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Medical Works of the Medieval Period from India and Central Asia

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Over many centuries Indo-Central Asians have attained and practised a particular excellence in the medical sciences. This was largely as a result of their own diligent and superabundant efforts at the indigenous level and their ability to absorb imported knowledge that became enriched through brisk exchanges in ideas, thereby earning for them a magnificent legacy of well-deserved appreciation and global recognition. Chinese, Arab, Greek, Persian, Egyptian and Indian medical sciences had an indelible effect on their own populations, and an even longer-lasting effect on one another. It is also surmised that there were 'three stages' in muslim medicinal development during the medieval period: the first phase covered the 'theocratic period, the second reached up to the Ummayyads, the third extended up to the Abbasid period' (Leake, 1975: 72). The first period is characterized by assimilation and translation of Greco-Roman classics under the Nestorians at Gendi Shapur in Persia. The second related to modification of classic concepts and incorporation of Alexandrian traditions from the 8th to the 13th centuries. The third was connected with the widespread diffusion of 'Arabic-language medical traditions to western Europe via Salerno and Montpellier. The climax of muslim drug compendia came with the appearance of Minhajul Dukkin of Jewish Cairo in 1260. Already by the 10th century, there were sufficiently developed specializations in the medical profession with independent professionals like surgeons, ophthalmologists, pharmacists, druggists, veterinarians and alchemists' (Leake, 1975: 75).

In the sphere of medicine, however, India was a world apart as medical sciences had been developing here too from time immemorial. Orientalists have reason to boast that chroniclers and travellers alike had praised the free and subsidized teaching of the healing sciences imparted at Nalanda, Takshila and Varanasi. Students flocked there from China, Mongolia, Tibet, Korea, Japan and elsewhere for practical and clinical training. Not only in Baghdad did 'Greek medicine encounter Indian' (Brockelmann, 2000: 125), but exchanges in medical sciences crossed many frontiers.

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The similarities between Ayurveda and the lore of healing in the Tibetan Bon system of knowledge had many parallels in the world: the Unani system for example emerged out of the Greek, Persian and Indian. In his *Firdausul Hikmat* (compiled in 850), Tabari had called the Indian system of Ayurveda (described generally as science of life, knowledge of human existence and its longevity) as the 'Gift of God'. The legendary information emphasizes that Ayurveda is 'divine' in origin because, according to Hindu philosophy, the universe and all its laws have been decreed by Lord Brahma, who had taught Ayurveda to Daksha Prajapati, who in turn transmitted it to the Ashwinkumar twins from whom it was conveyed to Indra. The medicinal knowledge was, thereafter, imparted to Dhanwantari, the sage princes of Benaras and to all the teachers of the subject. Ayurveda claims to have encompassed all sciences (physical, chemical, biological and spiritual) in its Darshana. It obviously had a more developed arena with eight main specializations: internal medicine (*kayachikitsa*), paediatrics (*kaumarabritya*), psychological medicine (*grahachikitsa*), otorhinolaryngology and ophthalmology (*urdwange chikitsa*), surgery, both general and special (*shayatantra*), toxicology (*damshtrachikitsa/agadatantra*), geriatrics (*jarachikitsa/rasayantantra*), and the science of eugenics and aphrodisiacs (*vrishyachikitsa/vajikarantantra*). Alongside the two main basic concepts of *Panchmahabhutas* and *Tridosha*, the three fundamental biological elements (*vata* or motion, *pitta* or energy, and *kapha* or inertia) with their principles of positive health (*dincharya*, *ratricharya*, *ritucharya*, *sadvrata*, etc.) had made the regimen a way of life more than a medical scheme, supported by astrological studies which helped expert physicians to choose the required herbal drugs in accordance with the patients' ruling planets (Askari, 1958; Kurup, 1983; Leake, 1975; Meyerhof, 1937; Nadwi, 1950). Global popularity was therefore enjoyed by the works (*samhitas*) of Charaka, Susruta, Madhavakar (compiler of *Nidana*) and Vagabhatta (author of many works including *Ashtangahrdaya*).[1] Some inconsistency has been discovered in the anatomical descriptions of early Indian physicians (Hoernle, 1984: 23–5, 36–8, 39–40). Although there may (or may not) be a 'distinction between infectious or metabolic involvement', there was certainly a basic theory of the distribution and proper proportions of the seven fundamental principles of the organism, namely chyle, blood, flesh, fat, bone, marrow and semen. To this could be added excellent surgical skills, diagnosis of diabetes and the detailing of a therapeutic regimen that included baths, enemas, emetics, inhalations, gargles and many plant-based drugs to be taken by mouth' (see Leake, 1975).

The greatest tribute paid to the Indian system came from Avicenna, who categorically acknowledged in *Al Qanun* (*The Canon*) that he had benefited tremendously from the Indian *jogis* he used as one of his sources. Repeated translations of the Indian classics, new compilations of the works and researches on the subject prove it beyond doubt. In Baitul Hikmat, there had been a library, a translation bureau and an academy, where Indian works were translated. The Barmakid Yahya Ibni Khalid (805AD), vizier to Caliph Mehdi and tutor to Harun ar-Rashid, is said to have sent an Arab to fetch Indian herbs and drugs. Indian *vaids* and Hindu philosophers were also invited. A book on moral ethics and Indian religions entitled *fi milal wa Hind adyaniha* was also prepared, though only its fragments are extant (see Kurup, 1983: 50–60; Leake, 1975: 80–1). In India, many works were prepared in the Persian lan-

guage on the basis of Indian classics. Apart from the numerous treatises, compiled under the early Mughals, there were: Sharif Khan's compilations in the 21st regnal year of Shahi Alam, particularly *Tibbi Talifi Sharifi* and *Talifi Sharifi dar khawasi adwiyai Hind*, *Ikhtiyarati Zafar Yar Khan* and *Mufarradati Talimi Ilaj* (1241) comprising 228 pages and containing Persian, Arabic and Hindi versions of all the diseases and herbal medicines, their method of use and their effects. Numerous works deal with diagnosis, prevention, cure, alleviation of the symptoms of diseases, promotion of optimum health, empirical photopharmacology, collecting, analysing, codifying and transmitting information on folk remedies. With the emergence of quantitative chemistry and biology, in the 18th–19th centuries, pharmacology developed as a genuine science (Leake, 1975: 5–8).

A continuous exchange of information about drugs from China, India, Mesopotamia and Egypt, via the Greek and Roman medical writers (particularly Dioscorides and Galen) seems to flow into the Byzantine and Islamic worlds. Even after the fall of the Roman Empire, the florescence of intellectual activities continued (Leake, 1975: 56). Aside from the peaceful days of exchanges in ideas, men and commodities, there were hectic and difficult days of wars and invasions, and the ongoing process of trade and commerce too, which had played an important role in spreading the knowledge of medical sciences, as well as the spread of contagious diseases, from one corner of the world to another. Doctors were able to learn from studying the anatomy of wounded men. It is surmised that knowledge of serpent root was brought from India to the Greek world during the conquest of Alexander the Great because the use of serpent root as an agent for the treatment of mania was described by Dioscorides – a surgeon in the armies of Nero (Leake, 1975: 56; see also Bugl, 2001). Syphilis spread throughout Europe in the 1490s: the bellicose nature of the regimes of the time, with their many standing armies, extensive use of mercenaries and frequent battles, was conducive to its rapid and efficient spread via the camp-followers of the warring parties. The disease reached Germany and Switzerland in 1495, England and Holland in 1496. Vasco da Gama's crew carried it around the Cape in 1497, causing an outbreak in India in 1498, which in turn spread eastward. China and Japan were affected in 1505, a full 15 years before the arrival of Portuguese sailors in Canton. Similarly, it has been categorically stated that 'Between 1339 and 1351 a pandemic of plague traveled from China to Europe known in Western history as the Black Death'. Due to the significance of the comments, the entire passage is quoted here:

> Carried by rats and fleas along the Silk Road caravan routes and spice trading sea routes, the Black Death reached the Mediterranean basin in 1347, and was rapidly carried throughout Europe from what was then the center of European trade. Eventually, even areas of European settlement as isolated as Viking settlements in Greenland would be ravaged by the plague . . . Since plague is not native to the European region, the relationship between medieval trade and medieval Europe's greatest ecological disaster becomes obvious. (TED Case Studies)[2]

The plague began in China in early 1330–1 and is known to have been carried along the Silk Road into Central Asia, where there are records of an outbreak in 1339. Slowly, the plague reached Sarai on the Volga River, then the Crimea in 1345. From

there it spread rapidly. By 1346, plague had broken out in Astrakhan, Azerbaijan and throughout the Caucasus. The northern and eastern shores of the Black Sea – where the plague-carrying fleas and rats were picked up in merchant ships and carried south, hiding in bulky crates and scurrying about ship – were riddled with plague. In 1347, the plague struck Constantinople, no longer the centre of Mediterranean trade but still an important port. It went on to reach other important ports that year: Alexandria, Genoa, and ports in Sicily and Cyprus. From there it spread rapidly throughout the Mediterranean. By 1348, there were outbreaks in Cairo, Antioch and much of southern Italy and Europe. Other diseases have been geographically transmitted on a grand scale by trade or travel (e.g. the global influenza epidemic during and after World War I).

Mobility of physicians and medical practitioners from one place to another, both for the acquisition of knowledge and to earn a very good living, was a common feature that further facilitated the exchange of medicinal learning and practices. Ibn Battûta (1993: 562–3) mentions a physician, previously in the service of Tarmashirin, who later became the chief physician of India. Several Indian tribes called Zutt settled in Arabia. Well versed in ancient Indian traditional medicine, such as tantric medicine, they applied their proficiency to the cure of patients. Haris bin Kalada had visited India to study different branches of Indian medicine. The Indian physician Birzantin Hindi, who had been under the patronage of Anushirwani Adil (530–80), excelled in treating patients with herbal medicines, particularly hemp (*Cannabis Indian Linn*), and to him goes the credit of curing different diseases through hemp and acquiring fame thereby.

Gautam Buddha – known as the Great Physician (*mahaabhishek*) – who liberated human beings from the pangs of disease and death, had also promoted the mission of social welfare. The diagnosis of disease (*glanapratyaya*) and the charitable distribution of medicine (*bhaisajyadana*), practised by rulers and saints alike, became the Buddhist tradition, combining within itself the already well-developed principles of Ayurveda with the new and most beneficial features found in any part of the world where Buddhism flourished. The *Tripitaka* gives glimpses of such traditions. Similarly, there are Jain traditions of *Prandvaya* medicines: the twelfth text of the *Purva* (the twelfth division of the *dvadasanga agama*). Since Jains were more strict in observing rules of abstinence, they changed the prescriptions to suit, and used mainly specific plants and minerals as medicines (Sharma, 1992: 117–36).

Under the Abbasids, Barmakids, Sassanids and other rulers, Indian medical practices were adopted, Indian texts were translated as early as the 8th century AD and Indian medical practitioners were invited to work in Baghdad and in hospitals elsewhere. At least seven works of Kanaka were translated for the Caliph of Baghdad. The Vizier Yahya bin Khalid, as well as a monk from an Indian monastery in Central Asia, was greatly interested in Indian sciences and arranged for the translation of Indian medical treatises into Arabic. The establishment of a translation bureau was facilitated by Appan Dhan, an Indian scholar in charge of the Barmakid hospital. In his *Alfihrist*, Ibni Nadim records that Manka or Manik had cured the famous Caliph Harun ar-Rashid of a chronic disease. Bhalla, in Baghdad, had cured Prince Ibrahim. Ibni Baitar, a well-known 13th-century pharmacologist, expressed his appreciation of the Indians' extensive knowledge of medical sciences. If Wasifi

(1971: 485–8, 639–43) is to be believed, Avicenna held the Indian medical scientists, particularly the *kahhalin* (oculists or eye specialists) in high esteem, emphasizing that 'only an Indian physician could cure complicated diseases'. The shopping-list of Abdurrazzaq Samarqandi, a 15th-century Central Asian traveller in India, had prioritized a selection of medicines for various diseases (Samarqandi, 1974: 11, 111). Avicenna's *Qanun* also refers to the Indian system. Rhazes' extraordinary works, including the *Al Hawi fit-tib* and the treatises on smallpox and measles, carry frequent references to Susruta and many other Indian authors. Persian physicians, who had moved to India under patronage of the Mughals, included Hakim Mamina and Hakim Shirazi, Hakim Daud entitled Taqarrub Khan who happened to be the court physician of Shah Abbas of Persia and became the *mansabdar* of Akbar, earning enormous sums for twice curing the ruler. There were women *tabibs* too: one such, Umdatunnisa Satti Khanum, sister of the Talib Amuli, was acknowledged for her medical knowledge and her proficiency in the art of healing (Askari, 1958: 178–9).

Notably, during the medieval period, the study of medicine formed a part of educational accomplishment and was generally included in the standard curriculum of every student in *madrasas* though it could also be pursued separately as a professional course or developed through professional practice. Talents like those of Rhazes, Avicenna, Omar Khayyam and Farishta are cases in question. The acknowledged importance of health and its preservation (by kings and commoners alike) led to a tremendous growth in the literature on medical sciences. Apart from India, Persia and Central Asia, China too excelled in the art (Haidar, 1986–7: 121–34). Writing in 1253, Rubruck (1905: 67) notes that the Catayans were 'excellent workmen in every art: and their physicians are well-skilled in the virtues of Herbs, and judge exactly of the Pulse. But use no urinals, nor know anything concerning Urine.'

Similarly, Persian scientists and physicians immensely enriched the medical literature. Abu Mansur Muwaffaq is said to have compiled, towards the end of the 10th century, a valuable work on pharmacology on the basis of a thorough study of Greek, Arabian, Persian and Indian sources. Alberuni (973–1045) had appreciated the Indian contribution in the following words: 'There is no people inclined so much to sciences as the Indians. But this branch (medicine) particularly is based by them on principles which are opposite to the western rules to which we are accustomed. Moreover the contrast between them and ourselves concerning religion, manners and customs and their excessive care concerning purity and uniformity prevents intercourses and cuts short scientific discussions.' And the Indo-Muslim culture had further contributed to the enlargement of this literature. Maulana Damishqi's two books *Dasturul Attiba* and *Ikhtiyarati Qasimi* are a detailed study of varied diseases, their cure and the medicines to be prescribed. Damishqi's preface brings to the fore the mutual exchanges of information and the shape they took over the years. He writes: 'Failure to get as good a response in India to the medicine which he had been accustomed to prescribe in Persia made him think over the special circumstances of climate, soil and products of India and the constitution and temperament of the people of his land of adoption. He began to study the books of the Indian authors (some of whose names have been mentioned by him) and the properties of the Indian drugs, and thought it worthwhile to compile a new fresh book' (Askari, 1958: 176).

Many medieval rulers were deeply interested in the compilation of medical works, treatises and diagnostic and medication directories and calendars. Both Barani and the author of *Sirati Firuz Shahi* mention the medical treatise *Shikar Namai Firuz Shahi*, which is said to have been prepared by the Sultan of Delhi, Firuz Shah himself. Barani emphasizes the fact of Firuz Shah's expertise in the art of treatment of animals. Another book, *Tibbi Firuz Shahi*, was compiled 'at the instance and under the direction of HM Firuz Shah Tughlaq, giving positive proof of his skill in the medical sciences. The treatment of the diseases which have been dealt with in the storehouses of the *Qanun* can be learnt from the book. Whosoever wants to get his ailments cured should turn to the work.' Yusuf Shahabi had diligently compiled 'a compendium of medical sciences containing anatomical, physiological and medical matters' for Bahram Shah (Askari, 1958: 174). Sultan Zainulabidin of Kashmir, a great patron of physicians, had a number of clinical treatises translated. The two famous physicians of the times, Shribhatta and Mansur bin Ahmad, were associated with his court and Mansur had dedicated to him *Kefayai Mujahidiya*, *Jawahirul Ulumi Humayuni*, the encyclopedic work prepared in 946 by Muhammad Fazal for Humayun, which also included a section on medical sciences and physicians. Nuruddin Shirazi's work *Zakhirai Dara Shikoh*, a two-volume medical encyclopedia, had been dedicated, as the name suggests, to Dara Shikoh. Abul Qasim Farishta, the well-known historian, was a good physician too. Another chronicler, Mir Masum Bhakkari, is widely respected for his books on medicine, particularly *Mufarradat* and *Tibbi Nami*. Hakim Mohammad Razi Shirazi spent 10 years (1669 onwards) compiling the book *Riazi Alamgiri*, devoted to the study of materia medica and principles of the preservation of health, which he dedicated to a Mughal king. Aside from the renowned physicians of Akbar's period, whose names have been chronicled by Badauni and others, there were at least seven from the time of Jahangir and nine from the time of Shah Jahan who made a name for themselves. *Tibbi Arzani* was prepared by Hakim Arzani and dedicated to Akhbar, the son of Aurangzeb. A work like Bhuwa's *Maadanush Shifa* also known as *Tibbi Sikandari* (comp. 918/1513) contains treatments for 1167 diseases. The magnum opus of Chakrapanidatta, the renowned Bengal physician, deals with the treatment of different diseases by using metallic preparations such as *makradhwaj* or *rasasindur* (innovations by Vagbhatta, Vrinda and others). As would be discussed later, even when Islamic sciences had spread across Indian soil, the ancient Indian medical sciences in their developed form continued to be valued and to flourish alongside the new. It is said, for example, that Miyan Bhowa had drawn copiously from the works of Sarangdhara, Vagabhatta, and from the *Tibbi Bhavshabad*. The noted physicians of Akbar's period included men like Mahadev, Bhim Nath and Narain. There were, besides, others like Nilkantha from Hugli, and Baijnath and Sheo Gobind from Patna, The latter had, in November 1671, mentioned remedies for diseases like gout, dropsy, calculus and syphilis (Askari, 1958: 178–9).

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Numerous works were compiled in Eurasia on the veterinary sciences, in particular the diseases of horses – an animal for which there was so much need in wartime. In

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Shikar Namai AilKhani, an early work on veterinary medicine compiled in Iran during the reign of Naushirwani Adil, it is specifically stated that Indians were the world-renowned authority in ethology or the science of animal behaviour. Innumerable works were written on animal diseases. Works on the diseases of horses, like Hafiz Lakhnawi's *Jamiul Barkat dar Ilaji Aspan*, are unparalleled. Other famous books, aside from the *Faras Nama*, written perhaps under Mahmud of Ghazna, include the *Salihotra* of Bhoja (Rajput period), the *Mualijati Tujur* (on the treatment of birds), and *Baznamai Firuz Shahi*.

The *darukhanas* attached to the hospitals and medical schools supplied medicines prepared on their own premises. Ibrahim (the grandson of Mahmud of Ghazna), who died after a long reign of three decades, had all kinds of concoctions and medicaments in his *darukhana*, particularly medicines for eye diseases (*darui chashm*). Despite the flowering of various branches of medicinal knowledge, like pharmacy *(Dawasazi)*, surgery *(Jarrahi)*, physiology *(Manafiul Aza)*, anatomy *(Tashrihul Aza)*, therapeutics *(Tashkhiso Muolija)*, ophthalmology *(Ilmi Imrazi Chashm)*, the expertise of phlebotomists or blood-letters *(Fassad* or *Ragzan)*, and the spread of chemical and herbal medicines all over the world, a hangover from the past remained in the form of a continuance of medical pluralism (i.e. the traditional, folkloric and magical practices, sorcery, astrological medicines, medicinal bowls engraved with magic symbols and alphabets, talismanic shirts, versified spells and incantations against diseases, narrative medicine, amulets and charms, faith healing, spiritual and emotional healing, and so on) as well as the more solid and useful science of *Hatha yoga* and *Pranayam* (breathing techniques). Philanthropic rulers and holy men constructed charitable hospitals.

The sultans of Delhi took a special interest in the development of medical sciences. Discussing the physicians of Alauddin Khulji's reign, Barani notes 'there were physicians in the Alai age whose genius and accomplishments in the treatment and cure of diseases could well compare with those of Galen and Hippocrates. Such physicians as flourished in the reign of Alauddin have not been seen in any age or period' (Barani, 2006: 192–3; see also Askari, 1958: 176–8). Referring to the master physician *(ustad ul Attiba)* Maulana Badruddin Damishqi, Barani adds that: 'people flocked round him to take lessons in medicine, and the eloquence, lucidity and clarity of thought in his lectures was extremely impressive. The knowledge of diseases, cures and details of different problems, based on the information acquired from the *Qanun*, *Qanuncha* and from other such valued works, caused people to bow down before him in appreciation. His easy, quick and correct diagnoses, merely by taking a patient's pulse, and appropriate treatment of the problem made him a popular physician. Many other *tabibs* excelled in diagnosis, prescriptions and cures. These included Maulana Sadruddin, Maulana Izzuddin Badauni and Tabibi Yamani. Nagauri and Brahmins were described as being particularly efficient in the art of healing. From amongst these specialists, Mahachand, Jaja Jarrah and Ilmuddin Kahhal were noted exponents who had no parallel in the contemporary world' (Barani, 2006).

If chroniclers like Barani and Farishta are to be believed, Muhammad bin Tughlaq who had specialized in the science of medicine could lay claim to a full knowledge of medical sciences, and he not only examined patients suffering from extraordinary

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diseases, but prescribed medicines, took up the cudgels with seasoned practitioners over the correctness of his own diagnosis, and even went to the extent of diagnosing and medicating himself when he fell ill at Patan. Similarly, Firuz Shah Tughlaq also excelled in the art of medicine and healing on demand. Having a thorough knowledge of the structure of the human body, he surprised his audiences when he delivered lectures on the arteries, nerves, veins, muscles, bones, etc. Examples of medicines prepared in his *darukhana*, particularly those with herbs and other ingredients widely and cheaply available, have been included in certain works. The collyrium prepared at the *darushshifa* (hospital), following Firuz Tughlaq's prescription and called *kuhali Firuz Shahi*, included the skin of a black cobra as one of its ingredients. Such was the demand for it that a supply was always kept available.

In Central Asia and Persia too, many rulers and highly placed officials took an interest in medical research. Rashiduddin Fazlullah, the famous historian, was an excellent physician too. He had ordered a book from China, which he translated under the title *Tansuq Nama,* to which he added his own preface. Babar and his successors had richly contributed to the sphere of medicine. Akbar's 'healing touch', which Abulfazl named 'shast', is an interesting feature, and so is Badauni's listing of those physicians who were notorious for expediting their patient's journey to the world hereafter. Medicinal *madrasas* for clinical and practical training were attached to hospitals. Some of the famous ones included Darulbaqa and Darul Shifa (Barani, 2006).

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Against such a background, this article now brings to light and discusses five rare and informative works selected from the vast treasure-house of medical treatises and books produced in the Indo-Persian language. These works have been chosen mainly because they deal with details relevant to our modern needs, and so this article also deals with works of interest that cover the common diseases prevalent among all nations and nationalities due to the present-day demands of a competitive world: diseases of the human psyche, reasons for depression, stress, sleeplessness, drug addiction – all of which can be treated herbally – and the sadness described as a principal cause of declining eyesight and greying hair. These books, compiled into pharmacopoeias, provided not only the botanical names, their renderings into other languages, and their habitat, but prescriptions, with their ingredients correctly measured and weighed, and also their specific properties, plus the art of preparing electuaries (powders) and medicines through a combination of minerals, herbs, the ashes of precious stones, the use of medicinal plants, etc., the processes of distillation, and their dosage (which makes it possible to try them), and conveyed a holistic understanding of the human body, the principles for combining medical-herbal formulas, the process of ageing and its prevention, the role of bodily fluids, alimentary therapy, and so on.

Babar, like Gulbadan Begam, had referred to the excellent services provided by the bonesetters. Cases of burns and even plastic surgery (with all the crudity of its medieval methods) had been mentioned. When the surgeon Arif had cured Jahan Ara of severe burns, by confining him to bed for four months and by use of a good

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ointment of his own make, Shah Jahan had rewarded him with a robe, a horse and 7000 rupees. If Manucci (1990: 33) is to be believed, 'the surgeons of Bijapur could cut the skin of the forehead above the eyebrows and provide artificial noses for those who had been mutilated and disfigured by the Mughal soldiery' (Babur, 2002: 88–9, 106–9, 120–1, 169–70, 258, 261–2, 409, 413, 585, 608–15, 701–2).

Although Hakim Bhuwa's work *Maadanush Shifai Sikandar Shahi*, compiled in 918/1513 during the reign of Sikandar Shah and comprising 1238 pages, is one of the most widely known and frequently quoted works, but some of its sections have peculiarities not yet well enough explored. Various pages reproduce Quranic verses to be recited for the cure of assorted diseases. There are curious calligraphic writings, amulets, incantations and *taviz* for sickness. A separate section deals with how to know whether the patient is going to survive or not and recommends ways to work this out. For example, the book suggests that the physician should keep his left hand on the patient's navel. If the navel is felt to shake or make any kind of movement, it is a sure sign of recovery *(agar naf bejunbad dalili sehat bashad)*. Another such method is to throw the patient's nails into water: if they sink below the surface, the patient will live; if they float on the surface or 'swim' the patient is doomed to die. It also proposed that the physician should study the patient's breathing pattern. If breathing from the left side is maintained, there is hope for the patient's life. Chapter 16 of the first section (comprising 32 *fasls*) deals with good and bad omens *(fail neko bad ki badan sehat yaftan o na sehat yaftan i mariz malum karda)* for recovery. Chapter 25 emphasizes the importance of geography, how regional factors affect health and how to cope with these effects in a given set of circumstances. Importantly, Bhuwa Khan has produced a translation of every known illness into the Indian language, making it easy to understand which disease he is talking about. Interestingly, too, a prescription and methods for turning grey hair permanently back to black is given in chapter 72 of the third section *(dar tadbirahai ki azan mui safed siyah gardad)*. Chapter 64 deals with the problem of infertility and recommends preparations for facilitating conception. The following two chapters discuss at length female diseases which are common or afflict women during pregnancy.

While highlighting the significance of and need for medical institutions called *ilmi Tibb*, Bhuwa Khan has emphasized the fact that, professionally, physiologically and medically, the Greek medical sciences do not seem to be suitable for treating the Indian temperament and responding to the Indian climate. Besides, with the names of the medicines and diseases having been given in Farsi, the details of these works are not intelligible and translatable into an Indian context. Some of the prescribed medicines are not available in India. Ingredients and their origins are not known. It seemed, therefore, necessary for existing Indian works in the medical sciences to be studied, and for them to be translated and rewritten. At the order of Sikandar Shah Lodi, Bhuwa Khan, who was fully acquainted with the languages (Farsi and those of India) as his father Khawas Khan was closely connected with the Delhi court, took on this uphill task. A concise but comprehensive compendium of all the observations, information and prescriptions of India's *tabibs* and *hakims* was carried out and translated from Hindi to Persian. Listing the noted physicians of India (e.g. Sushurat, Charak, JabiqKaran, Bhoj, Bhed, Bhagpat, Darsan Ratnagar, SazGandhar, Banksen, Chintaman, Marsundan, Jagrut Kashi Dutt and others), he claims that their works

have been summarized by him and re-presented, with additions and new topics: the importance of *ilme Tibb*, *Muqaddamati ilaj*, anatomy of the human body and detailed explanations of each element. The symptoms, diagnosis and cure of diseases have been professionally and proficiently compiled. The book is a piece of valuable and diligent research but its contents also carry the usual stuff of incantations, amulets, etc., perhaps to cater to the susceptibilities of the then clients and possible readers. Seemingly, faith healing was still important, if not held supreme.

Another work, which was written by Darvesh Muhammad Kalim Anbabadi, a disciple *(murid)* of Baba Fath Farid Ganj Shakar, and entitled *Tibbe Aurang Shahi Qamiul Imraz*, was dedicated to the Mughal Emperor Aurangzeb.[3] Although compiled much later than the work of Bhuwa Khan, its author claims to have had almost the same purpose, i.e. to present extracts from and summaries of the work of Indian physicians. The *hakim* does not conceal his objective of attracting benefits and royal favours in return for this work. He says that the Emperor's court has witnessed many rags-to-riches stories, but he doesn't want be an ordinary 'drone' and vanish in the crowd. Instead he positively pursues success with his attempt to select valuable information from Indian works, and compile it into seven *babs*. The first *bab* deals with the anatomy, biology and physiology of man. The *arkan* or *anasir*, through harmonious combination, form creatures. All beings with these four *arbai anasir* are fated to die. Anbabadi, however, had criticized some of the Indian physicians like Dhantari, Sushruta and Charak for having declared human beings to be a combination of *Panch Tatv (Anasiri khumsa)* – five elements, i.e. the four above matter and sky. In his opinion, this statement seems incorrect to the extent that without its opposite coming into play, no element could survive on its own. He raises and explains several problems in the form of questions and answers. He describes the seven *dhats* – *Bal* and *Ruh*, physical strength, internal and external senses; then the four stages of life, each spanning 30 years of age *(sin)* – the first extending up to age 25, the second (*sini kahulat*) to age 60, then the age of *inhitat* (decreasing energy), and finally *shyukhat*, the last phase. These different periods of one's life are described in hindi as *Yakka bachcha* or *bal*; *Madhya avastha*, the third, is the age of *Piri* or *vradha avastha*. In addition, we find a detailed account of various diseases: epidemics, diseases of children, tuberculosis, inflammation, madness, forgetfulness, loss of energy, heart diseases and female diseases. Hakim Fakhrul Islam Ganguhi has made additions to the beginning and end of the book – these are prescriptions for various diseases. It is interesting to note that cures had been prescribed for certain diseases which are still considered to be incurable: chapter 54 gives a remedy for cancer *(dr dafi marzi sartan)*, and chapter 63 for alleviating stiffness in the joints *(dar dafi pukhtagi i andam)*.[4]

Amongst the works prepared under Akhbar, the son of Aurangzeb, one interesting and important book stands out: *Muntakhabul Ittaba* by Ibadullah compiled as a handbook of *materia medica* for the needy. Contrary to the usual practice of dedicating works to sultans of the time, Ibadullah, the author of *Muntakhabul Ittaba*, who compiled his work in the eleventh year of Akhbar's reign, gives the following rationale for it in his preface: 'This weak and sick person perpetually a victim of different diseases, having become wary of chasing the physicians – some of whom were somewhat considerate at times, while others did not pay any attention at all – decided to study the different diseases personally and understand the intricacies of each illness.

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It occurred to me that all the selected and the best books on each disease be thoroughly studied by me and from these reliable works necessary information be gathered and a handbook or a short treatise (*risalai mukhtasar*) be prepared so that whenever there is some physical ailment, one could go through the details and personally inspect, diagnose the disease and prescribe medicines for himself thus reducing the dependence on the physicians. Once this illness comes to an end, a person can refer back to these works Accordingly 29 *babs* were prepared to be of assistance to myself and others like me.' Both commonplace and serious diseases have been described here, from those that affect the pulse, urine, various types of fevers, to headache, mutilation of organs, 13 types of piles, skin diseases, treatment of injury, wounds caused by swords, arrows, burns, swellings, seven kinds of shivering fever *(tapi larza)*, indigestion, constipation, tuberculosis, diseases of the eye and the teeth, pregnancy and lactation. The author had given very simple prescriptions and household remedies for all these conditions. To mention a few: for *tapi diq* the surefire cure is a 21-day dose of pepper in sheep's milk; for headache, sandalwood camphor and *guli nilofar* ground into a paste and rubbed on the forehead. Similarly, for eye problems from bloodshot eyes and sores to the onset of blindness, the medicine prescribed is a compound of pepper, *sonth*, *zanjil*, *halila*, *amla*, salt, leaves of *nim* and *saras* and dried *sangibasri*, ground and mixed with milk into small balls to be used with water as a collyrium. Another prescription for blindness mixes zafran, *tutia*, *zard chob*, *sabun*, *namaki Lahori* with lemon juice for a collyrium, though some of these ingredients might appear too harsh for the delicate surface of eyes. For dental problems the medicine prescribed grinds *halila*, the pomegranate flower, into a paste with water, or the leaves of *kaner* and *sirka, to be* cooked and chewed. For earache or hearing loss, drop into the ear a cooled solution of saffron heated in *adrak* juice. The reasons given for suffering from *Diq* included: excessive sex, frequent travelling, constant nibbling of food, and indiscriminate drinking of water. Signs of recovery and death are discussed, e.g. an irregular pulse, alternately weak and fast, indicates that the patient is going to die. The 21st *bab*, dealing with conception and abortion, shows that the choice to abort was not a forbidden one.[5]

The work suffers from certain basic defects, probably due to the fact that the author was not an expert. While discussing the *jazam* and the *bars*, he records that instead of wasting time on incurable diseases, the physician should use a needle for diagnosis. If blood oozes out, the illness should be taken as incurable. The description of *majuns* is very impressive. *Majuni Iflatuni* can simultaneously cure seven diseases, i.e. paralysis, eye and teeth diseases, sexual disability, etc. *Majuni Bu Ali Sina* and *majuni Qutbi* are described as helpful in the treatment of many diseases; while *majuni Sikandari* is said to have been prepared for Alexander. Herbal medicines have been prescribed for quick conception and others for abortion. To treat a wound caused by an arrow or *tufung*, the wound must be properly washed with the cocktail liquor *(sharabi do atasha)*, then the bandage should be soaked in a mixture of the liquor and the white of a chicken's egg before being applied to the wound. The author guarantees that within a few days there will be such a recovery *(Ba karami ilahi, chand ruz fursat shawad)* that one will be left wondering whether life is everlasting.

Muhammad Raza Shirazi's work, entitled *Riazi Alamgiri dar sihat* and dedicated to Aurangzeb, is another work written as a handbook of medical aid to save the com-

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mon man from the antics of qualified physicians. Despite the emperor Akbar having tried to bring about changes in the curriculum, the medicine that formed part of the usual *madrasa* course in Central Asia was seemingly not applied here and the need for guidelines was understandable. Shirazi starts his work with suggestions for maintaining good health, i.e. moderation in eating habits, a preference for nutritious food while not totally abstaining from bad food because the body must be used to all kinds of food. The best food consists of *gushti barra*, *buzghala*, *goshala*, poultry, pure wheat, hen's eggs, fruit like grapes and figs. This book differs from earlier work in that its prescriptions have expensive ingredients such as *yaqut*, *marwarid*, *guhar*, *ashhab anbar*, *tabashir*, etc. The chapter *dar tadbiri ashkhas* deals with the four stages of human life, here given as *sini Hadasat ie namu* (growth to age 30), *sini wuquf ie shabab* (youth up to age 40); *sini kuhulat ie ba baqai quwat* (reserves of energy, up to age 60), and *sini shayukhat ie sini inhitat* (age of decay, the last phase of life). Other chapters deal with various diseases, preventive measures and cures. One chapter deals with the do's and dont's of travelling.[6] The book in total is based on solid research and the information is useful.

A general survey of the sphere of medical science, clinical practice and social norms shows that plurality was the hallmark. Seemingly, there was little difference between medical practitioners and the spiritual leaders who managed the society's routine and extraordinary medical problems. The use of spiritual powers in conjunction with herbal plants gave rise to three types of medical practitioners in traditional societies: the herbalists, the divine healers (with purported supernatural powers of diagnosis), and the witch doctors who sometimes thwarted evil deeds or exorcised evil spirits in possession of the patients (Leake, 1975: 72–5). Magical and exorcist practices were applied to getting rid of diseases. Juvaini has recorded many such events. In certain works the entire procedure for dealing with jaundice has been described, i.e. the cure through sorcery: keep a tub of water below the patient's bed, and pass a thread from it through a needle which is sewn through the fingers of the patient. This resembles the approach taken with Ögedei, son of Chingiz Khan.

Medieval sources abound for medical sciences of various kinds, but some of them have certain distinct features. Reading through the versified account of medicinal work in *Fani tibb*, one cannot help appreciating the love of artistic touches demonstrated in the presentation of even such dry and scientific subjects. It is interesting to note that Ikhlaqi Jalali provided prescriptions for the cure of diseases like *ilaji hairat*, *hasad*, *ghazab*, *baddili*, *marzi-huzn*, *jihli basit*, i.e. surprise, jealousy, envy, anger, restlessness, disease phobia, melancholia, depression, wanton pleasure and so on. The *Tibbi Vedic* compiled by Ahmad Ali includes a prognosis, diagnosis and prescriptions for all of these.[7]

Writing about Indian customs and superstitious beliefs, the mughal chronicler Sujan Rai Bhandari provides interesting information about the logic of disease. He says: 'The *Amali shagraf* is an astonishing feature. The diseases which overtake a person, and physical afflictions and ailments (such as madness and mental diseases, skin diseases, fevers, persistent diarrhoea, injuries, stones, swellings, partial blindness) are believed to result from evil deeds committed by the sufferer during a previous life. The way to get rid of such diseases is to pray for forgiveness and for ultimate relief'.[8] In the context of Central Asia, Rubruck, during his stay at the

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Mongol court in 1254, describes how 'soothsayers are sent for also when any is sicke, to use their charmes; and they tell whether it be a natural infirmitie, or by sorcerie'. He adds that 'the sorcerers also trouble the Ayre with their charms; and when the cold is so great naturally that they cannot apply any remedy, then they search out some in the camp whom they accuse that the cold comes through their means so they are put to death without delay'.

Once when a concubine fell ill, and showed no sign of imminent recovery, they mumbled their charms over a Dutch slave of hers, who then slept for three days, and the concubine recovered. Also, when the principal wife of Mangu Khan had been misled by the comments of soothsayers that her son had been 'taken away' by a dying woman, she became so enraged, because they had earlier given assurances that her son would have a long life, she decided to put to death the two grown-up children of the accused dead woman. Mangu Khan, having learnt about the fate of these children in a dream, gave the verdict that even a queen was not authorized to 'give sentence of death, without the privitie of her husband. Not only the two killers were put to death but the queen too was incarcerated for seven days and prohibited from eating. If it hadn't been for their own children, he would also have had his wife put to death' (Rubruck, 1905: 125–128). It is stated that 'the oldest Sanskrit documents dealing with medicine consist of versified spells and incantations against the demons of disease. While Babar mentions medical techniques (e.g. drip-feeding for voice loss; orthopaedic surgery for broken bones, arthritic joints and stooped postures, trepanning for head injuries, and various medicines for fevers), he simultaneously refers to his dislocated thumb for which no treatment was taken except Quranic therapy and the attempted exchange of illness from his son to himself' (Leake, 1975: 35). Such practices were common not only in Central Asia, Persia or India. During Europe's Dark Ages, pagan herbalists and witches – mostly women – used cannabis in their ointments and remedies. When illness was equated with evil, these pagans attracted a devout following for their miraculous healing lore. Cannabis was one of the many psychedelic ingredients of the legendary flying ointment used by medieval witches, which was known to induce visions. In 1593, English author George Gifford wrote a short piece titled *A Dialogue concerning witches and witch craft*, in which he mocked the witchcraft hysteria (Reverend Damuzi, 2002). Besides, Thomas Coryat (who happened to be in Turkey in 1613), reports that on 11 September of that year, an epidemic of the plague broke out in the city, and attempts to discover some 'convenient and discreet' course were evolved for its prevention. It was found that 'some thirty years since there was made an Edict for the banishing of all dogges out of the town as being a principal instrument of scattering the plague by reason of their free passing up and downe from one house to another . . . It was at last determined that the dogges should be banished and for the better performance of the Matter, Christians and Jews were to present a dogge each to the Qazi. And whereas the city did not yield dogges enough for the severall families – those of Galata bought dogges at a deere rate to transport them to Constantinople and to sell them there much deerer. Mungrels and masterless curres that before strayed up and down the city, being now worth twentie or thirtie aspers' (Coryat, 1905: 429–30). His above statement is difficult to explain because the fact of rats being the vector of the disease was well known centuries before. In India, skilful physicians

already attributed malaria to mosquitoes and plague to rats (Leake, 1975: 35) and even the Emperor Jahangir had given a detailed account of the spread of the disease. 'A kind of narrative medicine consisting of stories that heal was also thought to have a curative effect. There was *Coyote healing*, miracles in native healing, spiritual teaching on emotional healing and inner wholeness' (Reverend Damuzi, 2002).

* * *

Herbal and medicinal plants were by no means an exclusively eastern innovation. Plant remedies had been independently discovered by the Cretans, from whom they were appropriated by the Greeks, whose traditions conveyed them into the Homeric poems and then to Theophrastus until they finally moved into medieval use under the influence of Dioscorides in the first century AD. Peter Warren has given a long list of folklore medicine contained in Knossos tablets of medicinal usage: clergy, coriander, cumin, cypress, grass, dates, fennel, figs, garden cress, ginger, iris root, linseed, mint, pennyroyal, rose, sunflower (seeds), sage and sesame seeds. Archaeological finds have added: onion, garlic, poppy seed and saffron. Garlic and onion were mildly antiseptic and soothing for insect bites. Poppy seeds are a 'powerful soporific and pain relieving agent. Figs and linseeds are mildly cathartic' (Leake, 1975: 27–9). In Robert Graves there are references to the tuberous roots of monkshood containing the powerfully poisonous alkaloid aconite, a paralysing poison. It was used not only by Thessalonian witches to make their flying ointment but also by physicians in the treatment of fevers and for strengthening hearts. For every disease God had provided a remedy, and the only problem was how to find it. But some of these remedies have been promoted on the basis of imagined similarities to the effect sought after: saffron, for example, was said to be, due to its yellow colour, the best cure for jaundice; pulmonaria, with lung-like marks on its leaves, was supposed to cure lung diseases; cyclamen leaf resembles the human ear. The roots of ginseng or Mandragora, the mandrakes of Biblical lore, resembled the human body, and hence were good for it; Russians had discovered agents in it for altering blood pressure. Numerous native Indian and imported drugs have been mentioned in the ancient sources and in modern works. The works of Sruta include descriptions of 700 medicinal plants (both indigenous and imported): garlic *(Allium Sativum)* applied locally with salt for the relief of bites and stings, aphrodisiacs, antidotes like Rauwolfia (named after the European botanist who first described it) for venomous snakebites, alkaloids like reserpine and yohimbine. The most widely known drugs from time immemorial have been: Chempulli *(Calicopteris floribunda)* for worming and as a laxative; Babri *(Eclipta prostata)* a cholagogue; Punarnava *(Boerhavia defusa)* a diuretic; Kurchi *(Holarrhena antidysenterica)* and Semul *(Bombax malabaricum)* which could carry a tannin to treat dysentery, Chatim *(Alstonia scholaris)* containing an alkaloid against malaria; and Bala (*Cida cardijolia*) for treatment of paralysis and the nervous system. Numerous other drugs still to be investigated included: *Adhatoda vasica* or *bakas*, which already served as a good expectorant and useful asthma drug; *Melia azadirachta* or *neem* for relief of fever; *Saraca indica* or *asoka* for menorrhagia; *Terminica arjuna* as a cardiac tonic; *Beganum harmala* or *aspand* as an anti-asthmatic and agent for relief of fever; *Saussurca lappa* or *kut* as an aphrodisiac and heart stimu-

lant; *Herpestis monniera* or *safed chamni* for hysteria and epilepsy; and so on (Ayensu, 1983; Leake, 1975; Nath Chopra, 1933; Zimmer, 1948).

* * *

Muslims are thought to have made great progress in the sphere of pharmacology, experimenting with different herbs and drugs, and anaesthetics used in India. Ibn al Baytar (1197–1268), the renowned botanist from Andalusia, had provided an alphabetical list and description of more than 1400 medicinal plants in his valuable book *A Collection of Simple Drugs and Food*. It included formulas for preparation, dosage and purpose, though most of his ideas are said to have been borrowed from Biruni and Ibn Sina. Baghdad seems to have had 862 registered and qualified pharmacists at this time.

In China, toad skin, which is said to have hallucinatory properties, was extensively used for cardiac conditions, and ginseng for long life, as a remedy for arthritis, an aphrodisiac and a tonic. (According to Russian opinion, it relieves depression.) Different condiments were used to promote appetite (cinnamon, pepper, spices, sugar) and for their various therapeutic effects.[9] Detailed descriptions of the drugs are found in Persian sources too. Obesity as a disease had been noticed in the statuettes, in Egyptian papyri, in the ancient *Book of Internal Medicine* of the Chinese Yellow Emperor, where prevention was recommended, and later in the Chinese exercise system known as Tai Chi Chuan. Seventeenth-century Chinese sources had recommended pea-flower massage, compresses of wolf hair and skin. The *Upanishads* and *Yogic sutras* by Patanjali were offering, from 200 BC to 200 AD, ways to combat weight gain: eating a balanced diet, taking good care of the testicular tissues (organo-therapy), performing physical and breathing exercises (*pranayam*, *hatha yoga*). In 1863, William Bentinck's 21-page pamphlet recommended his own dietary experiences, later referred to as Bentinckism.[10]

Although medical practitioners were an important, highly revered and indispensable segment of medieval society, they too were exposed to the hazards of adverse public reaction and anger. On the one hand, the Hippocratic oath and the principles of medical ethics bound them and, on the other, fear of the Muhtasibs, who checked on doctors, surgeons, blood-letters and pharmacists, and hung like the sword of Damocles above them. Even the most ancient civilizations had medical ethics. Delineations of practical precepts and ethical practice are found not only in Hammurabi's code of laws, but also in the chapters on health and sickness in Egyptian literatures. Sun Ssu-miao (581–673 AD), the father of Chinese medicine, had first laid down the rules and duties of doctors in his work *The Thousand Golden Remedies,* followed by a number of works by Chang Kao (1189), Chang Lu and others. Just as it was under the Greeks, physicians were said to be 'an agent of God who received Divine Guidance from Him', and Charaka, Susruta and Bhao Prakash besides had already discussed these principles. The requisite qualifications of a good physician have been described in the eighth part of the *Charaka Samhita*. Although Avicenna's *Qanun,* at 2000 pages and a million words, has no section dealing with medical ethics, several other works contain such references. Manfred Ullmann and Abdul Hameed have provided an exhaustive list of those works in which precepts

of medical ethics have been elaborated. These include: Zakariya Al Razi's (d. 925 AD) *Kitab fil mihnat al Tabib wa tayinihit* and *Kitab al Mansuri*, Al-Tilimsani's *Tuhfatul Nazir wa Ghunyatul Dhakir* (1466 AD), Ibnul Khammar's *Maqula fi imtihan al Attiba*, Al-Tabari's *Firdausul Hikma*, Al-Majusi's *Kitabal Malki*, Ibni Habab's *Mukhtarat fil tibb* and Al-Tustari's *Jamiul Sinaa*. In the fourth chapter of his *Chahar Maqala*, Nizami Aruzi Samarqandi described in detail medical science and the obligations of physicians. Other physicians who wrote on medical ethics have been mentioned by Mohammad Shafi of Punjab; they include Abulkhair Imtihanal attiba, Abdul Aziz Alnaili al Nishapuri, Sadiq Almutattabib and Al-Marwazi. Ruhawi's *Al Adabul Tabib* 'exclusively deals with medical ethics'. As early as 931 AD, the Caliph had ordered that every doctor should have a licence and no unlicensed person should be allowed to practise medicine. Even expert and well-trained doctors were kept perpetually under strict legal regulation. The memoirs of *manshurs* included the duties and obligations binding upon practitioners, particularly the medical ethics of confidentiality (Hameed,1981; see also Tahir Waheed's *Inshai Tahir Waheed, Maktubat, Munshaat, Manshurat*, ms IOST 2089, f. 88). Despite this emphasis on medical ethics, physicians could still be used by intriguing emirs. Juvaini records that Alauddin, the 9-year-old son of Jalaluddin Mangbarni and his successor, who since his accession in 1221 had reigned for just 5 or 6 years, fell victim to the vengeance of certain unhappy emirs, who appointed a physician to do their bidding. 'Acting contrary to instructions and advice and without the Child's being ill or there being any other reason, he opened a vein and took away an excessive quantity of blood. The brain was affected, apparitions appeared in front of him and melancholia overtook him but none dared speak out till Alauddin turned into a madman, fit only to be kept in bonds and chains. Finally, he was murdered' (Juvaini, 1997). The fate of surgeons and medical practitioners was not always enviable, as the *Qazikhana* documents (*Jawami ul uliya* for instance) document how these public servants could be dragged into court and sued for their supposed or imaginary negligence. Ustad Abdurrahman Jarrah, an expert surgeon, had once used his razor recklessly and amputated a young man's virile member. The enraged father demanded compensation (*harjana*) from the surgeon. The matter had to be settled finally before the *Qazikhana*.

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Notes

1. The Translation of *Samhita* by William D. Whitney and its revision by C. R. Lanman (Cambridge, Harvard Oriental Series, vols 7–8, 1905) is a proof. Samhita was translated into English by K. K. Lal (Calcutta, Bhishagratna, 3 vols. 1907–16).
2. *TED Case Studies: The Role of Trade in Transmitting the Black Death*, http: //www.american.edu/TED/bubonic.htm
3. Hakim Bhuwa, *Ibni Khawas Khan, Madanushshafai Sikandar Shahi*, Tibbiya College Library, acc 180, ser. 76, ms 616/64, fq.
4. Darvesh Muhammad Kalim Anbabadi, *Tibbe Aurang Shahi*, Tibbiya College Library, ms 616/16 fq.
5. Ibadullah, *Muntakhabul Ittaba*, Tibbiya College Library, ms 616/23.
6. Muhammad Raza Shirazi, *Riyazi Alamgiri*, Tibbiya College Library, Aligarh, ms 616/22 fq.

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7. Ahmad Ali, *Tibbi vedic*, 616/21, Subhanullah collection, ms f.8b.
8. Sujan Rai Bhandari, *Khulasatut Tawarikh*, Abdussalam Collection, ms 318/88, f.8b.
9. Most of the writers attribute this zealous pursuit of researches in medical sciences by muslims to the varied kind of *Ahadis* giving them the inspiration. For example, the Quran is quoted: 'He who has restored life to a man shall be accounted as if he had restored life to humanity' (v. 35). The Prophet has recommended the same, that 'your body has a claim upon you and also your eyes and that cleanliness is an article of faith. Get yourself treated for God has not inflicted disease upon us without at the same time giving us the remedy.' Similarly, the Ayurveda is said to have originated from Veda, and there are stray references to health, disease and the treatment of disease in the Vedas, particularly in *Rig veda* and *Atharv veda* – the latter carrying as many as 114 hymns (Kurup, 1983: 50–1).
10. The Krentzman Obesity Newsletter, October 2000, 7: 10.

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