

Chapter 2

Healing Landscapes: Sacred and Rational Nature in Nepal's Ayurvedic Medicine

Mary Cameron

*In memory of and deep appreciation to**Siddhi Gopal Vaidya and Dr. Lokendra Man Singh*

Be glad and joyful in the Plants, both blossoming and bearing fruit, Plants that will lead us to success like mares who conquer in the race.

Plants, by this name I speak to you, Mothers, to you the Goddesses.

He who hath store of Herbs at hand like Kings amid a crowd of men, Physician is that sage's name, fiend-slayer, chaser of disease.

Herbs rich in Soma, rich in steeds, in nourishments, in strengthening power, All these have I provided here, that this man may be whole again.

Reliever is your mother's name, and hence Restorers are ye called.

The Plants have driven from the frame whatever malady was there.

(Rg-Veda Hymn XCVII "In Praise of Herbs," excerpts from stanzas 3-13)

Introduction

“What is often being argued...in the idea of nature is the idea of man; and this is not only generally, or in ultimate ways, but the idea of man in society, indeed the ideas of kinds of societies.”

(Williams 1980:71)

In her book *Loving Nature* Kay Milton asks a simple question: How do communities and individuals develop a protective and caring relationship with nature? Milton synthesizes ideas from religion, science, and psychology to advance, in one respect, Tim Ingold’s theory that people’s direct experience(s) with the natural environment acts alongside social constructs to produce deep emotional bonds with the environment that include its protection. It would not be surprising, then, to find that societies directly dependent on plants economically and medically¹ would have correspondingly high levels of plant-based knowledge and environmental stewardship, and that they may have evolved sacred and pragmatic techniques of conserving certain kinds of plants like medicinal ones. The Nepali people comprise such a society. Though ethnically diverse, Nepal is still largely a subsistence agrarian economy, and Nepali farmers and others dependent on them commonly consult medical practices that rely on plants. Both Ayurvedic² and Amchi medicine extensively utilize plants to alleviate suffering due to illness and to rebalance the body’s humors.³ In this chapter, I detail how Ayurvedic doctors acknowledge and actualize a love for medicinal plants, *jaDibuti*, and how their caring converges with ‘scientific’ language from biomedicine and

environmentalism about nature. The use of plants in healing finds a receptive population among urban and rural Nepalis, and discourse about medicinal plants is generated in a variety of places.⁴ For this chapter, I draw attention to the politics of conserving Ayurvedic medicinal plants within contexts of local engagement with nature and the environment that are common to lay Nepalis, specific engagements with medicinal plants by family-trained and academically-trained doctors, and government and non-government organizations' efforts to protect medicinal plants.

The importance of cultural-based and development-driven conservation is, however, contradicted by political impulses that place medicinal plant expertise and conservation at the center of debate in the political economy of donor-driven health care in Nepal. First, there is the failure of the Nepali government to regulate the flow of medicinal plants across its national borders and the ecological complications derived from illegal harvesting and trade. Second, concern about formal, institutional Ayurvedic education centers on the insufficient training students receive in medicinal plant identification and preparation, in contrast to informally and family-trained doctors who acquire extensive plant-based knowledge through their long apprenticeships with family members and other traditional teachers. Third, and contradicting the second, recent efforts to make Ayurveda more professional and modern by regulating who practices and what plant-based medicines are produced ultimately limits practice to those with formal educational training or those who can prove the existence of three generations of healers in family lineage practices. Of concern to many, the legislation could erase medicinal plant

knowledge (and inevitably health care delivery) over the next generations. I will address each of these issues in detail below. What is clear, though, is that in privileging biomedicine in its health care policies, the state neglects institutional development of Ayurveda. Autocratic licensing and medicinal plant conservation efforts are insufficient to counterbalance politics, capital interests, poverty, and biomedical dominance that work against medically-based nature conservation.

According to the World Health Organization, traditional medicine comprises the main source of health care for nearly 80 percent of the world's population in developing countries (Chaudhury 2001). Of the traditional medical systems in South Asia, Ayurvedic medicine is integrated into most countries' medical bureaucracies, and has continued for hundreds of years to be a very popular system of healing throughout the region (Dixit 1995; Himalayan Ayurveda Research Institute 1996). Ayurveda and its variants - for there is not one true or pure Ayurveda, but different forms and traditions - are considered to be the most common and popular forms of healthcare in Nepal, for Ayurveda provides, as many believe, a fundamentally sound theory of health and illness, one that is supported by people's extensive knowledge of medicinal plants and their uses. Furthermore, medicinal plants are part of social networks; lay Nepalis generously share their knowledge of plants with others - family, neighbors, and foreigners. They honor healing plants as a gift from the gods, for which they express gratitude in a variety of ways.

Based on many conversations over eight years with doctors, patients, government officials, and educators, I recognize that a central dilemma for Nepal is whether she can become modern while preserving and developing Ayurveda, which has not advanced like biomedicine has in the country. Conserving medicinal plants has become a kind of bridge between modern environmental movements and modern indigenous medical movements. Consequently, the language of developing Ayurvedic medicine increasingly turns on the status of medicinal and aromatic plants in the country, and on their efficacy as evaluated through allopathic medical standards, rather than on institutional and human resources development. In other words, developing plants and identifying their chemical properties within the language of western science has become more acceptable as a modern effort to preserve medical traditions than has developing its human resources. While medicinal plant protection may be a point that the Nepal actors can agree on, the ability of different groups to actualize that protection is limited, constrained as they are by either lack of resources and organization, or a lack of political will to adequately control illegal trade in a way that does not further impoverish the rural poor who are compelled to sell plants in less than environmentally conscientious ways. In this chapter, I am thus engaging with broader discussions on social and medical justice in an era of increasing biomedical globalization and diminishing natural resources.

Ayurvedic Medicine and Nature

“The Western doctors take into account the seed only, ignoring the soil. Hence they miserably fail in attaining the results desired.”

(*Journal of Ayurveda*, 1927; quoted in Sharma 1983/1929: 144)

Ayurvedic medicine has historically drawn its therapeutic language from a set of natural images by which to situate humans within the phenomenal world, further Ayurveda's 'natural' typologies of people, and advance its theories of illness causation, progression, prognosis, and cure. Foundationally, classical Ayurvedic medicine detailed in the ancient medical texts (*Carakasamhita*, *Susrutasamhita*, and *Astangahrdayasamhita*) derives from Samkhya natural philosophy in theorizing that the living body is comprised of natural characteristics or *prakriti*, in the form of three *dosas* or humors (*tridosa*), wind (*vata*), bile (*pitta*), and phlegm (*kapha*), substances that flow throughout the body and exhibit "particular textures, colours, tastes, and locations in the body" (Wujastyk 2003: xlii). Though three in number, the *dosa* are formed from five ubiquitous entities or elements (*panchamahabuta*) found in the phenomenal world - sky/space, fire, air, water, and earth (*akash*, *tej*, *bayu*, *jal*, and *prithvi*). The three humors have identifiable qualities (*guna*) and tastes⁵ that are in dynamic equilibrium with larger phenomena (seasons, planetary alignment) and with internal and external substances (food, metals, animals, plants) that also contain the same distinctive qualities and tastes (Durkin 1988; Zimmermann 1987; Zysk 1991). The living organism, constituted by the *tridosa*, interacts with an environment constituted by the five elements, six flavors, and six seasons. According to Ayurvedic theory, the two main causes of illness are faulty diet and faulty daily regimen, as these may disturb the 'cooking' or 'ripening' of *rasa*, the food-juice of life within the body (White 1996). Symptoms of illness are read by the physician as indicative of an

excess, absence, or dislocation of one or more humors. Adjustments are made through dietary and other daily regimens and the consumption of plant-based medicines.⁶ The 'ecology' and 'economy' of the body and person in Ayurvedic thought also make the subject's daily practices, social relationships, and environmental surroundings integral to diagnosis and treatment (Sharma and Dash 1998; Sharma 1983; Nichter 1981, 2001; Zimmermann 1987).

Ayurvedic medicine has an articulated theoretical paradigm based on centuries of natural experimentation and observation, and has both formal and non-formal systems of training, a recorded *materia medica*, and a clinical tradition with a diverse range of therapeutic treatments. Health is defined in Ayurveda as a state of dynamically balanced *dosas*⁷ maintained by a congruence between the body and its physical and living environment;⁸ this suggests a state of health best achieved, and indeed derived from, a 'natural' and rural kind of environment, rather than an overpopulated, less 'natural' urban one. If we look closely at linguistic and medical history, though, we find that using an urban-rural or nature-culture dichotomy to classify illness and health may be overly simplistic. Ayurvedic practitioners of the past and the present recognize at least three distinct rural areas - the wild jungle or *ban*, the *jangal*, and the *araniya* (Zimmermann 1987) - delineated ecologies that nourish particular medicinal plants and contribute to the distinguishable types of human *prakritis*. According to Dr. Narendra Tiwari, a leading expert on Nepal's medicinal plants, *ban*, *jangal* and *araniya* are often used interchangeably but in fact have different root meanings. *Ban* is the "wild forest" where

tribes who cultivate the land live, and whose members are called *banbasi*. Often the *ban* is species-specific, such as *sal ban* where *sal* or evergreen trees grow, or *shleshmatak ban* where the Siva temple Pasupati is located in Kathmandu, though the trees are no longer there. The *jangal* is a place where non-cultivating tribes live, like the Raute (see Fortier, this volume). *Araniya* is a place where only non-human animals live, an ecology that is “too wild” for humans. This indigenous ecological typology is also applied to the classification of medicinal plants, including in the sacred texts.

In considering the discourse on Ayurvedic medicine in Nepal today, we find that urban and rural locations are discursively constituted in ways that increasingly polarize the landscape of healing. Current and entirely urban-based efforts to professionalize Ayurvedic medicine in Nepal position the rural as a place where important healing plants grow, but proponents of modern professionalization also identify the rural as a natural place where non-formally educated healers, who are nonetheless believed to be lacking in their medical knowledge, practice. The absence of a formal education from an urban Nepali or Indian Ayurvedic college or university is thought to relegate these village practitioners to an inferior form of healing practice. From the perspective of a second group, those wishing to develop Ayurvedic medicine on the wave of global interest in indigenous knowledge (in particular medical knowledge), as well as NGOs and INGOs seeking new ways to protect Himalayan biodiversity, the rural is positioned in a quite different way. For this group, the rural is an idealized original source of medicinal plants, a place of dietary-based humoral balance and sacred conservation practices that stands in

superior contrast to materialistic, crowded, polluted and imbalanced urban places.

Similarly, the current interest in Ayurvedic medicine among urban educated elites comes from Ayurveda's association with 'natural' efficacy rather than from its ancient heritage. Thus, Ayurveda is an important player in how the Nepali people understand and interact with nature.

Ayurvedic doctors give different reasons for choosing their profession, but many do express an early love for plant life and feel that one reason Ayurvedic medicine is popular is because people are familiar with plants and are comfortable with their use in health care. Lay people and physicians alike find that Ayurveda is particularly suited to Nepal because, aside from being an efficacious system of therapies, the natural philosophy behind it provides a persuasive model for the physical and living world, and has shaped people's relationship to nature in many ways – as a way to think about farming, as a way to think about making the body strong and healthy, and as a way to realize an enduring respect for the god-given world of powerful, healing plants.

Ayurvedic medicine is thus seen as possessing cultural common sense. This combination of phenomenology, metaphysics, and pragmatism is the unique force behind people's sense of moral duty to nature and the environment.

History of Ayurveda in Nepal

Up through the contemporary period, Ayurvedic medicine has been one of the most common forms of health care in South Asia. In Nepal, the importance of Ayurvedic medicine before the middle of the last century is evident in several historical facts. The Rana courts in Kathmandu maintained a hierarchy of Ayurvedic family doctors and established important Ayurvedic institutions during their reign. Each Gurkha military unit took an assigned *baidya* to England in the first decades of their British employment. And from oral histories we learn that a large majority of elderly Nepali citizens know herbal medicinal preparations and can identify numerous, common medicinal plants (Cameron 1986; Himalayan Ayurveda Research Institute 1996). In village and urban life, healing was achieved through people's opportunistic resort to self-cure, and through visits to *baidya*, herbalists, shamans, Tibetan doctors, wandering ascetics, and priests - a pluralistic healing landscape typical today that now also includes biomedicine (Adams 1988, 1998; Burghart 1984; Parker 1988; Stone 1976).

In Nepal, formal Ayurvedic education began with King Chandra Shamshere Rana, who in 1928 established an educational fund for students to study Ayurvedic medicine in India. They completed their studies in five years and returned to Nepal to inaugurate the teaching hospital at Naradevi.⁹ Its mission was to advance the teaching of Ayurvedic medicine and to serve patients free of charge.

When Nepal opened its borders to the world in the 1950s following the removal of the Rana rulers and the re-ascension of the Shah lineage, the contemporary era of

development (*bikas*) began. The Shah rulers strongly supported modern scientific medicine. According to former royal Ayurvedic doctors with whom I spoke, King Birendra gradually removed Ayurveda from the palace by replacing the Ayurvedic practitioners with allopathic doctors and introducing a retirement age of 60, which encompassed virtually all of the Ayurvedic doctors affiliated with the palace. Pressure to modernize the country was met with the introduction of European health care development in the form of immunization programs, public health, the establishment of a world-class biomedical college and auxiliary schools, and a rapidly expanding pharmaceutical industry (Justice 1986).

The formal educational system was restructured in the second half of the twentieth century by the recently deposed Shah rulers, who vigorously championed modernist ideology in slogans such as ‘education to meet the needs of the people.’ Finding Ayurveda non-modern, reformers restructured its medical curriculum, too. The Sanskrit-based curriculum was eliminated,¹⁰ and the four-year degree was forced to become a three-year program in line with other IA degree programs. The Ayurvedic degree was renamed “Proficiency in Complementary and Traditional Medicine,” a title which altogether dropped the word "Ayurveda." Supervision of the main institution of formal Ayurvedic education, Naradevi Teaching Hospital, was moved from the Ministry of Health to the Institute of Medicine in the Ministry of Education in 1972, when modern allopathic medicine was introduced as a discipline and a degree program. Today, the curriculum for the BAMS, Bachelors in Ayurvedic Medicine and Surgery, is five and

one-half years; it includes one year of clinical rotation, and the amount of biomedically-related subjects taught comprises about 30 percent of the entire curriculum. However, the superintendent of Naradevi and many others cite an extreme lack of academic manpower as a major barrier to the professional development of Ayurvedic medicine in Nepal.

While these changes in formal professional institutions were taking place in the second half of the twentieth century and the beginning of the twenty-first century, what was happening to the largest group of Ayurvedic practitioners, the traditionally and family-trained healers? There are no national figures on the number of traditional healers in Nepal. Clearly, though, within a society of native botanists, these women and men *baidyas* possess some of the most intricate understandings of plant life, experiencing intimate lives with plants as with their patients. A recent survey of six Village Development Councils representing the geographic terrain of Gorkha district identified 455 traditional practitioners that were providing people with the majority of primary health care outside the family, and that were using locally available parts of approximately 250 plant species belonging to 86 families (150 of which are mentioned in Ayurvedic classics; Himalayan Ayurveda Research Institute 1996). Though an isolated study, ethnographic evidence from other areas indicates a culture heavily dependent on village healers using medicinal plants.

The fundamental Ayurvedic principle of balancing the body's dynamic humoral essences with diet, proper behavior, and medicinal plants, has noteworthy consistency across

contemporary populations (Dixit 1995; Himalayan Ayurveda Research Institute 1996). Beginning in 1802, botanical, ethno-botanical and medicinal plant classification in Nepal's diverse ecosystems and ethnic communities confirms wide-spread and semi-uniform use of plants for health care purposes. In the contemporary period, this has been noted extensively in numerous studies and reports on Nepal's environment and its medical systems, though scholars have not always made the link to Ayurveda. Very often during my own village-based research, friends would pick the leaves and pull the roots of wild plants during visits and walks, later to be administered in home and community medical treatment.

Today, the health and medical systems in Nepal can be grouped into four categories: the home-based system; the faith healing system; so-called 'traditional medicine' that includes Ayurvedic medicine, homeopathy, Tibetan medicine, and Unani; and modern allopathic medicine, with its vast network of hospitals, clinics, medical and nursing schools, pharmacies, and practitioners.¹¹

Nepal is also home to a state institution that harvests medicinal and aromatic plants for use inside the country and for export. Established in 1981 under the Ministry of Forestry, the Herbs Production and Processing Company's exports are comprised of approximately 20 percent medicinal plants, most of which go to European countries.¹² Many plants are grown on its farms in the tarai, and the staff negotiates with private companies and individuals to collect and deliver plants to regional offices. HPPCL supplies some raw

materials to the Vaidyakhana, including *shilajit*, a mineral pitch that is collected in small quantities in the Himalayas and is a main ingredient in a popular food supplement. The government of Nepal also owns large pieces of excellent agricultural land on which it grows medicinal plants under experimental conditions, which tends to simply mean in the natural environment of soil, altitude, and weather, and supervised by a small, knowledgeable local staff.¹³

Private Ayurvedic drug production companies in Nepal include Gorkha Ayurveda and Dabur Nepal, as well as hundreds of small family Ayurvedic businesses that produce primarily for their communities, some of which may escape the purview of the Department of Drug Administration that oversees drug distribution.

Ayurveda in Nepali Culture and Practitioners Today

Baidya in rural villages diagnose physical and mental maladies, and based on those diagnoses, they procure, prepare, and administer plant medicines. *Baidya* develop their skills from their own families, nearby kin, and from the larger community. They are part of what makes Ayurvedic medicine more acceptable and accessible than modern biomedicine to the Nepali people, practicing in ways embodying Ayurveda's holistic representation of the human body and its non-medicalization of the human life cycle. Other reasons people use Ayurveda include its non-invasive diagnostic techniques, the value it places on patients' social environment in illness treatment, its use of symbols of balance, mutuality, and cooperation, and its free service to the poor. The broad

integration of Ayurvedic ideas into Nepali culture extends to lay people who apply humoral principles in self-cure, too.

In one of Nepal's best loved epic plays, *Muna Madan*, written in 1936 by Laxmi Prasad Devkota, the main character, Madan, falls ill while returning to Nepal from Lhasa, Tibet. His traveling companions abandon him, advising him to repeat the name of the Lord, as he was surely going to die. After they leave, Madan is helped by a Tibetan man who takes him to his home and

... laid him down in wool. There he gave him water and tended him kindly; he went out to search for a forest herb, crushed it and gave it to Madan. Then he gave him milk from his yak cow and made him strong again.

(Devkota 1936: 38)

Madan returns home to find that his beloved wife Muna, who had pleaded with him not to travel to Tibet, has died from loneliness and his mother passes away shortly after seeing her only son for the last time. Madan's health declines and he exhorts a doctor to consult his medical books:

Read Charaka, turn the pages of Sushruta, where is it, tell me, this anguish of heart? The disease that afflicts me is life – cure that! The doctor looked and

understood; he never came again. Wherever the heart's anguish might be,
medicine cannot find it.

(p. 54 *ibid*)

The emotional turmoil that befalls the man who seeks fame over love cannot be cured even by the power of Ayurvedic medicine. Both Devkota and the play are familiar to millions of Nepalis, and while Devkota broke with long-standing literary traditions by using language and imagery familiar to common Nepalis, he also tapped into a cultural identity replete with medicinal plants and learned Ayurvedic healers that would appeal to his readers.

Practitioners of Ayurvedic medicine in Nepal come from different economic and geographic backgrounds, though most of them are from the upper castes. Colleagues I have worked with include non-literate rural *baidya* who have extensive knowledge of local medicinal plants and live on the margins of poverty like many of their rural neighbors, and urban physicians with advanced Ayurvedic degrees from India who are successful proprietors of clinics for foreigners during the day and healers at community Nepali clinics during the early evening hours. There are those who work primarily in administration in the Ministry of Health, and those who see patients throughout the day at family-based clinics that may be hundreds of years old.

Traditionally-trained doctors belong to one of three groups. The first and most well-known are those trained by family members with practices going back many generations. These families tend to be high caste Newari and urban-based, and many have had family members appointed to Nepal's royal families as doctors. They often have extensive genealogies of their Ayurvedic practice, with manuscripts on diagnosis, treatment, and medicinal plant pharmacology dating back hundreds of years. They tend to not divulge family healing secrets and rarely have they trained non-family members in the art and science of healing. Some of them prescribe medicines only they have prepared, refraining from using mass-produced and Indian medicines. Women from these families may also serve as compounders and dispensers of medicine and as nurses, though rarely do they diagnose patients (for a fuller description of women in Ayurveda see Cameron 2009b). The professional stature of this exclusive group of *baidya* is based both on their success as doctors and the reputation of their lineage ancestors.

The second group of non-formally educated *baidyas* consists of people with apprentice roots that are contemporary, having been trained in families without long histories of Ayurvedic healing, or by non-family members such as seers and renowned religious figures. These *baidyas* practice in rural and urban communities and their professional stature is based mainly on their success at healing, though some claim the eminence of their teachers as evidence of their own abilities. This group meets the health care needs of the majority of the Nepali people, and is more diversified by caste, ethnicity, and gender than the first.

In the Name of Modern Science: Controlling Ayurveda Rationally

“We must preserve the knowledge of the traditional practitioners, but we must also protect the people from fraud.”

(Dr. Ram Chanda Pandey, Registrar of the Ayurvedic Council. 8 March 2005,
discussing the 2045/55 Ayurvedic Council Act)

Given its place in Nepal's medical history, it is not surprising that Ayurvedic medicine - its practice, its practitioners, and its patients - would become enmeshed in the country's health politics. In the case of Nepal, due to its relatively small size and location between India and China, the country has been a well-researched recipient of international development aid. In the field of health care “modernization” one is left with the clear impression that biomedicine is a strong - and growing - force in the country, powerful enough to determine the standards by which Ayurveda is measured. The presence of modern scientific ideology alongside an equally formidable theoretical system like Ayurveda raises a set of questions about the nature of that relationship. One manifestation of science power coming from a small but influential sector of the Nepali state would seek to control Ayurvedic medicine by means of a standard that bears little relationship to how individuals become healers, a standard that recognizes only one form of higher medical education and that gives little rational weight to the non-formal and traditional educational processes that have maintained Ayurvedic healers over the generations.

Pressure to regulate Ayurvedic medicine is an outcome of the larger goal to modernize health care in Nepal, and produces rhetorical constructs of Ayurveda as a non-empirically based traditional medical system worthy of support only as an alternative to modern medicine. Many health officials, themselves from modern scientific or medical backgrounds, do not consider the village practitioners to be true healers, and some have even publicly described formally-educated practitioners as backward. One Health Secretary ended a discussion with me about the Ministry's plans for advancing Ayurvedic medicine with skepticism about the village healers, suggesting that they should not be called *baidya*, in spite of the fact that they practice in ways similar to professionally-trained doctors. Still, government officials that characterize Ayurvedic medicine negatively may lose support from a population that cherishes its medical tradition. Dr. Ram Yadav had twice been appointed Health Minister, but during his first term, according to Dr. Lokendra Man Singh (Nepal's leading Ayurvedic physician until his death three years ago), he was quoted as saying that Ayurveda is like "the cart being pulled by the oxen," whereas allopathic medicine is like a "supersonic jet." With those words, he lost his bid for reappointment, though he was later reinstated. Politicians are requesting more Ayurvedic facilities for their districts and for the nation as a whole, as they recognize that Ayurveda fills a critically important primary health care need and they see how India benefits from Ayurveda's increasing global popularity (see Langford 2002 for a recent excellent study of modernizing Indian Ayurveda).

Efforts by the Nepali government to regulate both allopathic and Ayurvedic medical practices implicitly involve broader and profound concerns over the status of modern science practices, including the role of science in society, how science is defined and owned, and what is the basis of scientific knowledge. Strategic claims of being the true followers of scientific healing are found on both sides, with the Ayurvedic community claiming its millennia-old systematic accumulation of knowledge rivals the knowledge produced by the relative newcomer, post-enlightenment modern biomedical science. As scientists, Ayurvedic doctors believe it is possible to make steady progress in the sphere of human knowledge; that methods and goals are, or should be, ultimately identical throughout the sphere; and, that it is possible to derive the structure of the laws of nature from a single set of clear, abstract principles and concepts, if they are applied correctly (Berlin 1981). Like modern scientists, practitioners consider Ayurvedic principles to be universal, and they apply a method of diagnosis and treatment consistent with those principles.

Ayurvedic physicians point out that contemporary experimental trials of Ayurvedic medicinal preparations are inherently flawed because they do not test the actual mixtures prescribed in the ancient texts, and instead focus their search on a single active ingredient. This approach contradicts the important Ayurveda principle of combining many plants and their many parts, as well as the principle of *yogbai*, which is the addition of a plant that accelerates and enhances the main drug's action. Furthermore, the ecology of a plant is understood to affect its constituent parts and its chemical configuration, and

therefore it is important to properly select plant source locations for experimentation.

Finally, to measure efficacy is to measure a state that Ayurvedic doctors consider subjective and not measurable by the tools of modern scientific and medical experimentation.

On the other hand, some Ayurvedic doctors explicitly embrace the language of contemporary science when discussing Ayurveda, as either a legitimizing discourse or as another kind of science parallel to non-western Ayurvedic science. An example of the former is found in discourse emphasizing the importance of knowing the chemical basis of the drugs and assessing their efficacy. Here, modern science is seen to work in the service of Ayurvedic medicine, as a tool by which Ayurveda can supplement its own rich knowledge of how medicines work. Still others strategically exploit the language of science in an effort to legitimize the profession. “Scientific and Reliable Ayurveda Service is the Foundation of Healthy Life” is the motto of the Dhanwantari Ayurveda Hospital and Research Center (DHAREC), newly opened in Kathmandu by a group of Naradevi graduates, and recently put under the supervision of Dr. Sarita Shrestha, a Nepali graduate of Banaras Hindu University. It claims to offer both Ayurveda and modern diagnostic tools, with treatment provided by Ayurveda specialists. One of its objectives is “to perform scientific research in the field of Ayurveda and its impacts to the world health [sic]” and to offer training programs so as to provide “scientific knowledge of Ayurveda to traditional Ayurveda healers.” The juxtaposition of academically-trained doctors to non-formally-trained healers is an attempt to bring

together two communities of practitioners that have been recently divided over the issue of professional registration, though it does so by uncritically accepting the rationale by which they were separated, that knowledge gained through formal academic training is the standard by which all other forms of knowledge should be evaluated.

Some formally-trained Ayurvedic doctors trying to establish new urban practices tend to discredit informally-trained doctors that keep healing secrets inside the family. The traditional practitioners, well aware of the criticism, counter with their own concern that knowledge in the wrong hands would be harmful to patients.

Despite the absence of national data on Ayurvedic practitioners, the Nepali government has recently sought to regulate the practice of Ayurvedic medicine in the country.

Succumbing to criticisms of Ayurveda as non-scientific, and bolstered by reactionary fears from the allopathic community and like-minded development officials that plant-based medicines may be toxic, the Ministry of Health, through the Department of Ayurveda and the Ayurvedic Council, sponsored legislation in 1988 that sought to regulate the practice of Ayurvedic medicine by mandating the registration of all practitioners. The Ayurvedic Council Act, eventually passed ten years later in 1998 and implemented in 2001 through the Ministry of Health, may have far-reaching implications for the practice of Ayurvedic medicine in Nepal, for it seeks to license practitioners on a very narrow set of criteria (Cameron 2009a).

According to the Act, individuals who want to practice Ayurvedic medicine must register with the Department of Ayurveda by proving their training with a degree or certificate in Ayurveda from a recognized institution, or, if traditionally trained and over fifty years of age (no one younger can apply under this provision), by documenting their status with a letter from their Chief District Officer stating that Ayurvedic medicine has been practiced in the applicant's family for a minimum of three generations. Equally autocratic are the restrictions placed on the production of medicinal plants, which, if read literally, would prohibit every Nepali citizen except those formally-trained in Ayurvedic medicine from producing plant-based medicines.¹⁴ The traditional *baidyas*, most of whom do not have formal institutional training in Ayurvedic medicine, now find themselves in open dispute with their professionally-trained colleagues, for they see the new regulation as threatening to their very livelihood. Nonetheless, recognizing the potential loss of centuries of botanical medical knowledge should the regulations be widely enforced, the traditional community has responded with a certain degree of openness about both their formulas and their preparation methods. Sharing medical knowledge during open monthly symposia is new to the traditional community.

Intending to protect the people from dangerous medical practices, the state is declaring one kind of knowledge superior to all others - the knowledge obtained in institutions of higher education. Consequentially, the mechanisms for regulating medicine have shifted from local community control to the state through its oversight of educational, health care, and modern development institutions.

Physicians and Plants in Ayurvedic Education and Health Care Development

People involved in Ayurvedic medicine agree that medicinal plants are central elements in two issues at stake in Ayurveda's future in Nepal, namely the development of Ayurvedic institutions and human resources, and the environmental protection of medicinal plants that are the basis for its therapies. For both formally- and non-formally-trained physicians caring for and preserving plant life is equivalent to caring for and preserving human life, although non-formal routes of knowledge transmission more thoroughly teach about plants than do the formal institutions.

For physicians the human body is more than a part of nature, it is a microcosm of the physical and living natural world, undoubtedly of great complexity and distinct in its possession of consciousness and spirit, but nature nonetheless. The physical body sustains a balanced equilibrium of humors through conscious and intelligent effort on the individual's part to recognize and utilize the material, natural world around her. Furthermore, one is predisposed through one's *prakriti*, one's own characteristic nature, to respond to the natural world in distinctive ways. Just as the medicinal quality of a plant will vary according to the soil in which it grows, so too the body and the individual will grow in organic connection to their nature and the environment they live in. Thus, the doctor must examine and evaluate what is called the 'field,' or the full, integrated body of the patient, view the present disorder within that multi-dimensional site, and decide

treatment accordingly. Like the biomedical doctor who crafts a treatment from synthesizing symptom and therapy (pharmacological, etc.), the *baidya*, too, must connect pharmacological knowledge to symptom and field. This requires medicinal plant knowledge, typically gained in rural apprenticeships, urban lineages, or formal Ayurvedic pharmacology courses called Dravyaguna. However, the increasing integration of allopathic medical ideas into Ayurvedic medical education has meant that students spend less time spent in courses on medicinal plant identification and increasingly more time in modern biomedical and related subjects. Part of the problem stems from the fact that as Ayurvedic education becomes more urban and more integrated with allopathic medicine, the opportunities to develop plant identification skills become limited.

Dr. R.R. Koirala, a prominent member of the Ayurvedic community and a former teacher at Naradevi College, is critical of the current lack of attention to field experience in Naradevi's Ayurvedic medical curriculum.

It's not a matter of making comparisons between now and the past. The vision at the start of the institution was defective. When a student graduates he does not even know how to grind a plant. When the students collect the plants, do they collect the right ones or not? They read about beautiful plants in the books, but if they spend about a month in the field and observe how the plants grow they'll have even better knowledge.

Dr. Koirala himself attributes his knowledge of plants not to his education at the highly esteemed Banaras Hindu University, but to his life with a particularly gifted aunt as a youngster in village Nepal.

As a young farmer I had a lot of experience in these things. My elder aunt showed me so many things. She didn't have any children of her own but helped take care of six of us. Although I do not remember everything, I do remember that I was always with her when I was ill. When my brother was severely ill for more than fifteen days, I remember collecting some plants with her. We collected leaves of specific colors and at specific times of the day. People like her had much more knowledge than our formal knowledge in Ayurveda. Some plants are most effective during full moon but not all of them. Today's students should experience this.

For this well-respected teacher and doctor, direct experience with plants in their natural environment by doctors-in-training is very important to their development as doctors.

Some physicians are filling gaps in their own education by spending time in apprentice relationships with knowledgeable doctors. Dr. Sabitri Thapa is dismayed that although her Bangalore education was excellent in pure Ayurveda, she learned only the local names for plants - not the Latin and certainly not the Nepali names. So she finds herself unable to teach effectively about medicinal plants until she completes the informal

tutoring she is receiving from her colleague, Dr. Narendra Tiwari, a leading Ayurvedic botanist.

One innovative approach taken by two highly successful physician-teachers interested in promoting and helping develop Ayurveda in Nepal involved incorporating Ayurvedic pharmacology into allopathic medical education. A main goal of Dr. Lokendra Man Singh and Dr. Tiwari, both members of the Naradevi teaching staff, was to increase biomedical pharmacists' use of medicinal plants. During one meeting I attended between the principals at the Institute of Medicine campus in Maharajganj in April 2000, the doctors introduced to the pharmacy faculty the idea of including Ayurveda in the B.Pharm. degree, including identification of major medicinal plants, their use in Nepal, and Ayurveda's crude drugs standards and manufacturing methods in the curriculum for the pharmacy degree. They encouraged the inclusion of the principles of Dravyaguna (Ayurvedic pharmacology) in the otherwise allopathic curriculum, to constitute a minimal 5 percent of the entire pharmacology graduate program. Pharmacy graduates would then be employable in Ayurveda dispensaries, as well as in allopathic pharmacies.

Another level of rational management introduced into Ayurvedic medical organization is found in various WHO projects. One of the largest and most influential organizations to promote traditional medicine globally, WHO advises on how best to convert non-western science and non-scientific practices into western scientific ones. Through their partnership with the government of Nepal and under the direction of the Department of

Ayurveda, WHO supports projects under their general guidelines of quality assurance in medicinal practice and drug manufacture; one such project I partially observed was the development of an essential drug list, described below. A second involved research on hepatitis A to evaluate the potential toxicity of certain traditional applications.

Underlying the seemingly useful production of drug lists for countries like Nepal rests a particular kind of ordering of medicine intended to alleviate fear (of toxicity or fraud, both only speculated and rarely documented) by making Ayurveda's use more regulated (and hence more rational). WHO has also provided funding to stock rural pharmacies and to enhance the Vaidyakhana's production system.¹⁵

In the last week of July 1998, during the early stages of my research on Ayurveda in Nepal, I attended a two-day workshop at the Plaza Hotel in Kathmandu entitled "Workshop on the Preparation of Essential Drugs List from Medicinal Plants." It was attended by 14 practitioners and organized and sponsored by the Ministry of Health, the Department of Ayurveda, and the WHO. The participants first established several principles for the medicinal plant list. They agreed that they would not list plants that are rare or endangered, and would include on the list plants that were easily identifiable. The list would also contain some mineral salts. Finally, the list should be local, not "foreign" - meaning that it would not include plants from India. As they proceeded, they based their inclusion criteria on the cumulative experience of clinicians and the recommendations of the classical medical texts, and explicitly not on laboratory identification of a plant's active chemical make-up. Modern scientific techniques were briefly discussed in the

context of “animal experimentation” conducted at Banaras Hindu University. Dr. Singh voiced strong dissent to including drugs verified in this manner, claiming there was no need to know the chemical constituents of drugs. As he put it, “We all drank our mother’s milk without knowing the chemical make-up and it was good for us!”

Science is a symbol that has come to represent in Nepal the modern present, in contrast to those knowledge systems like Ayurveda that originated in the country’s pre-modern and traditional past. In justifying the virtual exclusion of Ayurveda from national health care plans that are tied to development funding, for example, the refrain is the same -

Ayurveda is not scientific, so it cannot be included in a substantial way. The arguments that have been made over the years for claiming that Ayurveda is, in fact, one of the earliest and most enduring forms of medical science, in the broader sense of that term, are rejected by the allopathic community in Nepal. They note that Ayurveda fails to test its hypotheses and does not, in their erroneous view, allow for revision based on experimentation. The natural and historical experiment that is Ayurveda today seems to be unavailable to the allopathic community’s vision of legitimate medical knowledge.

Ayurvedic Development is Plant Conservation

A point of national pride for Nepalis is their country’s unique geography, ranging from the flat plains of the southern tarai to the high northern Himalayas. Ayurvedic doctors consider the unique ecology to be the foundation for the rich resource of medicinal plant variety. But they are increasingly alarmed at the state’s inability to protect medicinal

plants or to successfully develop the resource commercially for national and international trade. At the same time, other foreign countries, in particular India, are perceived to exploit Nepal's medicinal plant resources, often selling processed and packaged Ayurvedic medicines back to its own citizens

Like many of her developing country peers, Nepal's environmental conservationism is an effort jointly approached by a patchwork of government agencies, NGOs, and INGOs, all either fully or partially dedicated to some aspect of environmental or biodiversity conservation in the country's unique habitats. The main environmental players are the Ministry of Forestry and Soils Conservation, the World Wildlife Fund, ICIMOD, International Development Research Center, Canadian Centre for International Studies and Cooperation (CECI), smaller agencies funded through international donations, and academic departments at Tribhuvan University. Ayurvedic physicians serve as botanical consultants on some of these conservation projects. While it is not the point of this chapter to delineate ideological differences among the various conservation agencies, it is worth remembering that what they tend to have in common is a technologically- and scientifically-oriented approach to environmental conservation that draws from international practices and standards, with many institutional agents having been trained in western countries. Indeed, the burgeoning but largely foreign-driven interest in medicinal and aromatic plants (MAPS) conservation was made delightfully evident to me while I was on a trip to visit the head physician at the zonal Ayurvedic Hospital in Dang, Dr. Devi Bhandari. I had been delayed by about six hours at the airport in Kathmandu,

and upon arriving in Dang, I was kindly offered a ride to my final destination by some fellow travelers on the small aircraft. The driver introduced himself as the regional judge, and I introduced myself and the topic of my research. A backseat passenger was interested that I was studying Ayurvedic medicine. He enthusiastically noted that “as we drive along there are medicinal plants on both sides of the road. Everybody uses Ayurvedic medicine in some form, in their homes. People recognize the plants.” He sounded like a botanist and when I inquired he explained that he was a forester studying for a doctorate in England. In fact, two of the three men in the backseat were doctoral students from England - attending Leeds and East Anglia. One was studying the impact of forestry management on marginal landholders and the other was recording local people’s knowledge of medicinal plants. We exchanged cards and I got out in front of the large compound that is the regional Ayurvedic hospital. What I recall thinking and feeling from that encounter was first, how much I admire and enjoy what can rightly be called a deep affection the Nepalis have for plant life. I was quite delighted to be so politely dropped off in front of a very popular and important regional Ayurvedic hospital, run by a somewhat controversial woman physician, by a carload of Nepali cum international plant lovers who were equipped to have had a knowledgeable conversation with Dr. Bhandari about medicinal plants. And I also wondered if they were able to retain their local understandings of human-plant relations while being indoctrinated into the science of western environmentalism and western botany. I remember deciding they likely were comfortable with the fit. I am not certain I would agree with that conclusion today, ten years later.

Medicinal plants conservation in Nepal is unique because of the Ayurvedic medical community's involvement in it. This makes sense due to their professional dependence on the quality and quantity of medicinal plants in the country. Data about non-timber forest products exportation, for example, which is mainly comprised of MAPS and range from official estimates of \$4.7 million in royalty to nearly \$27 million unofficial, interests the medical community as they monitor in particular annual exports to India (alone estimated to be \$18 million; Kanel 2000).

At a symposium on Ayurvedic medicine I organized in August 2000 at the American Center in Kathmandu, a group of Ayurvedic doctors addressed the topic of plant exportation from a number of different directions. Dr. Tiwari expressed the community's concern about the neglect of Nepal's plant resources.

We are very rich in biodiversity, especially the diversity in plants. We are ranked 27th in the world in biodiversity. But we have to see it as a potential for providing revenue for us, as a major economic resource of the country. We are said to be rich in water resources but we have to buy a bottle of mineral water for 20 rupees. Similarly, we are rich in *jaDibuti* but the government has no interest in developing their production. With difficulty, a Vaidyakhana at Singa Darbar has been established. The local manufacturing units of Ayurvedic drugs in Nepal fulfill only 15 percent of the internal demand while the remaining 85 percent is

imported from India. The maximum portion of our medicine is from the Dabur Company. Dabur Nepal also produces the maximum portion of the finished products that are exported. This company does not belong to the government but to the private sector.

No one knows precisely how many plants have medicinal value. Contrary to the oft-cited number of 700 medicinal plants in Nepal, Dr. Tiwari notes that he himself has identified 1463 that are used by people, and he believes that his data may be incomplete. In his description below of the cycle of debt through which poor villagers become involved in the legal and illegal trade of medicinal plants, he strongly advocates that Nepal become more self-sufficient in the area of medicinal plant conservation, warning that the current state of affairs leaves Nepal vulnerable to global forces with potentially devastating outcomes.

The government states that we should encourage the growth of the medicinal herbs. But to which species should we give priority? In Nepal we haven't been able to utilize the 1463 species of medicinal plants. In China there are some 30,000 species but there are only 5,000 species that are traded. Here there aren't even 700 species traded. There is no research and development program on medicinal herbs that could investigate which of the 1463 species are vital or potentially beneficial for us. There are no organized government bodies to promote their use. The tendency we have is that if an American comes here and

discovers that we have *taxus*, then we start to cut the plants and supply them to America. And what economic impact will it have when America starts using their technology to synthesize *taxus*? Take another case of *raulfia* or *sarpaganda*. There was a time when its roots were excessively supplied to the foreign countries. Now the government has banned its collection. When we have abundant natural resources, we seem to sell them away hoping to become a millionaire overnight. We never think about the long-term impact... What we need to remember is that most of the species of these herbs are going out through wild collection. In the case of wild collection, poor villagers who have difficulty for their everyday lives collect the plants. First, they take loans from moneylenders who then demand a certain quantity of plants within a given period of time. Hence they create their own rates, not the market. What happens in the villages is that they usually have to collect the plants from the common lands. So everyone wants to collect the plants first no matter if they are immature. They do not have time to wait till the plants mature, bear fruit and drop seeds that will grow into new plants. What will be the quality of drugs made from these immature plants? If one genus or species is lost from the wild, it is like losing one of our precious jewels... In the high altitudes, there are many such species that are rare and endangered.

Many Ayurvedic doctors today hold workshops and manage plant collection and drying rooms in their clinics and homes to educate local communities about plant identification and conservation.

The National Apothecary Dr. Tiwari mentioned is Singa Durbar Vaidyakhana, established as Nepal's first organized medical structure nearly 315 years ago during King Pratap Malla's reign. Originally established in the royal palace, it was moved to Hanuman Doka by Prithvi Narayan Shah, and then eventually moved to its present location by Prime Minister Jata Shumshere Rana over 80 years ago. Its primary function is to produce Ayurvedic medicines from Nepal's medicinal plant resources using classical methods, and to obtain patents for various formulas. There is an Ayurvedic doctor available for consultations at the facility. On 23 July 1998, after a week of preparations, an official ceremony was held to mark the establishment of the Apothecary as a semi-autonomous unit, separate from the government and to be run like a private enterprise. One of those who spoke at the ceremonial opening of the Apothecary was Dr. Krishna Kant Adhikari. At that time, he was the President of the Board for Singh Durbar Vaidyakhana. He told me in a series of interviews later that he became interested in Ayurvedic medicine at ten years of age, when his mother became seriously ill from postpartum complications. The family brought her to Kathmandu, a six day walk, but she eventually died after one year. After that experience, he decided that he "must know why people suffered from illness." He apprenticed with a neighbor for a while, but then discovered there were no good Ayurvedic medical programs in Nepal. He studied

Sanskrit at Banaras Hindu University when he was 16 years old, and then attended the Ayurvedic college there. He returned to Nepal at age 23 and began government service in villages that continued for 18 years. He returned to Kathmandu and taught at Naradevi for 10 years then founded the Department of Ayurveda in 1982 with the support of King Birendra. As its Director-General, he received a WHO grant for developing Ayurvedic medicine. Dr. Adhikari worked his entire life practicing and advocating for Ayurvedic medicine, and in his retirement others continue to press for personnel and other resource support from the government.

However, Ayurvedic medical development currently does not center on institutional and personnel development, but rather on issues related to plants and to plant-based medicines. In emphasizing the central importance of plant conservation in developing Ayurveda in Nepal, though, we must acknowledge that this reflects Nepalis' understanding of medicinal plants and the value they place on them, on the one hand, and the state's inability to act autonomously of international and global pressures to modernize its health care system, evident in the state's lack of significant attention to Ayurvedic educational and institutional resources.

Meanwhile, in the homes and clinics of numerous Ayurvedic practitioners, conservation of plants continues. Nathi Maya Dhoubadhel, a traditional practitioner from Bhaktapur, told me of her concern that the plants could no longer grow in the urban environment

because of burgeoning housing development and the use of chemical fertilizers. At her home, she grows many plants in beautiful hand-made pottery from Bhaktapur.

An important way that the Ayurvedic community partners with local communities in medicinal plant conservation is through programs designed to identify local plants, utilizing people's knowledge of plant-based medicine. The staff at the Ayurvedic Health Home (owned and operated by Dr. Koirala), and the Dhanwantari Ayurvedic Hospital and the Devima Rural Ayurvedic Hospital (supervised by Dr. Shrestha) all maintain plant drying rooms filled with specimens collected locally. One of the oldest living traditionally-trained Ayurvedic doctors in Nepal until his death five years ago, Siddhi Gopal Vaidya was very concerned about the decline of medicinal plants in the country, and he held many discussions with high level officials, including former Prime Minister Bhattarai, about the country's need to accelerate conservation efforts around medicinal plants. During my visits with him over six years at his home-based clinic in Patan beginning in 1998 when he was 92 years old, Siddhi Gopal spoke about many things related to Ayurveda, always emphasizing the role that poverty plays in the destruction of biodiversity, as the market for high altitude medicinal plants had become quite lucrative in a country with limited employment opportunities outside of the familiar farming. He himself held several ropanis of land outside of Kathmandu Valley on which his son cultivated medicinal plants. Still, alongside his sustainability concerns Siddhi Gopal was also worried about the next generation of healers. Coming from 23 generations of Ayurvedic doctors himself, he wondered if any of his sons or daughters would take up the

profession with as much passion and dedication as him. One son was apprenticing with him during the day when he had time but because he had not enrolled in any formal Ayurvedic medical programs the son would be ineligible to legitimately practice under the government's new guidelines until he was 60 years old himself.

Conclusion

When I first traveled to Kathmandu nearly three decades ago there were rice and wheat fields (*khets*) scattered throughout the neighborhoods of Thamel and comprising much of what is now the popular and developed area of New Baneshwar. Now, one finds urban farming in small vegetable plots and fruit trees, with most people buying their food supplies from the thousands of little shops and vendors scattered throughout the valley, often supplementing purchased items with food supplies from village family farms. The *khets* are gone, replaced by neighborhoods of new homes, shopping centers, business plazas, schools, and all that constitutes growing urbanization in a poor country. With the cessation of rural violence and the new government in place, migration back to the villages may loosen the stranglehold on urban infrastructure. Indeed, better informed and greater rural activity may be the context in which Ayurvedic medicine continues to be practiced and to evolve, including increased awareness of how to sustainably harvest medicinal plants. Standing in the way of such beneficial contributions to the development of a fully engaged plural medical system is government action that at times seems less informed by the real needs of the medical community than by the opinions of outside expert advisers from biomedical cultures. The medical licensing statutes, for example,

serve to limit future generations of traditional providers, and the lack of Ayurvedic medical education personnel and resource development curtails progress in formal medical education. At the present, the state's overall lack of support for one of the country's most important and popular indigenous resources misses the opportunity to advance health care development.

Notes

¹ This chapter focuses on non-timber forest products. Nepalis are also very dependent on timber, a resource that was heavily exploited throughout the twentieth century and that has achieved a comeback with community-based forestry conservation.

² Approaches to healing that are considered Ayurvedic will be delineated in a later section to show both their relationship to each other as well as their uniqueness, and to provide an albeit brief description of the kinds of Ayurvedic medicine practiced in Nepal. This chapter will not address the issue of Indian vs. Nepali Ayurvedic medicine.

³ The raising of animals and the consumption of meat also have economic, medical, and ethnic importance among Nepal's diverse populations, but will not be addressed here.

⁴ Ayurvedic medicines also may contain minute quantities of animal materials and metals, but are not discussed here.

⁵ *Dosas* are characterized by both *gunas* and tastes, though only bile (*pitta*) and phlegm (*kapha*) are thought to have tastes. The twenty *gunas* are heavy/light, cool/hot, unctuous or oily/rough, dull/sharp, immobile/mobile, soft/hard, non-slimy/slimy, smooth/coarse, gross/subtle, dense or solid/liquid. The six tastes are sweet, sour, salty, pungent, bitter, and astringent. Wind is rough, light, cold, subtle, mobile, non-slimy, and coarse. Bile is unctuous, sharp, hot, sour, fluid, pungent, mobile, and liquid. Phlegm is unctuous, cool, soft, sweet, immobile, and slimy. Throughout much of South Asia people commonly apply ideas associated with the qualities of the *dosas*, such as hot, unctuous, sweet, rough, cold, and astringent to many everyday objects, most notably food, liquids, and seasons.

⁶ 1500 tropical to alpine medicinal plants are listed in various sources.

⁷ Wujastyk cautions against using the terms 'balance' and 'imbalance' when referring to Ayurvedic states of health, as these misread into ancient texts more modern concepts associated with western lifestyles (2003: xli). On the other hand, Ayurvedic studies of all kinds use these metaphors and others like aggravated and displaced humors when describing health. The convention is retained here.

⁸ In contrast to the mechanistic model of the human body found in allopathic medicine, Ayurveda

presents a fluid, hydraulic body comprised of the *dosas* and their common sense and easily-identifiable qualities of hot and cold, rough and smooth, sour and sweet, etc., found in the living and non-living world.

⁹ Interview with Shesh Raj Acharya, Superintendent of Naradevi Teaching Hospital.

¹⁰ Ayurvedic education has typically favored Sanskrit as the language used to read the classic texts.

Although these texts are now found translated into other South Asian and European languages, some programs still require that students be able to read and comprehend Sanskrit for the purpose of reading the original language of the manuscripts.

¹¹ In 2002, there were 4154 allopathic hospitals, health centers, health posts, sub-health posts, and primary health centers, and 285 similar Ayurvedic facilities. There are two regional Ayurvedic hospitals, Naradevi Teaching Hospital and College in Kathmandu, with 100 beds, and Dang Ayurvedic Hospital, with approximately 50 beds; there were also 14 zonal hospitals, 50 Ayurvedic health centers, 211 Ayurvedic clinics, nearly 40 private drug companies, 275 Ayurvedic drug dispensaries, and a semi-autonomous drug research and manufacturing institute called Singh Durbar Vaidyakhana which is over 350 years old (Nepal Development Forum 2002).

¹² Interview with Mr. Bhattarai, Managing Director of HPPCL, Koteswor, 8-9-2000.

¹³ One well-known high-altitude state garden is found atop a remarkable 11,000 foot plateau (*lekh*) locally called Khaptad Lekh (in the mid-1980s, Khaptad became Nepal's most recent national park and was renamed Khaptad National Park), located at the intersecting border of Bajhang, Bajura, Achhaam, and Doti Districts. It is most famous for its former occupant, Khaptad Baba, a holy man (*baba*) who was reputedly an allopathic doctor yet treated patients with local plants. Unprocessed medicinal plants grown at the Khaptad garden, a ten minute walk from Khaptad Baba's *kuti*, are supplied to the local Ayurvedic clinic in Kholi, Bajhang and to the Vaidyakhana in Kathmandu.

¹⁴ The section of the Act dealing with drugs permits the prescription, preparation, and sale of drugs defined and listed in published gazette notices by the Drug Distribution Agency in the Ministry of

Health only by individuals who have received permission to do so by the Ayurvedic Council and the Department of Ayurveda. For more details of the politics and history of the full Act see Cameron, 2009a.

¹⁵ Greatly more funding is provided to allopathic medicine through WHO, UNICEF, and USAID.

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