that there were no certainties in medicine, only probabilities and approximations. Experience was transmitted through human sensations; the gift of observation and instinct played big role. Medicine began to move greatly toward a purely scientific orientation only with the 'stormy development of natural sciences' during the 19th century (Laqueur, 1995).

As regards codified medical tradition is concerned even the *Rig Veda*, composed in a dimly lit period of human history, contains not many details on medicinal herbs or formulations. But a holistic concept of health based on herbs is found in the Hymn XCVII. Praise of Herbs (Griffith, 1896):

*Let fruitful plants, and fruitless, those that blossom, and the blossomless,
Urged onward by Brhaspati, release us from our pain and grief.*

Soma was considered the 'King of all the plants'. The collection of a medicinal herb was more a devotional exercise:

*All Plants that hear this speech, and those that have departed far away,
Come all assembled and confer your healing power upon this Herb*

Rudra, associated with mountainous places, is extolled for his healing powers. Having a thousand remedies, he is the greatest of physicians. He has two exclusive epithets, *jalaasa* (cooling) and *jalaasabheshaja* (cooling remedies). Maruts, the sons of Rudra, are the carriers of these pure and wholesome medicines. The *Rig Veda* also extolls the Asvin brothers as divine physicians and speediest deliverers of distress in general, healing with their remedies, restoring sight, curing the sick and the maimed (Macdonell, 1917).

The *Atharva Veda* is a compendium of medicine in its various stages of evolution and contains the most primitive as well as some of the most highly developed stages of therapy. While AV stresses the extraordinary powers of charms and amulets in healing diseases it highlights importance to *Kayacikitsa* (treatment of body internally and externally), a branch of Ayurveda (Prasad, 2002).

Charaka Samhita perhaps, is the first attempt at a systematic documentation of well-organized ideas, facts and conclusions of debates on Ayurveda in the form of a *Samhita* (compendium); although its original sources are attributed to Agnivesha and beyond to Atreya, bordering on prehistory, Charaka redacted these earlier works (around 200 BC?) and Dridhaabala (4th century AD) further revised it. Charaka, in his work of codified Ayurveda, containing 120 chapters, was the first to introduce rational angle to the science of medicine (Valiyathan, 2003). *Sushruta Samhita* is a celebrated treatise on medicine and surgery in Ayurveda, its date of composition still unsettled. Vagbhata, who established a sound theoretical base for Ayurveda lived sometime in the early centuries of C E. Attributed with the authorship of two classics *Astamgahridayasamhita* (AH) and *Astangasamgraha* (AS), he was considered a Buddhist, because of his explicit praise for the Buddha in his texts, under the title 'Unprecedented Teacher'. AH's primary focus is on internal medicine. Both the AH and the AS became extremely popular in Kerala (Menon, 2008, Valiathan, 2010).

The Great Epics: a tale of two medical systems

Ayurveda would have been well known during the Epic period. The numerous plants that figure in *Ramayana* are also well known Ayurvedic plants, such as *Ankola* (*Alangium salviolifolium*), *Arjuna* (*Terminalia arjuna*), *Ashoka* (*Saraca asoca*), *Aswatta* (*Ficus religiosa*), *Bilva* (*Aegle marmelos*), *Chandana* (*Santalum album*), *Chuta* (*Mangifera indica*), *Devada-*

ru (*Cedrus deodara*), *Dhava* (*Anogeissus latifolia*), *Jambu* (*Syzygium cumini*), *Karnikara* (*Cassia fistula*), *Khadira* (*Acacia catechu*), *Kimshuka*, *Plaksha* (*Butea monosperma*), *Kurantaka* (*Barleria prionitis*), *Lodhra* (*Symplocos racemosa*), *Madhuka* (*Madhuca indica*), *Nyagrodha* (*Ficus bengalensis*), *Pippali* (*Piper longum*), *Punnaga* (*Calophyllum inophyllum*), *Salmali* (*Bombax ceiba*), *Shami* (*Prosopis cineraria*), *Surakta* (*Pterocarpus santalinus*) etc. (Source: Flora of the Indian epic period; From Wikipedia). At the same time the identity of *Sanjeevani* and few other herbs used for reviving critically wounded Lakshmana continues to be a mystery. Prescribed by Sushena, introduced as a *vanara-vaidya* (monkey physician), as Ravana's *vaidya* and as father-in-law of Sugriva, *Sanjeevani* could have been at the best a herb of folk tradition or otherwise a myth. For the world of science *Sanjeevani* remains a mystery. The Epics hardly any mention of medicines used in the folk tradition- by indigenous tribes to semi-divine beings like Nishadas, Kinnaras, Kiratas, Yakshas, Nagas, Danavas, Daityas etc. Flora of *Mahabharata* also has similar elements as in *Ramayana*, again with least mention of folk medicines.

Rise of priesthood and fall of physicians in social hierarchy

Rise of Brahminic priesthood and importance given to ritualism during the early half of first millennium BC witnessed hardening attitudes towards the medical practitioners because of the latter's contacts with contagion, impurity and pollution (Chakravarti and Ray, 2011). Despite having wealth of medical formulations in it the *Atharva Veda* relied more on charms and prayers than on medicines and surgery, for maladies ranging from manias to poisonous stings and bites, fevers and fractures (Bloomfield, 1897). The divine Asvin brothers were extolled as great healers among *Rig Vedic* gods (Macdonell, 1917) had fallen in status mainly because they were physicians. *Taittiriya Samhita* of the *Black Yajurveda*

and the *Satapatha Brahmana* of the *White Yajurveda* denounced the Asvins:

The gods said of these two (Asvins): Impure are they, wandering among men as physicians. The physician is impure, unfit for sacrifices. Therefore, the brahmana must not practice medicine (Taittiriya Samhita). The gods said to the Asvins: 'We will not invite you; you have wandered and mixed among men, performing cure''

(*Satapatha Brahmana*;
Chakravarti and Ray, 2011)

Rise of the mixed castes as physicians

The denouncement of the physicians amounted to rise of mixed castes in the medical profession Whereas Charaka had eulogized the higher ranking of physicians as "earned not inherited", as in *Charaka Samhita*, Vol.6, their social status in reality kept tumbling down with time from their exalted position in the *Rig Veda* to *Atharva Veda* and further down to the status of Shudras by the early historic period. *Manusmriti* mentions about Ambastha, a mixed caste of Brahmana and Vaisya who were specialized in the art of healing (Buhler, 1886). However, being in relatively higher order than other physicians of lower order, Ambashtas were preferred by the Brahmins to others, the proof for existence of *vaidyas* of lower orders as well, mostly the practitioners of non-codified folk medicines.

Buddhism and systematic integration of folk medicine into Ayurveda

Buddhism in India had deep correlation with human suffering and illness. Buddha himself was a physician and surgeon. Numerous kinds of traditional medical practices like use of salves, astringent decoctions, fumigation; even excision of proud flesh in chronic ulcers etc. were approved by Buddha, including the use of purgatives for eliminating excess of *doshas*. (Valiathan; <http://textofvideo.nptel.iitm.ac.in>).

On the importance of taking care of the sick, Buddha appealed to the monks:

“You, O monks, have neither a father nor a mother who could nurse you if you do not nurse one another, who, then, will nurse you? Whoever, O monks, would nurse me, he should nurse the sick” (Zysk, 1998).

Ayurvedic medicine gained many of its major features from the work of heterodox ascetics and the Indian medicine progressed significantly during early period of Buddhism. The Buddhists imbibed the concepts of Ayurveda and with Buddhism these concepts spread far and wide. Buddhist *Samghas* are considered to be the world’s oldest and most widespread social institutions involved with treatment of the sick. The Buddhist *viharas* also became centres of healthcare for both the monks as well as for people. The famous surgical procedure of removal of the cataract described and practiced during Susruta’s time reached China, probably through Buddhist pilgrim monks than through Ayurvedic physicians from India (Birnbaum, 1979; Zysk, 1996 & 1998). Derogation of physicians and their exclusion from the Brahmanic social structure and religious activities implies that they existed outside mainstream society and were probably organised into sects who roamed the countryside as ‘roving physicians’. They earned their livelihood by administering cures and increased their knowledge by keen observation and by exchanging medical data with other healers whom they encountered (Prasad, 2007; Udwardia, 2000). The Buddhist *Jataka* stories have rich accounts of medical cures by physicians and surgeons.

Revival of Hindu medical profession

Medical profession regained respectability among the Hindus by early 6th century once again within the Brahminic religious institutions. The Brahmanical/ Vaishnava temple must have modelled the medical facilities within its premise on the well-established Buddhist practice of having an *arogyavihara* within

the monastery. *Charaka Samhita* and the *Susruta Samhita*, emerged not only as the main source of the medical knowledge but also as texts reflecting the Buddhist secular traditions. There are also epigraphic evidences of Shiva temples accommodating medical centres. From South India was reported several instances of *athurasalai* (hospitals) within Hindu religious premises (Chakravarti and Ray, 2011).

The issues and objectives

Despite the widely acknowledged richness of traditional healing practices in India, of the co-existence and complementarity of codified and oral traditions of medicine through generations, a paradigm shift towards smothering of the folk healing practices as well as of traditional Ayurvedic practitioners, due to lack of requisite qualifications, has been happening, necessitating the current study. Major part of the study is aimed towards evaluating these important but informal sectors of health care, in an historical perspective, through case studies. The major focus for the case study is on tracing out and evaluate the role of Kerala’s Ezhava community in medical practice. Although affected badly by social stratification that prevailed in Kerala through centuries the Ezhavas were able to carry on with their healing practices unimpeded, until drastic change of situation more in the post-independent period. For developing a comparison of the present status of folk healing and to evaluate its contemporary role in the society a case study involving a cross section of folk healers or ethnomedical practitioners in Uttara Kannada district of South Indian west coast was conducted. After examining various socio-cultural and regulatory frameworks on medical practice in India, and on realizing the great role of indigenous health care systems in contemporary society, the article envisions how best ethnomedical practices can be revived and brought into a legitimate system to complement the medical pluralism that has been the hall mark traditional healthcare in India, without in

any way disparaging the modern systems of medical care or challenging existing regulations and norms for medical practice in the country.

The Methods

- The methods of socio-cultural studies, mainly through literature survey, have been employed to unravel the role and situation of medicine in ancient India with specific focus on Kerala's Ezhava community.
- Much insight into the Ezhava medical system of ancient Kerala has been obtained from the descriptions provided in the late 17th century botanical treatise *Hortus Malabaricus* authored by Hendrik van Rheede.
- Historical documents and legislations of the British colonial period and of independent India have been examined before arriving at any conclusions related to the current weakened status of folk medical practice and its loss of legitimacy.
- A case study on folk medicine has been carried out to examine its contemporary status in the Uttara Kannada district of Karnataka, towards the centre of South Indian west coast. The study was carried out under the support from Karnataka Biodiversity Board (KBB).
- The purpose of the study in Uttara Kannada was explained through the media, Prior Informed Consent of the folk healers taken, before commencing interviews with them on details of their folk healing practices. The details of the formulations explained by the healers who participated in the exercise (46 persons) are systematically documented and the same passed on to the KBB for safe custody.
- The provisions of the Biodiversity Act, 2002, and Biodiversity Rules, 2004 of the Government of India have been examined and explored to see whether any scope exists for steering out genuine folk medical practices back into legitimacy with

stress on documentation and certification by local bodies within the framework of the Act.

Uttara Kannada is the northern most coastal district of Karnataka, situated south of Goa State. Large parts of the district are covered with hills of the Western Ghats, which are at the lowest, seldom exceeding 600 to 700 m in height. The coastal zone is narrow and rugged, its continuity interrupted with low hills and sprawling backwaters at the confluence of westward running rivers with the Arabian Sea. The district is clad in a variety of forests ranging from tropical evergreen to moist deciduous and dry deciduous kinds, the latter bordering the drier Deccan Plateau. A large number of human communities, traditionally engaged in agriculture (including shifting cultivation in the past) and horticulture, cattle keeping, forest produce gathering, fisher-folks and traders of Hindu, Muslim and Christian communities live in this district, which is a blend of modernity in the towns and rustic life in the villages. Forests being everywhere (almost covering 70% of Uttara Kannada's 10,200 km² area), and villages nestled in the valleys, and with an extensive coastline of sandy beaches and rocky shores, all rich in characteristic vegetation, the people have strong traditions of folk medicine, which despite dominance of modern biomedicine and Ayurveda next in order, continue to be the recourse for good percentage of the population. The folk healers were interviewed on their ethnomedical practice during January 2015, under the aegis of the KBB.

Results and Discussion

Buddhism's role in promotion of medical practice by the subaltern

South India came under Buddhist influence from the time of Ashoka (3rd century BCE) with the visit of Buddhist monks (*arhats*). Buddha Dharma was propagated through monasteries and learning centres and medical services were rendered from the monasteries by knowledgeable monks. Buddhism

found wide acceptability among the masses as it opposed the oppressive caste system of Hindus, as is evident from the Sangam Tamil works of early centuries CE. Its decline from 7th century started due to various reasons which weakened the Buddhist Sanghas; the major reason was the revival of Brahminism. However, despite its weakened state Buddhism lingered in the south until the 14th century (Murthy, 1987). As far as Kerala is concerned, Murthy subscribes to the view that several temples bearing the name *Sattan-kavu* and *Aiyappan-kovil* etc. which exist to this day, were former Buddhist shrines. *Sattan* (colloquial of *Sastha*?) was a name for Buddha and *kavu* refers to a garden or a monastery. Hence *Sattan-kavu* refers to a monastery of Buddha (-ibid-). It is well known today that the *kavus* of Kerala are worship places. *Kavus* are exclusively sacred groves, or sacred grove with small shrines or temples, or temples which have lost their groves, as many are today (Chandran *et al.*, 1998).

Vagbhata II, a Buddhist monk and one of the pillars of Ayurveda, is believed to have lived in Kerala for several years around 6-7th centuries CE (Sadasivan, 2000). Unique importance in Kerala, especially of *Ashtangahridaya*, speaks of the influence of monastic Buddhism in Kerala that time (Wolfgram, 2009). The flourish of Sanskrit in Kerala, beginning in 5-6 centuries C.E. (Variar, 1985) coupled with social emancipation credited to the spread of Buddhism, could have conferred much advantage to its population in learning Ayurvedic texts, where this classical medical system became a living tradition. Valiathan, himself an eminent physician and surgeon of the allopathic system, and author of several works on Ayurvedic history, endorses the view that Ayurveda in Kerala got tremendous enrichment through 'Buddhist channels' (<http://textofvideo.nptel.iitm.ac.in>) as given in excerpts below:

- Ayurveda is practiced all over India whereas the regional variation like *Panchakarma* is being

practiced in Kerala and Rajasthan only.

- Everybody had access to Ayurvedic ideas; there are no restrictions; otherwise for initiation into Ayurveda Brahmins were preferred; Khsatriyas and Vaishyas were accepted; but Shudras were not accepted. If they were accepted, they were grudgingly accepted. For Buddhist there was no restriction whatsoever; everybody was accepted.
- Sanskrit was taught to learners of Ayurveda; there was no restriction in Sanskrit learning through Buddhist channels. Regional languages were also used.
- Pre-existing regional practices in healthcare, were adopted into medical practice. Typical local practices of Kerala adopted into Ayurveda include: *Dhara*: Use of warm medicated oil on body, *Pizhichil*: Using a cloth soaked in warm medicated oil for massage, etc.

Ezhavas' links with Buddhism, Sanskrit and Ayurveda

Consistent with the teachings of Buddha the Buddhist monasteries of the south had often dispensaries for treating the sick. Kerala, nevertheless, is expected to have a much older medical tradition of its own, due to the richness of vegetation and the isolation of the region from the rest of the country due to the high rising Western Ghats to the east. The Ezhavas constituting currently the largest Hindu community of Kerala, are have their own medical tradition, although their main traditional occupations were agriculture, palm cultivation, toddy tapping etc. Introduction of the concepts of Ayurveda, attributed to Vagbhata, would have immensely benefited the community, who would have blended their own medical system with that of Ayurveda. Buddhist Ayurveda itself had freely absorbed local medical traditions from various parts of the country. Sadasivan (2000) affirms that under the patronage of Vagbhata, *Ashtangasamgraha* and *Ashtangahridaya* became the handbooks of Ezhava physicians.

The decline of Buddhism from the south by 8th century CE aggravated caste discrimination, a situation that prevailed in Kerala for about the next 1000 years. The inflexible laws governing social stratification in Kerala never found expressions better than that of Van Rheedee recorded in the Preface to the Vol III of *Hortus Malabaricus* composed in 1677:

This law (referring to social divisions) “demands that everyone shall follow a special mode of living by virtue of his birth, is observed so rigorously, so strictly, and so scrupulously to the present day that no mortal man could finally alter even a trifle of this law.... Thus farmers and fisherman, through the whole course of the years and the flight of time, will never beget any but farmers and fisherman.”

At the same time one would wonder, how despite such fatal laws governing caste system the Ezhavas continued their medical profession and excelled in it. Rheedee's Preface has the answer:

Through this virtually fatal law, however, no professions or crafts ever get lost, and all peoples owing to the accident of their birth are only occupied with those things to which this fatal law through descent from their ancestors has condemned them. And hence, being rendered more and more capable through this continuous instruction of their elders and relations, they finally acquire the striking and exquisite knowledge of their profession...”

Itti Achudan, the Ezhava vaidyan who had the crucial role in the composition of the botanical classic *Hortus Malabaricus* explicitly states in his certificate of 20th April 1675 (printed in *Hortus* Vol I) that he was a hereditary Malayali physician (*Sampradayamulla Malayalavaidyan*) and the details of plants such as ‘names, medical virtues, and properties of the trees, plants, herbs, and convolvuluses’ narrated to Emmanuel Carneiro, the interpreter were from ‘our book’. Carneiro in turn termed the expression ‘our

book’ as the ‘famed book of the Malayalee physician’ (Heniger, 1980).

Historians of Kerala found numerous cases of Ezhavas physicians of 18th and 19th to early 20th century, known for their scholarship in Ayurveda and Sanskrit. Despite the fatality of the caste system in a feudal age and probable prohibition on learning Sanskrit they made several contributions towards development of Ayurveda in Kerala. Kerala historian Gopalakrishnan (2000) states that the Namboodiris (Kerala Brahmin caste) learnt medicine from Buddhists. Expert Buddhists were converted as Namboodiris as well. Through centuries Kerala had numerous Ezhava families practicing medicine. Some of the distinguished vaidyas were: Uppotu Kannan (born 1825) is credited with the authorship of *Yogamritam*, a popular work in Kerala based on the same text in Sanskrit by Ashtavaidyans of Kerala. He wrote an excellent exegesis for *Ashatangahridaya*. His work Bhaskaram is a widely referred commentary (Variar, 1985). *Oushada Nighantu* by Tayyil Krishnan Vaidyan is another scholarly work. The 18th century had about 300 celebrated Ezhava Ayurvedic physicians; about 100 were court physicians during 18th and 19th centuries. Vaidyas from the Chavarkot family of Kollam, were the chief Ayurvedic physicians of the Travancore royal family during 18th and 19th century, of whom Marthandam Vaidyan was specially named. Cholayil Kunjmami Vaidyan was associated with the Cochin royal family (Sadasivan, 2000). Gopalakrishnan (2000) highlighted the important role of Sanskrit in mastering Ayurveda. It was widely believed that the lower castes could not have gained mastery in Ayurveda as they were not allowed to learn Sanskrit. Malayalam scholar N.V. Krishna Warriar (1989) tries to dispel this notion:

“it does not seem to be historically true to equate Sanskritisation of South India as Brahmanisation, as done by some. It was the Baudhas and Jainas, who stood outside the

purview of the *varnasrama* system that gave leadership to the propagation of Sanskrit in Ceylon and South India, and not Brahmins, and they were not averse to give Sanskrit education to non-Brahmins. Just as Sanskrit was indispensable for Brahmins for the study of Vedas and Vedantas, Sanskrit was required for non-Brahmins to study result-oriented Sastras like medicine, astrology and architecture.

Van Rheedee on the rich biodiversity and health care of the people of Malabar

During his journeys through Malabar (Kerala) during the latter half of the 17th century Hendrik van Rheedee, the Dutch military officer who became the Governor of Cochin, could not help admiring biodiversity rich landscapes and the good health of the people:

“On the way I observed large, lofty, and dense forests they were pleasing through the marvelous variety of the trees, which was so great that it would be difficult to find two trees of the same kind in the same forest... I rather frequently saw ... many ivies of various kinds clinging to one tree and moreover shooting up in the very branches of the trees, and also various plants against the bare trunk, so that it was often very pleasant to see on one tree displayed leaves, flowers and fruits of ten or twelve different kinds... not only the fertile soil extending in the plains was thus adorned, but that even the rough rocks and the steeps of the mountains were equally full of luxuriant forests ” (Rheedee’s Preface to vol. III of *Hortus*).

On the good health of the people of Malabar, Rheedee remarked:

“They usually live to a very great age and their health is cared for by native physicians, who do not fetch medicaments from other regions, or at all events as few as possible, since they are content with only those medicaments

which their own region supplies bountifully, a custom which is imitated with success by the Europeans in those places.”

Rheedee was critical on the practice of getting medicines from Europe for the Dutch in Malabar:

“The Dutch, however, who are staying there under the auspices of the East India Company, indifferently use medicaments, which after being fetched from those regions, are conveyed via Persia and Arabia to Europe and thence again by sea to India, in almost decayed and spoiled condition, not without a waste of large sums, which are spent without any advantage on this matter.... Moreover it would involve great profit for the Illustrious East India Company, which indeed would be able to save those expenses which it spends on transporting medicaments”.

***Hortus Malabaricus*: A unique tribute to Ezhava botany and medicine**

Itti Achudan, an Ezhava physician of 17th century, had played the key role in furnishing most of the valuable data on 780 plant taxa (691 modern species) for the compilation of *Hortus Malabaricus* by Van Rheedee. Three Konkani priest-physicians, Ranga Bhat, Vinayaka Pandit and Appu Bhat, also supplemented the information. A certificate given by Achudan in his own hand writing, attached to the Vol-I of *Hortus* authenticated that the “disclosed the names, virtues and properties of trees, plants, herbs and lianas as they are written in our book and as I have observed through long experience and practice”. Through his contribution for this monumental work Achudan, not only unraveled to the world the botanical treasure of Malabar but also gave rare glimpses of the rich knowledge of the Ezhava medical men on plant diversity ranging from ferns to angiosperms, their medical properties and uses. But for Achudan’s participation the mission to compose *Hortus*, would have been almost futile despite the efforts

of the Konkini vaidyas who gave more of textual knowledge based on their Ayurvedic text *Maha-Nighantu* or *Great Lexicon*. The 12 volumes *Hortus*, in Latin, were published between 1679-1692. *Hortus*, became an important pre-Linnaean classical botanical composition in Latin. Its translation into English was published in 2003 by K.S. Manilal.

Hortus Malabaricus is considered as the earliest example of systematic scientific documentation of folk medicinal practices of intangible heritage from anywhere in Asia. It is the oldest comprehensive printed book on the natural plant wealth of Asia, compiled and published in Latin by Van Rheedee. This 12-volume treatise, contains illustrations of 742 plants from 691 modern species, together with their descriptions and medicinal and other uses. It is perhaps the only authentic evidence of the ancient ethno-medical knowledge of Kerala, and that too culled out from the hereditary palm-leaf manuscripts of Itty Achudan. Whereas the Konkini Brahmin collaborators depended on an *Ayurvedic Nighantu* for the plant names, Achudan “disclosed the names, virtues and properties of trees, plants, herbs and lianas as they are written in our book and as I have observed through long experience and practice” (quote from his certificate in Vol. 1). Professor Manilal, from the University of Calicut, who has studied the various aspects of the original book for more than 40 years, wrote the English translation (in 2003) about 325 years after the publication of Vol. I in Latin in 1678.

In the words of Mohan Ram (2005):

“The work describes plants with multiple uses as well as with medicinal properties. It includes modes of preparation and application, based on pre-Ayurvedic knowledge of the ancient, renowned, hereditary physicians of Malabar. The ethnomedical information presented in *Hortus Malabaricus* was culled from palm leaf manuscripts by Itty Achudan, a famous physician of Malabar at that time.”

Achudan Vaidya: underplay of a pre-Linnaean legend

For the first time in Kerala’s history, Achudan’s certificate in the extinct Kolezuthu script of Malayalam *Hortus* became the first document to be printed in the world in that language, along with its rewriting in modern *Aryaezuthu* script. This certificate, apparently, was included more for the purpose of silencing his critics, by van Rheedee, more of a military person than a botanist or ethnobiologist, whose credential for authorship of the monumental *Hortus* was not convincing for contemporary scientists. He was, in the words of Fournier (1980), “no great botanist.... Not knowing the first thing about systematic botany”, but was a ‘successful organiser, who was able to bring together the people who could realize his plans’. Nevertheless, Rheedee set high standard for his work and achieved the same, making *Hortus* ‘the most important and reliable source on the flora of Malabar, indeed until the end of the eighteenth century, on the flora of the whole of India’.

Rheedee would have instructed his collaborators, including the Konkini Brahmins, regarding the contents of certificates to be given by them for *Hortus*, mainly to define their specific contributions for the project, as a formal authentication, probably needed for approval of his work by the biologists in Europe. Achudan’s document mentions his profession as *vaidyan*, his lineage, address and stated unambiguously the certificate was given mainly to dispel the doubts of the people concerned, about his role in the book project. Having served such a purpose of authentication, except for the elaborate description of Malabar, its flora, society and about the methodology of work with the help of native physicians, in the Vol. III of *Hortus*, nowhere else occurs any acknowledgement towards the local physicians, including the attribution of species to their respective individual credits. Instead, volume after volume of *Hortus* contained prefaces and profuse

statements of dedication to honorable members of the Dutch aristocracy, dukes and barons, which is uncommon to scientific writing.

Rheede, though underplayed the specific role of Achudan, in his Preface to Vol. III describes the excellence of botanical knowledge the low caste vaidyas had accumulated through “continuous instruction of their elders and relations” so that “they finally acquire the striking and exquisite knowledge of their profession which they now display.” Perhaps through “accident of birth” these local men were to perform their duties “with a more than stoic inevitability”. Rheede seems to have taken for granted this fatalism associated with lower castes of Malabar, and with his passing remarks and affixation of the necessary certificates of authentication, implying data has been obtained through ‘order’ (the term ‘order’ is explicit in Achudan’s certificate). Beyond that the providers of data did not merit any further commendation from Rheede, a fact reflected in the commentary of Heniger (1980) “Although the twelve impressive folio volumes of the *Hortus Malabaricus* are due to the exertions of his scholarly and skillful collaborators, with the Preface Van Reede has earned for himself a place in the history of tropical botany.” In the Preface to the third volume Rheede admits that the first two volumes had met with a good deal of criticism, including what justified him in having his own name printed, as the first author, on the title page. Most impressive contribution towards popularizing the greatness of Malabar botany is through the English translations of *Hortus* with annotations and use of modern botanical nomenclature by K. S. Manilal, published by University of Kerala in 2003. Manilal (1980) had already shown greater sense of certainty as regards the role of Achudan “who provided most of the information regarding the medicinal power of the plants described in *Hortus Malabaricus*,” based on local medicine and Ayurvedic medical practice as contained in his family book. One could only wonder

why a European like van Rheede had to take all such trouble regarding publicizing the works of indigenous botanists of the time when it was in his ambit of power to execute things by order alone. Indeed, the Rajas of Cochin had the onus of preserving the heritage of Itti Achudan or his like, including his precious family texts and the *Great Lexicon (Maha-Nighantu)* used by the Konkini Brahmins. Manilal’s search for these valuable indigenous medical texts for about 18 years, after the passage of over three centuries since *Hortus* publication, went futile, as nothing remained of them. Considering the indifference of the Cochin rulers towards these matters rich tributes need to be paid Van Rheede’s great efforts, immortalizing Achuden and other *vaidyas* of the time through the 12 volumes of *Hortus*. Notably, *An Interpretation of Van Rheede’s Hortus Malabaricus* published by Nicolson *et al.* (2008) in *Regnum Vegetabile*, Vol 119, was acclaimed as the only book by Indian authors published in this series till date and considered a classic, ‘essential for any study on the taxonomy of South Asian and South East Asian plants’.

The Malayalam binomial nomenclature

The robustness of classification of plants by Ezhava physicians, of the time is very well reflected in the nomenclature itself, which may be termed a pre-Linnaen binomial in the reverse order (species equivalent preceding genus equivalent). Environmental historian Richard Grove (1995) reflects on the matter (Grove also had personal discussions with this author on ‘Ezhava botany’ during his visit to Uttara Kannada, and on earlier occasions):

“Most important for the subsequent history of tropical botany, the insight of the Ezhavas into the affinities among a large number of plants in the *Hortus malabaricus* are revealed by the names they gave to those species which have the same stem and to which one or more prefixes are added: for example Onapu, Valli-

onapu and Tsjeri-onapu. The names also give us a considerable amount of incidental sociological material. For Onapu, Onam is the harvest festival in which this particular flower would be used. The names thus preserve the true social affinities of the plant name instead of isolating them in a contextless arbitrary category, as well as probably allowing a truer affinity in terms of pharmacological properties.”

The respect of the pre-Linnaean European systematic botanists, towards the Ezhava system of classification, has been highlighted by Grove (1995). Arnold Syen and Jan Commelin, while arranging the sequence of plants in *Hortus Malabaricus*, retained the order of sequence which the Ezhavas followed on the assumption of their relationships “even if the Europeans knew this to be contrary to their own classification system.” Linnaeus, in particular, in 1740, fully adopted the Ezhava classification and affinities in establishing 240 entirely new species as did Adanson, Jussieu, Dennstedt, Haskarl, Roxburgh, Buchanan and Hooker (-ibid-).

After closely examining the Malayalam nomenclature of plants in the *Hortus*, especially used by the Ezhavas (presumably from the family texts of Itti Achuthan), it

is not unreasonable to postulate that Linnaeus, known as Father of Botany, who published his monumental work *Species Plantarum*, in 1753, 75 years after publication of the first volume of *Hortus Malabaricus* was influenced by the Ezhava system of nomenclature of plants. The very look at Achudan’s system of naming of the closely related members of the ginger family Zingiberaceae (Table-1) is contemplative and reflective of the botany and relationships of the plants concerned. Usually a typical taxon of the related species is given a single name (the stem of the name); for instance eg. *Alpam* (*Apama siliqosa* Lam.; *Champacam* = *Michelia champaca* L., *Manga* = *Mangifera indica* L. etc.) In the case cited in detail as in Table-1, cardamom is called *Elettari* (as in *Hortus*) its normal Malayalam name, designated as *Elettaria cardamomum* by Linnaeus. All the other Zingibers have in the *Hortus* the stem of the name as ‘Kua’, which is equivalent of genus. The others of the ginger family are designated as *Tsjana-Kua*, *Malan-Kua*, *Manja-Kua*, *Manjella-Kua*, *InschivelInschi-Kua*, *KatoreInschi-Kua* etc. The last two names have attachments that sound like sub-species (*Inschivel* and *Inschi*). Obviously European biologists, of the colonial period, placed at the summits of wealth biological materials from all parts of the planet, and with their

Table 1. The binomial equivalent of Malayalam names used for members of Zingiberaceae in *Hortus Malabaricus* (Kannada names collected during Uttara Kannada case study also given)

Malayalam names from <i>Hortus Malabaricus</i>	Kannada names	Scientific name
Elettari	Elakki	<i>Elettaria cardamomum</i> (L.) Maton
Tsjana-Kua	Kottam, Vyadhi	<i>Costus speciosus</i> (Koenig.) Sm.
Malan-Kua	Nela-Sampige	<i>Kaempferia rotunda</i> L.
Manja-Kua		<i>Bosenbergia rotunda</i> (L.) Mansf.
Manjella-Kua	Arishina	<i>Curcuma longa</i> L.
Inschivel Inschi Kua	Shunti	<i>Zingiber officinale</i> Rosc.
Katore Inschi Kua	Agaleshunti	<i>Zingiber zerumbet</i> (L.) Rosc.
Mala Inschi Kua		<i>Alpinia nigra</i> (Gaertn.) B.L. Burtt.

linguistic superiority and managerial skills had greater advantage, in formulating the globally accepted binomial nomenclature, unlike the indigenous Ezhavas, socially oppressed and for centuries not allowed to use anything beyond the primitive *Kolezethu* Malayalam and ‘smuggled Sanskrit’ learnt through the informal *kudi-pallikootams* (home schools) run by *Asans*. The script and caste went together in Malayalam, *Kolezethu* for lower castes and *Aryaezuthu* (meaning ‘script of nobles’) for upper castes. From early 19th century *Kolezethu* faded away with the British universalizing education through the government schools, and also through the Basel Mission schools founded by German missionaries. It is likely that texts of Achudan, in palm leaf bundles, having perhaps no successors to follow him, would have turned redundant and undecipherable, leading to neglect and loss with the passage of time. Whereas Achudan’s saga was immortalized through *Hortus* by Van Rheede, rest of the subaltern knowledge on traditional medicine in Kerala would have faded away with time due to loss of manuscripts, lack of successors and the Indian Medical Acts of later times

denying legitimacy for persons practicing without approved qualifications and registration. Retrieval, scrutiny and legitimization of centuries old medical knowledge, still lying dormant in the attics of old houses in palm leaf manuscripts, or through family lineages in the cases of hereditary *vaidyan*, using clues through the Peoples Biodiversity Registers (Kerala is most successful in the country for PBRs completed, in almost every panchayat, under the guidance of one of the most active State Biodiversity Boards) might lead to new vistas of traditional medical knowledge.

The Uttara Kannada Study of Folk Healers

The kind of diseases and other health related contingencies treated by 46 healers were recorded and details of the medicines prepared kept in the safe custody of the Karnataka Biodiversity Board. All the persons, from diverse ethnic groups, who voluntarily attended the traditional knowledge documentation programme belonged to the Hindus. The details regarding the number of persons attended, ethnic group-wise and their traditional occupations are given in the Table-2. The type of health problems which the

Table 2. Ethnic group-wise numbers of folk healers and their traditional occupations in Uttara Kannada case study (the folk healers are not full time practitioners of medicine)

Ethnic group of healers	No. attended	Traditional occupations (historical)
Brahmins		
Havik Brahmins	28	Priesthood, horticultural gardens, astrology
Non-Brahmin Hindus		
Halakki-vokkals	6	Growing rice and vegetables, forest produce gathering
Namadharis	4	Agriculture, palm tapping, forest produce gathering
Kumri-marattis	3	Shifting cultivators, extraction of palm starch from <i>Corypha</i> , honey and forest produce collection
Kari-vokkaliga	1	Shifting cultivators, farm laborers, forest produce gathering
Gowli-dhangars	1	Nomadic cattle keepers in forest tracts, selling of milk and milk products
Lingayats	3	Agriculture and trade
Total	46	

healers claimed expertise in treating, using locally made herbal formulations are given in Table-3.

Of the folk healers interviewed Havik Brahmins (28) outnumbered all the non-Brahmin ethnic groups (18). This has no correlation however with the district's population structure. The Havik Brahmins constitute an illustrious group of the population in the district

given to primarily pursuits like priesthood and horticulture. They are traditional experts in raising multi-storied gardens with arecanut, coconut, black pepper, betel vines, nutmeg, cardamom *etc.* in the valleys of Western Ghats. The farming section of Haviks, in general, combines hard physical work with several intellectual pursuits. Members of the

Table 3. Details of folk healers interviewed and kind of health problems attended to during a sample study in Uttara Kannada district.

Health problems attended to	No. of healers from ethnic group		Non-Brahmin caste
	Havik Brahmins	Non-Brahmins	
Abscess	2	2	Halakki, Gowli
Eczema	6	1	Halakki
Inflammation below nails	1		
Leucoderma, freckles	3		
Skin related problems	12	6	Karivokkal, Kumri, Lingayat
Skin- ringworm	1		
Anaemic conditions	3		
Asthmatic problems	2	4	Namadhari, Halakki, Lingayat
Backache	1		
Body pain	1		
Rheumatic joint pains	10	4	Halakki, Karivokkal, Kumri
Bone fracture, dislocations- humans	3	3	Karivokkaliga, Kumri
Kidney stones	2	3	Halakki, Karivokkal, Kumri
Bile stone	1		
Liver problems	1		
Bleeding wounds; clot concussion	1	1	Namadhari
Blood pressure	1		
Cholesterol reduction		1	Karivokkal
Heart related	1		
Jaundice	10	5	All other castes
Open fontanelle- babies		1	Halakki
Miscarriage	2	1	Halakki
Promoting lactation - mothers	2		
Pregnancy related sickness	1		
Skin boils	1		
Skin- psoriasis	1		
Varicose veins	2		
Burns and removal of burn scars	3		

Cancer	3		
Cancer- leukaemia	1		
Cancer- liver	1		
Chikungunya	1	2	Karivokkal, Kumri
Dengue	1		
Diphtheria	1		
Cold, cough, fever	2	1	Namadhari
Fever- malarial	1		
Fever- mumps related	1		
Phlegmatic troubles	2		
Throat-ache, tonsillitis	6	3	Karivokkal, Namdhari
Thyroid problems	1		
Eye - cataract	1	1	Lingayat
Eye- redness, irritation	1		
Eyesight weak	1		
Constipation	1		
Dysentery, diarrhea	3	2	Halakki, Namadhari
Vomiting, diarrhea		1	Namadhari
Gastric problems- digestion	2	2	Karivokkal, Kumri
Piles	6	2	Halakki, Karivokkal
Stomachache, stomach ulcer	3	2	Halakki, Namadhari
Worm infestation	1		
Urine- burning sensation	1		
Hernia		2	Kumri, Lingayat
Herpes	1		
Diabetes	4		
Mental problem		1	Halakki
Dullness- children		1	Lingayat
Ear infection	1		
Numbness	1	1	Karivokkal
Obesity	1		
Oedema- feet	1		
Pain- navel		1	Gowli
Gynaecological - fertility	9	4	Halakki, Karivokkal, Lingayat, Kumri
Gynaecological related	12	4	All other castes
Infertility- male		2	Namadhari
Hairfall, hair-growth	4	1	Karivokkal
Headache	1		
Mouth ulcer	1		

Scorpion stings	2		
Snake bite	1	2	Halakki , Gowli
Paralysis	1	3	Halakki, Karivokkal, Lingayat
Touch sensation diminished	1		
Toothache		2	Halakki, Namadhari
Tuberculosis		1	Lingayat
Septic wounds		1	Namdhari
Bone fracture, dislocations- cattle	2	3	Halakki, Namadhari, Kumri
Cold - cattle		1	Halakki
Liver problems - cattle		1	Halakki
Foot and mouth disease - cattle	1		
Gynaecological - cattle	2		
Injuries - cattle	1		
Maggots in wounds - cattle	1		
Panther bite- cattle		1	Gowli
Skin problems - cattle	1	1	Gowli
Sprain - cattle		1	Gowli
Abscess in udder (cows, buffaloes)	2		

community have good levels of education and many, well versed in scriptures, officiate as priests for almost all Hindu castes, unlike most other Brahmins. Their rustic traditional homes, blending with the evergreen forests around, have such home gardens, which at the outset appear like domesticated wilderness, but are composed of ornamentals, vegetables, nutraceutical and medicinal plants as well as of semi-wild and wild fruit trees like pickle mango varieties, *Garcinia*, *Artocarpus lakoocha* (Vate-huli), jamuns, etc.

Many Havik Brahmins, render yeoman services to the community around through healing and health counseling. The vaidyas interviewed, though are not qualified to practice legally, render almost free medical services using herbal medicines. They have sound knowledge of the nutraceutical importance of even weeds and wild plants, compared to most others interviewed. Some of the distinguished practitioners of herbal medicines have epistemological approach to herbal cure, probably based on generations of

keen observations as well as under the influence of Ayurveda. Such approach have made them confident in dealing with patients suffering from cancers, bile stones, burn scars etc. However, for conclusive proof on the efficacy of their treatments interviewing patients is essential.

Of the non-Brahmin healers were few persons from Halakki-vokkals, a community of small scale farmers growing rice and vegetables, the latter mainly for sale. They are well known as traditional healers and some of them like the Halakki-vokkal *vaidyas* of Belamber in Ankolataluk of the district earned good name for treating paralysis. Other community *vaidyas* who volunteered to attend the documentation programme were in small numbers and therefore all of them are grouped under non-Brahmin *vaidyas*. Table-3 provides comprehensive picture on the array of health problems which these traditional healers have been handling. In a district like Uttara Kannada, full of forests and rugged terrain, and the states'

inability to provide decent healthcare in the interior places the local healers had entrenched themselves as inevitable components of the society. As connectivity is on the increase, and with greater spread of education the sway of biomedicine and Ayurveda is on the rise. Most *vaidyas* are elderly people and their children tend to leave their homes after education, in search of better prospects of employment elsewhere. The *vaidyas* themselves are losing interest for fear of punitive action from authorities as they are still outside the realm of legitimacy.

Legitimacy of traditional medical knowledge and unlawful practitioners

With the establishment British East India Company itself, European medicine came to be looked upon as the dominant knowledge system. By mid-19th century the British official colonial policy marginalized indigenous medicine to secondary status. After the Indian Mutiny in 1857 the government was careful not to disturb the local sensitivity around the traditional treatments and restrained from the process of annihilation of *vaidyas* or *hakims* through registration of only modern medical practitioners. If the conditions were not hostile the British Government would have had its way, and indigenous systems like Ayurveda, Unani *etc.* “would have been buried in the nineteenth century itself” (Harrison, 1994). Later, as the Indian Medical Service started accepting Indian nationals, students from upper classes and minorities entered medical colleges and European medicine became the official health care system ([https://www.ncbs.res.in/History Science Society/home](https://www.ncbs.res.in/History_Science_Society/home)). The Medical Council of India established in 1934 under the IMC Act, 1933 repealed and enacted again the Indian Medical Council (IMC) Act in 1956. People qualified from recognized medical institutions and colleges were only allowed to practice. The Indian Medicine Central Council Act, 1970 has been the most detrimental to traditional physicians of codified and non-codified systems of Indian medicine, as the Act

stipulated that a practitioner of Indian medicine who possesses a recognised medical qualification and is enrolled on a State Register or the Central Register of Indian Medicine, (Ashtang Ayurveda, Siddha or Unani Tibb) shall only practice. An estimated one and a half million providers of folk medicine, who do not have a certified medical degree, but who provide health care to nine hundred million Indians living in rural areas (Hardiman and Mukharji, 2012) have been affected by such stringent legislation. Bode and Hariramamurthy (2014) estimate two million as the number of local herbal healers, whose healing services to the Indian society are affected, because of their ‘semi-legal status’ aggressive marketing of biomedical drugs, and biomedicine’s social prestige.

Case studies from various parts of India reveal that the non-codified TK is not getting adequate protection from exploitation. For instance, about 200 medicinal plants from Chittoor and Nellore districts of Andhra Pradesh, being used by communities like Yanadis have been developed into modern medicines without any recognition or reward for any indigenous person (Vedavathi, 2013). The Yanadis feel that priority should be given to formal recognition of their TK and exclusive rights to use the bioresources needed for sustaining their knowledge/practices. Just as in Uttara Kannada the Yanadi youth are also not interested in TK, including traditional medicine.

The compulsion for acquiring a degree or diploma in the concerned discipline of Indian medicine sounded the death knell for both traditional, hereditary practitioners of codified Indian medicine as well as of the more informal folk medicine, irrespective of the caste or community. The traditional forms of Ayurveda and its dwindling number of practitioners are fast disappearing giving way to graduates from modern Ayurvedic colleges, and their ways of preparing remedies have been overtaken by the large scale production units run by the thriving pharmaceutical industry (Warrier, 2016). Menon and Spudich’s (2010) insightful study reflects

the predicament of senior *Ashtavaidya* physicians of Kerala, who were masters of healing practiced for more than 40 years. The desperation embodied in the feelings of Vaidyamadham Namboodiri that “We lived and breathed Ayurveda from birth” is because of the sense of futility despite long years of training, intense study and apprenticeship in the *Gurukulam* system under accomplished masters, covering subjects ranging from even grammar, poetry and drama in addition to mastering Sanskrit works on *Tarka* (the rules of reasoning and argument), and the traditional philosophies of *Nyaya*, *Vaisheshika* and *Samkhya* – all necessary to gain profoundness in the field of Ayurveda. Another *Ashtavaidyan* also testified: “Five years of textual study, five years of learning about medicinal plants in the forest, and five years of apprenticeship at home,” –including identification of medicinal plants and making of personalized medicinal preparations amounted to, in the eyes of the State, nothing short of quackery. The *Ashtavaidyas* felt the kind of training and studies that they underwent cannot be sustained in the contemporary environment of new trends in Ayurveda practice and teaching, involving many modifications which undermine the very nature of Ayurveda (Menon and Spudich, 2010). However, in these interviews the *Ashtavaidyas* were well acquainted with the present-day Ayurveda educational system and their younger generation rose to the occasion to carry forth the legacy by getting trained in modern Ayurvedic colleges.

Conclusion

The hierarchical problems in the medical field of India seem to be very deep rooted. From the Vedic period onwards there would have been a divide between codified systems of medicine as in the *Atharva Veda* and the indigenous medicine which hardly got recorded anywhere; the divide continued into the Epic period. This is as epitomized by Sushena the *vanara* (monkey) *vaidya* of Ramayana, who saved the life of critically wounded Lakshmana, using

Sanjeevani and some other obscure herbs, none of them having proper identity in the Ayurvedic texts to this day. Ayurveda itself got greater strength from the time of Buddha, to benefit more of humanity beyond India, by blending of its classical texts with ethno-medicines, a process that continued through ages. The Malabar region of yore (modern Kerala), not only achieved the distinction of taking far forward the progress of Ayurveda, from where the trios, Charaka, Susruta and Vagbhata left it, but also played a key role, incidentally, in laying the foundations of modern systematic botany, due to its own heritage of rich plant wealth and associated medical knowledge possessed by people ranging from the humble Ezhava *vaidyans* like Itti Achudan to the celebrated *Ashtavaidyas*. The paradigm shift, in the medical field in India, as captured by Hardiman and Mukherjee (2012), began with British colonialism. In modern times, more in the West, biomedicine is considered a hegemonic system, projecting itself as scientific, progressive and modern. But beyond the West are alternative systems claiming ‘civilizational hegemony’. Globalised form of biomedicine occupied the top of the hegemony in South Asia. The state backed medical practice AYUSH (Ayurveda, Yoga, Unani, Siddha, Homeopathy, Naturopathy and Sowa Rigpa) formed the second layer in the hegemonic healing systems of India. Folk medicine remained outside these two legitimate systems, tolerated at the most as ‘harmless superstition’ or as potentially harmful quackery. The Ayurveda and Unani of today are modified forms of these indigenous healing systems, described as ‘Syndicated Ayurveda’ or ‘Syndicated Unani’ (-ibid-).

The Biodiversity Act, 2002 raises some hopes in traditional healers, starts on the premises that it is an “Act to provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge ...” etc. By

'benefit claimers' the Act means also "creators and holders of knowledge and information relating to the use of such biological resources, innovations and practices associated with such use and application." While the Section 7 of the Act strictly insists on Indian citizens, corporates, associations or organisations, giving prior intimation to the State Biodiversity Board concerned for use of biological materials for commercial utilization, it states that the provisions of this section shall not apply to the local people and communities of the area, including "growers and cultivators of biodiversity, and *vaid*s and *hakims*, who have been practicing indigenous medicine. When Section 18(4) allows the National Biodiversity Authority to take any measures to oppose the grant of intellectual property rights in any country outside India of any biological resource or knowledge associated with it derived from India, it certainly sounds positive on protection of indigenous medical knowledge as well. "Chronicling knowledge relating to biological diversity" is one of the prime functions of the Biodiversity Management Committees (BMC), which are to be constituted by every local body. The Biological Diversity Rules, 2004, in Section 22(6) states that preparation of Peoples' Biodiversity Register (PBR), is the main function of the BMC. The register, among other things shall contain "knowledge of local biological resources, their medicinal or any other use..." Further, in Section 22(7) the Rule empowers the BMC as the "Authority for granting approval, to maintain data about the local *vaid*s and practitioners using the biological resources." As a person who had coordinated chronicling such knowledge in PBRs in several Gram Panchayats, and as a member of the Karnataka State Biodiversity Board, this author understands that knowledge on indigenous medical practice by folk healers form an important part of such PBRs. It would therefore be a glaring contradiction in the government policy to hold the traditional healer as an unlawful

practitioner indulging in quackery while at the same time considering traditional medical knowledge as sacrosanct to be safeguarded. In support further, the MoEF (NBA) Notification of 21st November, 2014, called "Guidelines on Access to Biological Resources and Associated Knowledge and Benefits Sharing Regulations, 2014," vide Section 17(c), exempts from seeking approval of NBA or SBB "local people and communities of the area, including growers and cultivators of biological resources, and *vaid*s and *hakims*, practicing indigenous medicine, except for obtaining intellectual property rights."

Despite the BD Act and subsequent development of Traditional Knowledge Digital Library (TKDL) by the CSIR, many unfair IPRs granted, involving Indian bio-materials and recorded TK related to them have been revoked and many more claims are getting stalled. But unfortunately the TK holders like the folk healers, who collectively hold phenomenal amount of knowledge, continue to languish in the shadows of legitimacy, practicing if at all, their medical tradition in a subdued fashion fearing punitive action from the state. Their medical knowledge, safeguarded through generations, getting recorded in the PBRs since last few years, being not codified, has not been reaching the TKDL either, which is rather reserved for AYUSH systems; on the contrary, such knowledge is becoming increasingly prone to biopiracy, through a flourish of patent claims, which the government would find it difficult to stop. If the BD Act-2002 should fulfill its avowed commitment towards "fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith" the TK being collected (especially in relation to ethnomedicine), from every nook and corner of the country, should be in a format compatible with the TKDL, lest it finds easy way from unsuspecting TK givers into the hands of professional TK seekers for unfair uses.

Most of the senior Ayurvedic *vaidyans* of the recent

times, hailing from the State, were not degree or diploma holders, but persons of great experience, acumen and learning. Case study in the forest and biodiversity rich Uttara Kannada, towards the north of the Malabar of yore, shows that ethno-medical tradition is still strong here, being carried out more as a service than as business, engaged in by people irrespective of the caste, bulk of them being Havik Brahmins of the elite class. The future, however is bleak, the present practitioners being seniors and as the younger successors being averse to carry forth the tradition from the shadows of legitimacy. The outcome of the study is to put forth a few suggestions towards bringing folk healing practices into legitimacy through documentation, within an acceptable framework provided by the BD Act-2002. The first step would be to gain recognition at the local level by the folk healers themselves making written submissions about their claims in the local language, to be examined and translated into English by an authorized team from the State Biodiversity Board. All such submissions from every local body, like the Gram Panchayat or Municipality should be received and acknowledged by the legally constituted of the respective local body, and should be treated as integral part of the Peoples' Biodiversity Register. The written submissions should be examined and subjected to procedural formalities at par with the same intensity to which other AYUSH formulations are being subjected so as to be meriting consideration for inclusion in the TKDL. As many traditional formulations recorded from Uttara Kannada are of nutraceutical importance similar formulations, duly documented, should also merit status as food supplements so that benefits could reach millions of malnourished people in the country. The medical pluralism in India, evolved through millennia has grown into a resilient system, has its own checkered history, and often humble beginnings in folk medicine reflecting the knowledge related to rich biodiversity

of the country from strikingly diverse ecosystems spanning the alpine meadows and temperate forests of Himalayas to the rain forests of Meghalaya and the Western Ghats and from the deserts and arid landscapes of Rajasthan and Deccan region to the mangroves and marsh vegetation of the extensive coastal zones encircling the peninsula and the islands. The need is strongly felt for blending the medical acts and regulations of India with the Biodiversity Act-2002 and Rules 2004 so as to create an environment conducive for healthy growth of the informal sector of indigenous medical systems to complement AYUSH and modern biomedical systems.

Literature cited

1. Abbot R, Documenting Traditional Medical Knowledge. World Intellectual Property Organization, WIPO.
2. Aggarwal H and Kotwal N 2009. Foods used as ethno-medicine in Jammu, *Ethno-Med*, 3(1): 65-68.
3. Birnbaum R O 1979. *The Healing Buddha*. Shambala Publications.
4. Bode M and Hariramamurthi G 2014. Integrating folk healers in India's public health: acceptance, legitimacy and emancipation, *e Journal of Indian Medicine*, 7: 1-20
5. Buhler J B 1886. *Sacred Books of East*. Clarendon Press, London. Vol 25.
6. Chakravarti R and Ray K 2011. Healing and healers inscribed: epigraphic bearing on healing-houses in early India, *Occasional Paper*, Institute of Development Studies Kolkata, 1-30.
7. Chandran M D S, Gadgil M and Hughes J D 1998. Sacred groves of the Western Ghats of India, In: *Conserving the Sacred for Biodiversity Management*, edited by, Ramakrishnan PS, Saxena KG, Chandrashekhara UM. UNESCO, Oxford & IBH, New Delhi. pp 211-231.
8. Fournier M 1980. *Hortus Malabaricus of Hendrik Adriaan van Reede tot Drakestein* In: *Botany and History of Hortus Malabaricus*, edited by, Manilal, K S. Oxford & IBH, New

- Delhi. pp 6-21.
9. Gopalakrishnan P K 2000. Keralathinte Samskarika Charitram (in Malayalam), 6th ed. Kerala Bhasha Institute, Thiruvananthapuram.
 10. Griffith R T H 1896. Rig-Veda Book 10 Index. Rig Veda, tr. by Ralph T.H. Griffith, 1896@ sacred-texts.com
 11. Grove R 1995. Green Imperialism, Colonial Expansion, Tropical Island Expansion and the Origins of Environmentalism. Cambridge University Press, Cambridge.
 12. Hardiman D and Mukherjee P B 2012. Introduction, Hardiman and Mukherjee (eds.) Medical Marginality in South Asia: Situating Subaltern Therapeutics, edited by Hardiman D, Mukherjee PB. Routledge, London and New York.
 13. Harrison M 1994. Public Health in British India: Anglo-Indian Preventive Medicine 1859-1914 Cambridge University Press, Cambridge.
 14. Heniger J 1980. Van Reede's Preface to Volume Three of Hortus Malabaricus and its historical and political significance, In: Botany and History of Hortus Malabaricus, edited by Manilal KS. Oxford & IBH, New Delhi, pp 35-69.
 15. Howell C R 2003. Mechanisms employed by Trichoderma species in the biological control of plant diseases: the history and evolution of current concepts, Plant Disease. 87(1): 4-10.
 16. Huffman M A and Vitazkova S K 2009. Primates, plants and parasites: evolution of animal self-medication and ethnomedicine, In: Ethnopharmacology, vol II. Encyclopedia of Life Support Systems, edited by Elisabetsky E, and Etkin, N L. UNESCO, Paris.
 17. Hughes CC 1968. Medical care: ethnomedicine, In: International Encyclopedia of the Social Sciences, edited by, Sills D L. Free Press, New York.
 18. Jurenka J, Therapeutic applications of pomegranate (*Punica granatum L.*): a review. <http://www.biomedsearch.com/article/Therapeutic-applications-pomegranate-Punica-granatum>
 19. Kandwal M K and Sharma M L 2011. *Cynodon dactylon* (L.) Pers.: a self-treatment grass for dogs, Current Science, 101(5) 619-621.
 20. Kassaian N, Azadbakht L, Forghani B and Amini M 2009. Effect of fenugreek seeds on blood glucose and lipid profiles in type 2 diabetic patients, Int J VitamNutr Res, 79(1):34-9.
 21. Krawinkel M B and Keding G B 2006. Bitter gourd (*Momordica charantia*): A dietary approach to hyperglycemia, Nutr Review, 7(1): 331-337.
 22. Laqueur W 1995. The Uses and Limits of Intelligence. Transaction Publishers, London.
 23. Mangathayaru K 2013. Pharmacognosy: An Indian Perspective. Pearson, New Delhi.
 24. Macdonell A A 1917. A Vedic Reader for Students. Clarendon Press, Oxford.
 25. Manilal K S 1980. Malayalam plant names from Hortus Malabaricus in modern botanical nomenclature, In: Botany and History of Hortus Malabaricus, edited by, Manilal K S, Oxford & IBH, New Delhi, pp 70-77.
 26. Manilal K S 1980. The epigraphy of the Malayalam certificates in Hortus Malabaricus, In: Botany and History of Hortus Malabaricus, edited by, Manilal K S, Oxford & IBH, New Delhi, pp113-120.
 27. Manilal K S 2003. Ed Van Rheede's Hortus Malabaricus. English Edition, with Annotations and Modern Botanical Nomenclature, University of Kerala, Trivandrum, 12 Volumes.
 28. Menon A S 2008. Cultural Heritage of Kerala, D C Books, Kottayam.
 29. Menon I and Spudich A 2010. The Ashtavaidya physicians of Kerala: A tradition in transition, Journal of Ayurveda and Integrative Medicine, 1(4): 245-250.
 30. Murti G S 1984. Our aims and ideals, Journal of Ayurveda or the Hindu System of Medicine (JAHSM), 1(1): p.10.
 31. National Biodiversity Authority 2015. Compendium of Biological Diversity Act 2002

- rules 2004 & Notifications, NBA, Chennai.
32. Nicolson D H, Suresh C R and Manilal K S *Regnum Vegetabile* Vol 119: Interpretation of Van Rheede's *Hortus Malabaricus* (International Association for Plant Taxonomy)
 33. Petrovska B B and Cekovska S 2010. Extracts from the history and medical properties of garlic, *Pharmacogn Rev*, 4(7): 106–110.
 34. Prasad P N 2007. Medicine, power and social legitimacy: A socio-historical appraisal of health systems in contemporary India, *Economic and Political Weekly*, 3491-3498.
 35. Prasad P V 2002. General medicine in Atharvaveda with special reference to Yaksma (consumption/tuberculosis), *Bulletin of the Indian Institute of History of Medicine*, 32(1): 1-14.
 36. Ram H M 2005. On the English edition of Van Rheede's *Hortus Malabaricus* by K. S. Manilal (2003), *Current Science*, 89(10): 1672-1680.
 37. Sadasivan S N 2000. *A Cultural History of India*. A.P.H. Publishing Corporation, New Delhi,.
 38. Shukin J 2014. News Feature: Animals that self-medicate, *Proc Natl Acad Sci U S A* 111(49): 17339–17341.
 39. Udwardia E F 2000. *Man and Medicine – A History*, OUP, New Delhi.
 40. Upadhyaya V, Hegde H V, Bhat S and Kholkute S D 2014. Non-codified traditional medicine practices from Belgaum Region in Southern India: present scenario. *Journal of Ethnobotany and Ethnomedicine*, 10(49); <https://ethnobiomed.biomedcentral.com/articles>
 41. Valiyathan M S 2003. *The Legacy of Caraka*, Orient Longman, Chennai.
 42. Valiathan M S 2010. *The Legacy of Vagbhata*, Universities Press, Hyderabad.
 43. Variar P R 1985. The Ayurvedic heritage of Kerala. *Ancient Science of Life*. 5(1) 54-64.
 44. Vedavathi S 2005-2009. India case study – protecting Yanadi healers' rights. In: *Protecting Community Rights over Traditional knowledge: Implications of Customary Laws and Practices*, International Institute for Environment and Development (IIED) <http://pubs.iied.org/pdfs/14591IIED.pdf>
 45. Warriar N V K 1989. *Keralapanini's Contribution to Sanskrit Grammar*, (Mal). State Institute of languages, Trivandrum.
 46. Warriar M 2016. *Modernised Ayurveda in India and the West*, In: *Routledge Handbook of Contemporary India*, edited by Jacobsen KA. Routledge, London and New York.
 47. World Health Organisation (WHO), 'Traditional Medicine: Definitions', WHO/EDM/TRM/2000.1; <http://www.who.int/medicines/areas/traditional/definitions/en/>.
 48. World Health Organisation (WHO), WHO traditional medicine strategy 2002–2005, 2002, WHO/EDM/TRM/2002.1
 49. Wolfgram M S 2009. *Ayurveda in the age of biomedicine: Discursive asymmetries and counter-strategies*, Ph.D. Dissertation, University of Michigan.
 50. Zysk K 1996. *Medicine in the Veda: Religious Healing in the Veda*, Motilal Banarasisdas, Delhi.
 51. Zysk K 1998. *Asceticism and Healing in Ancient India – Medicine in the Buddhist Monastery*, Motilal Banarsidas Publishers, Delhi.
 52. <https://www.ncbs.res.in/HistoryScienceSociety/home>: Overview of Indian healing systems. <http://textofvideo.nptel.iitm.ac.in>