Chapter 2
Emergence of Medicine

The Primordial Medicine

In the beginning, every sort of knowledge must have been a complete blank. This hypothesis should also be held true in the case of medicine. Still, one possesses no trace to describe the primordial levels of this science. The Andaman islanders or the Kalahari desert bushmen who could be considered till recent days as consisting of people at the lowest stage of civilizational course also reflected traces of advanced sorcery and functioning of specialist medicine man. In all probability, medicine of these societies had ceased to retain their earliest features by the time modern ethnologists reached them. Therefore, if it could not be claimed that the institution of sorcery appeared all of a sudden, one could also not produce unquestionable account of a pre-sorcery phase of medical development. Nevertheless, on the basis of certain guess-work and through analysis of different aspects of sorcery, a portrayal may be tried to narrate the concept of illness among the primitives and the preventive, curative, and rehabilitative measures taken by them.

The conception that death and disease are due to natural causes lays beyond the bounds of popular comprehension of primitive people. Even accidents are attributed to spirits. Among Saoras of Eastern India, if a man cuts himself with axe while chopping down a tree, he is supposed to have received the injury due to the ‘insult’ caused to the spirit living in the branches. If one slipped down from a tree, it is explained as a push by Uyungsum, a spirit which is also associated with diseases (Elwin 1955: 220). In ancient literature also, dog-bites are accepted as attacks of some unidentified supernatural agency ‘Svagraha’, using the medium of a dog (Āpastamba Gṛhya Śūtra 7.18.1).

In all probability, the earliest preventive medicine consisted only of the forestalling the potential displeasure of the spirits and ancestors through gifts and through strict adherence to the moral codes and demeanours as culturally conceptualized by the community. The curative medicine of the primitives involved appeasement of the angered ancestor or spirit which was supposed to have entered the body of the sick, thus causing the anomaly. Therefore, the process of treatment employed feeding of tasteful meals or drinks to the diseased so that the agent housed in his body could be placated. This style was paralleled by another fashion. If the relatives believed that the sick had been entered into by an ancestor who had a disagreeable record and character, foulest ingredients composed of violent and nauseating elements were fed to the indisposed so that the ghost in question may leave his body out of disgust. As we would analyse it later, this primitive method under different guises continued for a fairly long period (Charaka Samhita 6.17.115, Suśruta Samhita 6.60.42) and eventually introduced the system of drug-therapy.
Another curative method of the primitives as evidenced through archaeological findings consisted of the dreadful operation of trephining (Sankalia 1970:63). It involved the making of a hole in the skull of the sick so that the ghost supposedly present in his body may come out. Traces of this practice have been discovered from the neolithic cultural site at Burzahom, Kashmir. Lack of signs of bone-tissue inflammation in the trephined skulls may suggest that the operation was always fatal (Cockerham 1986:3). Some scholars, however, argue that patients survived the operation in a few cases (Basu and Pal 1980:17). Some other students suppose that it was done only post-mortem (Campbell 1977:219). Whatever be the truth, the primitive process of trephining might be credited with the genesis of surgery.

Considering the strong community bondage among the simpler societies as reflected through comparative ethnology, it may be suggested that the rehabilitative dimension of medicine of the primitive people was quite sound and the sick was attended to with care during as well as after illness. Besides, the fact that a sick person who was capable to liberate himself from the ailing agent accredited him with a kind of medical authority and he was seen in the light of a potential guide to exercise therapeutics among the primitives. No wonder, in many a primitive society the shaman is usually a former patient. However, as Goldschmidt (1959: 198) observed, the pre-agrarian set-up could not allow any adult including the shaman freedom from the fundamental economic pursuits of the community. Still, the foundation of a full time physician's office was laid in primitive society itself.

The dominant intellectual temper today may dismiss the 'system' of the primordial medicine as a bundle of 'superstitions'. But this was the best possible method those days to approach the phenomenon of illness. It continued for a fairly extended period before the more complex method of sorcery developed. This could be possible because the primitive therapy could really do some good through what is called the placebo effect, whereby benefit is supposedly derived from any remedy in which one genuinely believes. Moreover, howsoever superstition-ridden it was, the primitive medicine represented man's earliest attempt to translate his animistic intuitions into an arranged strategy to approach the state of health and illness by situating roles of, as noted above, the drug therapy, surgery as well as the medicine-man.

As regards social implications of the primitive concepts of health and medicine, there is ample probability that these very conceptualizations produced the whole paraphernalia of the institution called religion. Having once got a firm grip, illness arouses many contradictory feelings in the mind: dread, faith, hope, despair, resentment, meekness, resignation, doubt. It makes man to think, to question, to pray, to raise his freighted eyes heavenward and create there a being to whom he can confide his anxiety. Suffering first taught humanity to fashion a god, and thus, probably, engendered the religious sentiment.
The Sorcerical Medicine

With the emergence of private property certain shifts took place in all spheres related to medicine, namely the ideology about the nature of illness, the process of diagnosis and appropriate therapy. The context of causality factor acquired a pluralistic vision, involving evil eyes, angry deities, antagonistic sorcerers, spirits, and witches. Similarly, in therapeutics, along with the role of family-elders, aid of certain specialist individuals was also sought. And though therapy remained predominantly 'magical', it involved application of diverse materials some of which contained real medicinal property.

Origin of the concept of individual ownership has been a highly vexed issue. Generally it is acknowledged that this concept originated with the shift from nomadic hunting-gathering life style to a comparative sedentarism. This transition could be possible due to ecological changes during the closing years of the pleistocene which witnessed gradual melting of the global ice-sheets. During this period, the Indo-Gangetic plains appeared over the surface from beneath the stretched arms of the Indian ocean. These ecological changes about 12 thousand years ago, and the consequent 'economic opportunism' gradually shifted the resource-strategies of the primitive populations.

This transition involved great social implications. In hunting-gathering stage, economic sources were natural and thus unowned by individuals. In changed scenario, domestication of animals and cereals became basic economic sources of a fairly large portion of population. Animal-husbandry and cultivation needed special care on the part of individuals. Thus an ownership system was to be formulated. Initially it was based on individual clans. Depending on the nature of labour needed, it was later transferred in a deductive fashion to an ownership centered on families - a system universally in vogue during pre-modern periods.

Agriculture which was emerging as a major means of production during the period was directly linked with the weather conditions and it consequently focussed attention on celestial elements. This promoted concepts regarding deities and gods. Similarly, advancement of private property as an institution must have had consolidated concept of envy and jealousy. In the context of medicine, these changes signified in the acknowledgment of evil eyes and anger of celestial deities among the agencies of illness. An outstanding outcome of the changed economic set-up was freedom achieved by a section of population from the task of arranging food on daily basis. Agriculture permitted people to take care of other activities from time to time and created ample possibility to generate and promote professional diversity and eventually birth of the sorcerer.

Magic and religion as found in ancient literature pertaining to sorcery and in the contemporary ethnology are often so inextricably intertwined that it is practically impossible for a modern student to classify their ceremonies and ritual-activities according to principles based on this distinction. Still,
in place of using the common nomenclature of 'magico-religious medicine' it appears sounder to name the concerned therapy as art of sorcery.

The rituals connected with healing were different from other kinds of rites. For example, in order to injure someone's health the normal sacrificial procedure was changed by using other fuel or by varying the substance offered (Atharva Veda Parišīṭa 70.4.5). Not only the malevolent ones, but also the curative rituals differed from regular rites. And instead of the ordinary exclamations used in sacrificing such as 'svāhā' (when offering to the gods) the magician used ominous syllables or words that were harsh in speech like 'khat, phat, jahi' (Taittirīya Samhitā 3.4.8.5; Taittirīya Āranyaka 4.27; see Gonda 1980:251).

Besides, the Vedic divinities which reflect the earliest attempts to personify religious infusions, have been pictured as performing healing only as incidental to their more important duties of directing various forces of nature. They appear as working cures in a detached and sporadic fashion rather than as a matter of devotion to the sick and suffering. In fact, while the role of the divinities in medicine conceptually remained by and large static, the craft of the sorcerers continually elaborated itself and eventually germinated the system called Ayurveda.

As indicated above, the art of sorcery began with the shift to a plural context of causative agents in conceptual understanding of the disease and with the subsequent employment of substances in its therapeutic approach to the maladies. The plurality of agent-factors led to an elaborated art to categorize illness. The art of employing substances which was initially meant to expel the ghost allegedly housed in the body of the sick in question, gradually refined itself and in due course could introduce, through trial and error, the idea of drugs. At the stage of sorcery, however, the therapist as well as the sick believed that it was not the application of the substances but the magical formula or the performance of the ritual that accompanied them was the real curative agent. It was during the later ages only that accumulated experience and wisdom transferred the focus to substances themselves.

Major sources of therapeutic sorcery are the Vedic texts and modern notes on ethnography. In the former category, passages pertaining to the phase when efficacy of herbs and similar medicinal substances was conceptually accepted outnumber passages which relate to the phase of therapy dominated by the use of spells and rituals. For the present discussion I have preferred to depend only on such references of spells and rituals. Similarly, from modern ethnography also, I have picked up only those notes which involve spells and rituals employed for therapeutic purposes.

The system of sorcery

The paradigm of sorcerism and its functions is a complex phenomenon. Various literary references in ancient texts as well as comparative ethnology provide an infinite variety of information
on sorcery through time and space in Indian history. At times, it appears impossible to order and to systematize this vast body of data in the context of different types of illness recognized, agents of disease allegedly involved and therapy or therapist employed to prevent or cure sickness. It is only by permitting certain scope of disagreement that a tentative reduction of sorcerism to few principles could be attempted. These fundamentals could be elaborated as classified below.

The sick and the community

For primitive human beings disease threatened not only the well-being of sufferers and their fellows but also the integrity of the community. Illness was a disruptive event that imposed high economic, social and psychological costs on them. Therefore, it was of primary importance for the members of every primitive group to maintain their health, and to restore to health those who fall ill. Members of community helped out spontaneously and cheerfully performed works of such fellows who fell sick at the time of ploughing, sowing, or harvesting. Upto recently among Travancore tribals, when an individual fell sick, the headman at once called for and two drumming and humming ceremonies were held. The whole night was spent by the tribals in dancing and drumming and prayers were offered for the recovery of the sick (Iyer 1937:33).

Concept of diseases and the causative agents

In its approach to disease, the phase of sorcery marked, as referred to above, a pluralistic vision involving the role of celestial beings, supernatural agencies like witches, sorcerers, demons and ghosts. Reasons which supposedly stimulated these agencies to act as well as the methodology they employed to afflict bodily anomaly differed. While the celestial deities allegedly exercised their capability only to punish through sickness someone violating the normal code of conduct, the supernatural agencies allegedly harmed individuals out of envy (witches), on count of being commissioned as such (sorcerers) and due to their quite haphazard and irresponsible hostility (ghosts, demons, etc.). The deities which were majestic and all powerful presumably employed mediums to produce sickness (Rg Veda 6.74.4). Other supernatural agencies like demons and ghosts “possessed” the individual himself (Atharva Veda 8.6.2; Kauśika Sūtra 26.32, Bower Mss. 11.0; Taisho Tripitaka p.315; Suśruta Samhitā 6.10.17). As a result of the above conceptualization of illness in the phase of sorcery, normally one did not endeavour to treat disease, but to pray it out of existence; to repent that the ailment might get alleviated; to barter it away to deities and other supernatural agents by vows, offerings, and ceremonies. For just as the sickness was sent by them, so, too, it could be taken away by the same powers.

The celestial agents of disease also included personalities like Takman, Śitalā, and Manasa, which could be identified as semi-gods. Takman has been noticed in ancient literature (Atharva Veda 6.20.3 “I salute thee, O Takman”), but Manasa and Śitala appear only in later texts such as the
Skanda Purāṇa (5.81.42). In all probability they continued as tribal deities connected with serpent bites (Manasā) and small-pox (Sitalā) until being incorporated into symmetrical brahmanism.

Manasā seems to have been vastly popular in eastern India where her cobra-hooded stone images were ensnired at a number of brahmanical temples during 11th and 12th centuries AD. Popularity of Sitala, on the other hand, seems to be more wide-spread since until recently, along with her south Indian counterpart Mariyammā (Iyer 1937:44), she was practically worshipped all over India (Neog 1951:72; Bhownmick 1963: 151; Sher 1966:323; Rizvi 1991:63). Images of Sitala are, however, not discovered and she has been defined variously. The Lodhas, a Bengal tribe, believe that she is ever 32 and is capable to traverse any distance within a moment. Clad in a white sari with red borders, she rides an elephant (Bhowmick 1963:151).

The bhūtas and pretas are held as the most noted agents of disease among the tribals at sorcery level all over the country (Elwin 1955: 224; Hasan 1972 :150; Parthasarthy 1988:80; Sahu 1991:51; Bharathi 1993:344). Ancient texts are familiar with both of these terms. In fact, bhūta-vidyā (i.e. demonology) has been included as one of the eight branches of classical Ayurveda (Charaka Samhitā 1.30.26; Suśruta Samhitā 1.1.17). In this category of agents may be included the rākṣhasa (demon) (Rg Veda 10.162.1), pīśācha (monster) (Atharva Veda 5.29.5), and asura (genie) (Suśruta Samhitā 6.60.35).

Ancient texts also refer to the instrumentality of deceased relatives, the pitrs to produce disease (Charaka Samhitā 2.7.12; Suśruta Samhitā 6.37.18). Such ancestors are invariably accepted as disease agents among the tribals. It appears that before the classical Ayurveda sophisticated itself gradually, there was a universal agreement so far as the concept of disease and its agents were concerned. This agreement is further traceable through ancient accounts of the function of the sorcerer and witch. Disease has been recognized in the Atharva Veda as a consequence of magic (5.31.2) and also of ritualistic performance by an enemy (7.35.2). Even the celebrated yajñas could produce illness to an antagonistic individual (ib. 10.1.11). At one place, the text (19.34.2) refers to 53 magical agencies (kṛtyās) meant to harm the opponents.

Incidentally, however, one fails to discover details regarding the sorcerers themselves in the Atharva Vedic passages involving narrative on their performance. On the basis of modern ethnography it may be suggested that the sorcerer or the witch came notably from among neighbours and acquaintances. The basic difference between sorcerer and witch was probably the fact that the former generally functioned on hire and on impersonal considerations while the later acted for personal envy and jealousy. Secondly, while sorcery was virtually an all-male profession (Atharva Veda 5.31.12), witchcraft was dominated by females. From the fact that the chief agents and possessors of this art were mostly women (ib. 4.17.3), one has the prevalence of the female name of witch and its synonym in most Indian languages.
Another feature of sorcery is use of curious substances supposedly capable to produce diseases. This feature had also had a universal clientele before being restricted to tribal pockets as of now. For example, one may trust the supposition that the Mauryan text *Arthaśāstra* definitely quoted age-old traditions while suggesting that:

(a) The smoke caused by burning the mixture of the powders of a kind of partridge, a lizard among others could destroy the eyes and cause madness (14.1.19) and,

(b) If someone, having fasted for four nights and offered animal sacrifice on the fourteenth day of the dark half of month, gets a few bolt-like pieces prepared from the bone of a man put to the gallows could cause consumption to anyone (14.3.71).

A major constituent of sorcery is the system of personifying different diseases (*Atharva Veda* 1.25.3; *Mahābhārata* 3.230.26). This fashion was probably associated with the older concepts since the nomenclature exhibited in classical texts for these agencies employs such non-Sanskritic terms as Hridooh (*Atharva Veda* 1.25.3), Amile, Kimile, Vayuchare (*Arthaśāstra* 14.3.36). The personification demonstrated the first attempts to classify diseases according to their nature and characteristics. The inter-relationship between different diseases on the basis of their symptoms has also been noted down in the *Atharva Veda* (5.22.12) where fever, cough and cold are reported to be siblings.

Ancient Indian myths related to medicine refer to a significant tale about how the disease of fever was created out of the anger of lord Siva who was denied rightful hospitality in a function organized by his father-in-law Daksha (*Mahābhārata* 11.283.1; *Charaka Samhitā* 2.2.9; *Suśruta Samhitā* 6.39.323). The medical text of Charaka further records how the disease 'gulma' was generated through the stampede in this very episode (2.8.12). These myths may relate to more ancient ages as legend of the 'birth of fever' echoes in the *Atharva Veda* (5.22.5) as well.

**The preventive sorcery**

The preventive medicine of sorcery was naturally oriented to the dominant concept of disease as described above. In popular perception, the most effective check on attack of illness was strict adherence to moral codes and conducts. It was believed that one who continued to respect moral codes and social taboos was able to neutralize the hostility of not only the deities and sorcerers but also animals and snakes (Elwin 1939:376; *Jātakas* 203.2.145; *Suśruta Samhitā* 6.37.18; *Charaka Samhitā* 6.19.3; *Rg Veda* 1.24.9). Along with the maintenance of moral codes, man prayed urgently and passionately that the gods should exercise their functions for protection and long life (*Rg Veda* 1.34.6; 1.114.1; 7.50.2; 10.39.6 etc.). Each deity addressed was extolled in extravagant terms as the highest and most powerful irrespective of all others.
In the context of other unseen beings like the Pisacha and Bhuta, the primitive societies preferred more positive preventions because it was feared that such supernatural agencies acted spontaneously and in an inexplicably hostile manner. The fear of these spirits of evil oppressed them and overshadowed their respect to and confidence in the gods, whom they regarded as indifferent to the calamites brought upon them by these "non-gods". Therefore, the primitive people similar to the case of modern tribals, sought to propitiate, appease and gain the favour of these supernatural agencies through regular offerings of animals, food, honey, milk, fruits and flowers under the direction of the shaman.

Other popular preventive practices included use of fetish and amulet (Kauśika Sūtra 26.21). A fetish is an object that is the seat of magic charged with the mystic power. Amulets are one of the chief means of preventive medicine of the level of sorcery, specially directed to expel the witchcraft related agencies. Usually they consist of sharp and cutting objects, teeth of animals, claws of eagles, nails of tigers, small knives, all objects that have the faculty of causing wounds. It is believed that the amulet could be able to cut into pieces the witchcraft generated agents operated against the person holding them. A fetish could stop diseases magically (Mahābhārata 10.15.29). Amulets were specially directed to ward off witchcraft (Atharva Veda 19.36.1) and were used particularly at such vulnerable stage of life as childhood (Charaka Samhitā 4.8.94; Buddha Charita 2.21). In the case of delivery also, many fetish like articles were kept by the side of the related lady (Mahābhārata 13.68.6). Besides the use of fetish and amulets, many rituals were employed to check ailments during pregnancy (Rg Veda 10.162.1; Jātakas 510.4.491). One of the rituals was at a very early stage, incorporated into brahmanical system with the name of Jātaka-samskar (Pāṇini Grhya Sūtra 1.15.4). Some aspects of the last-rites as practised by the primitives were also related to preventive medicine. They believed that the soul which had left the body might not reconcile to its fate and could attempt an entry into body of a relative, thus producing ailment. This fear resulted in the constitution of death-ritual that tended to make it difficult for the deceased to identify and return to his relatives who made themselves unrecognizable by clean-shaving and other means. This practice is still in vogue everywhere in India.

The diagnostic sorcery

A diversified concept of the causal agents of disease during the phase of sorcery generated an increasing stress on diagnostics. The primary role of the medicine-man of this phase was to identify the deity, ghost, or other agent that caused the illness, and then to determine how to placate or overcome it. Cure was supposed to follow a correct diagnosis as a simple matter of routine and it was believed to have little effect until the causal agent has been discovered and offerings made accordingly. Thus, there was and has been great stress on diagnosis in every kind of sorcerical medicine.
The process of diagnosis in earliest sorcery probably operated outside the body of the sick in question. Later it was also oriented towards bodily manifestations of the indisposed. The Vedic texts which otherwise form the basis of the narrative of sorcery in ancient India keep mute over either of these types of diagnosis. But the later kind of diagnostics is clearly recorded in the text of Susruta which on the basis of certain physical demonstrations determines whether a given case of sickness was 'possession' of Skanda (6.27.7), Skandapsmāra (6.27.9), Šakuni (6.27.10), Revati (6.27.11) and Putanā (6.27.12) or the like. The Charaka text (6.9.18) also justifies the faith in demoniacal possession by paralleling it with entry of one's shadow into mirrors without any observable transfer of images. The fashion of distributing illness to a plethora of celestial agencies is equalled by modern sorcerical methods more than often. For instance, the Baigas of Madhya Pradesh have a body of twenty one celestial sisters each specializing in different diseases (Elwin 1939:364). The Lodhas of Bengal have categorized the small pox and allied diseases into six forms represented through six sisters of the goddess Šitalā (Bhowmick 1963:151). Similarly the north Indian hillmen Jaunsaris classify diseases by assigning different physical manifestation to different evil spirits like Jimbhoot, Chaad Rooian and others (Rizvi 1991:66).

However, before the concept of disease-agencies could sharpen enough to appeal to the uncultivated wisdom of the tribals, another method of diagnosis was applied. It was processed outside the body of the sick. Ancient literature is generally silent over this narrative. But an idea of this diagnosis based on 'divination' could be formed through modern ethnography. The process of 'divination' involves certain household items such as wooden-seat (Chapekar 1960:92), wicked lamp (ib. 34). egg and wares (Gurdon 1907:11), and winnowing pan (Elwin 1939:87). Sometimes the sick himself performed the task. For example, he would balance a bow carefully on his fingers and invoke spirits which could have 'overtaken' him. It was believed that howsoever balanced the bow might be, it could swing to and fro when the name of the spirit in question was spoken.

More regularly 'divination' is performed by the medicine-man helped by his pet disciples. The disciple would place a small earthen lamp in a net-work of string and hold it up before the master. The master repeats spells after spells. When the spell referring to the real culprit or cause of disease is chanted, the lamp swings with great vigour. If it goes out it means that a witch has interfered with the rite. This kind of divination has been noted among Baigas of Madhya Pradesh (Elwin 1939:380). Further idea of divination as practised through time and space could be obtained from Santhal ethnography. When a person among them falls ill, the Santhal medicine-man divines with oil and sal (Shorea robusta) leaves by putting five marks on them. Each part of the leaf represents separate causes of illness. After a little processing and enchanting of spells the oil allegedly 'shows' up in required part of the leave thus marked. And thus the medicine-man could determine the real cause of the illness (Ray 1975:13).
There is another kind of divination where the causing agent speaks directly, through the mouth of either the sick himself or of someone who had passed into a state of dissociation. During this process of divination, the medicine-man involved is liable to fall into a sort of frenzy - he throws himself on the ground, his limbs twitches spasmodically, his heads waging to and fro desperately. It is believed that the agent is riding upon him and then he reveals secrets that have not been discovered by the ordinary methods of the medicine-man. The present student himself is witness to two such divination processes, one in Bihar (1991) and the other in Maharashtra (1993). An account in the 4th century prose Śīlpadikāram (p.78) from the deep south also suggests that this method of divination has remained popular all over India through ages.

The sorcerical method did not allow disintegration of the aggregate known as ‘illness’ and thus hampered the decomposition of the spiritual personality of the sick by restricting the ailment from entire spread of the body to one or more bodily organs. And thus, it is discovered that sorcerical therapy attempts to cure the entire body of the sick (Atharva Veda 9.8.2).

**The sorcerical therapeutics**

References in ancient literature as well as the narratives of modern tribals suggest that the most popular therapeutics in the phase of sorcery included propitiation through offerings, employment of numerous spells and rites and administration of nauseating substances. In some cases, the celebrated yajñaś which originally meant to offer substances to the fire-god Agni, were also approached for curative ends. For example, the Atharva Veda describes yajñaś meant to drive away genie (6.32.1) and demons (7.11.1) supposedly occupying the body of the sick. Such sacrificial measures also echo in the Ṛg Veda (10.161.1).

Certain methods of outsmarting the agency of the disease in the shape of a ghost have also been prescribed in ancient texts. For example, a householder suggests, in a Jātaka story, to his ailing son to cause a hole in the wall and escape through it thus outwitting the spirit supposedly guarding the gate of the house (474.4.200). Among modern tribals also, certain practices employing use of windows and other irregular passages by the ailing persons have been noticed. In Jātaka stories, another method of cure has been described through certain ‘Acts of Truth’ (444.4.19). These ‘acts’ are not specified but they were connected with moral codes and conducts, violation of which has always been recognized by simple societies, as implicating bodily anomalies.

In one of the Mahābhārata passages (11.283.1), perusal of the story of ‘fever’ has been attributed with the power to relieve one suffering from this very ailment. This method signifies continuation, in transformed shape, of the practice of worshipping the disease personified.

However, the three therapeutic approaches referred to above were evidently most uncommon. More popular therapeutics in the realm of sorcery included and still includes method justifying named
by Frazer (1926:vol.1.52) as 'contact' magic and the 'homeopathic magic'. Contact magic is based on the view that a contact or former union between two elements creates a relationship in which a manipulation of one of the elements, which are now spatially separated, produces a visible effect upon the other. In societies where contact magic is practised, the possession of part of a fingernail, hair, or even a placenta, for example, brings with it the power to influence the fate of the person from which the object came. Homeopathic magic, in contrast, rests on the principle that like corresponds to like. It is believed that harm inflicted upon the image of a person results in harm to that person himself, despite the fact that the two might be separated by great distances. It is also believed that eating a walnut, for example, can be beneficial to the brain since the two objects have similar appearances. Homeopathic magic has been described by the ancient Buddhist text the Taisho Tripitaka. According to its prescription, when possessed by demons, one should burn a cat skull, combine the ashes with pure clay, and then fashion an image of the evil demon. He should then place this before an icon of the Buddhist deity Avalokitesvara, take an iron knife and cut the image of the demon into 108 pieces while reciting the spell 108 times (Taisho Tripitaka p.315). Another kind of homeopathic magic is referred to in the Rg Veda. It was believed that the yellowness (i.e. jaundice) of a sick person could be transferred to yellow colour of a pigeon if prayer was offered properly (Rg Veda 1.50.12).

Amulets have been generally used as preventive measures as indicated above. But they were also utilized, at least irregularly for curative purposes. For instance, the Atharva Veda (10.3.3) prescribes an amulet to cure one from possession of demons. There is another prescription of similar nature in the Kauśika Sūtra (26.21).

The most regular therapeutics from the phase of sorcery, however, was the use of prescribed spells and offering of substances as 'bali'. Both of these methods were a distinct development from the level of primitive medicine and through their emphasis on diagnosis, they greatly accelerated the pace of medicine. One finds in the Suśruta Samhitā (6.31.9; 6.60.31) as well as in modern tribal therapeutics (Elwin 1969:364; Bharathi 1993:346) elaborate rules to indicate appropriate offerings to diverse cases of illness. It was stressed that therapy had little effect until the real causal agent was discovered and standardized offerings were made accordingly.

Though one does discover certain exceptions, the spells (mantras) were normally used in a pattern based on the causal agent of illness in question. Analysis of the meaning of different therapeutic mantras in Vedic texts suggests different types of spells in use for different types of malevolent agencies. If the causal agent chanced to be such grand figures as Varuna, the passages utilized as mantra factually meant prayers for a relief from ailment (Atharva Veda 5.11.1). Similarly, if the agent in question would be a semi-godly individual, mantras of request were recited (ib.1.25.3; Kauśika Sūtra 27.1). But if the disease in question was believed to be caused by witchcraft passages used as mantras symbolized only wishful thinking (Atharva Veda 4.17.3). If the agency of disease...
happened to be demons like ‘Grahi’, a different sort of spells were used. The meaning of such mantras stressed claim on part of the sorcerer that he had commanded the disease-demon to quit the body of sick (Rg Veda 10.161.1; Atharva Veda 8.6.2; 8.6.23). Mantras of similar connotation were also used in cases of ailments due to malevolent sorcery (Atharva Veda 5.31.1) and biting of serpent (ib. 5.13.1). These spells seem to have held a wide-spread popularity through time and space in Indian history as they are also discovered as being engaged among the modern tribals (Elwin 1969:392).

In fact, the pattern of Vedic sorcery reflects itself in the modern tribal therapeutics. For example, the following Atharva Veda spells parallel to passages used by present day tribal medicine-men for similar ends:

**Atharva Veda spell:**

I drive away
Those demons who devour
Raw pieces of flesh and
Eat foetus. (8.6.23)

**Baiga spell (Madhya Pradesh):**

A broken shoe!
The nine iron needles!
With these I bind spirits
I bind the bhut the pretz
Immortal nail!
Immortal charm! (Elwin 1939:392)

**Dudhi spell (Uttar Pradesh):**

I would control water
And land
And would bind the
One quarter and one hand
Of the earth.
This would control the boundary,
The exterior, and the
Interior.
Look, have a notice
How it binds the witches
And sorcerers of the village
And also
Their ghosts. (Yadava 1994:271)

Atharva Veda spell:

To those very enemies themselves
Who
Has administered malevolent
Sorcery through this
Utensil and through this rude piece of flesh
I send back
Their evil agencies. (5.31.1)

Baiga spells:

Another girl, another boy
A little girl, a little boy.
Away, away, O horse,
I will make you fly away.
Go back whence you came.
Do not break any fence on the way.
O sorcery, go back whence you came. (Elwin 1939:388)

In simplest cases, the medicine-man operated merely by word of mouth only but in most spells the spoken words accompanied rituals. These rituals are detailed in the later Vedic text, the Kauśika Sūtra (particularly its 27th chapter) and at stray places (Āpastamba Grhya Sutra 7.18.1). The Kauśika Sūtra (27.1) prescribes that a certain spell 'I salute Langelas' should be used after the ailing individual is brought to a deserted house and is made to bathe with water containing pieces of husk from a thatched roof. Similarly, the Āpastamba Grhya Sutra (7.18.1) suggests to employ the spell 'kukkūrasūkkūra' by father of a sick child after he lifts and places him over a board of chess in the assembly of gamblers, and sprinkles over him curd treated in salt.

More light on these processes could be focussed through modern tribal practices. The above Baiga spell involving 'broken shoe and iron needles' was recited along with the process as noted under:

"The medicine-man offers fire and incense, and a coconut. He treats the coconut as if it were a living creature, holds it between his hands and rubs its 'nose' in a pile of rice. After a time he picks
up a little rice and pulling back some of the hair of the coconut, slips the rice beneath it as if he were feeding it. Then he pulls off two or three tufts of hair from the back of the coconut's 'neck', and smashes it on a stone."

'When matters are very serious, the medicine-man drives a nail into the ground, just as if he were stopping an earthquake or repairing the magic boundaries of the village ... then he uses the mantra' (Elwin 1939: 392).

Another account which could be profitably quoted in this connection appears in the ethnographic work of Hasan (1972:150) who studied the Kols of Patha. He writes, 'the medicine-man prepares some ash by burning cloth. On the ground, he draws some lines and signs, with a curved sickle. Standing between the lines and amidst the signs, he recites spells, keeping the ashes in his palm. At a prescribed stage in his recitation, he disperses the ash from his palm in such a manner that the ash particles fall on the body of sick or possessed person. During the process a cock or a goat is slaughtered as well.'

In ancient literature one does not discover any ritual embodying threats and exorcism of very daring character. However, since such harsh treatment has been universally an essential feature of sorcery, it was not unlikely that it was also in vogue in ancient India. Of the methodology involved in such treatments, one can trace some ideas from the narrative of Bharathi (1993:346) who witnessed the following healing procedure among south Indian fishing communities:

"The 'possessed' individual is kept inside a circle. Drums are beaten continuously, the medicine man singing loudly. The possessed begins to dance as well as sway his head vigorously. If he does not do so then he is beaten with whip, rattan or neem leaves. If this move is also unfruitful, scratching smelted iron rods on body and placing fire on hands are attempted. When the possessed individual starts crying it is supposed to indicate that the spirit/demon which had 'occupied' him has started speaking. Then questions like 'Who are you? What do you want? Why you have possessed the person related? follow. The sick person answers them and the required substance is subsequently offered."

In simpler societies, the medicine-man performed a multi-dimensional role. He is consulted in the cases of family distress (Man 1867:141) and theft (Iyer 1937: 93) and also in cases involving a missing person or animal (Chapekar 1960: 94). Details on the socio-economic status of the medicine-men as well as on system of their training would be described in other sections of the work. However, it may be noted here that the phase of sorcery recorded a significant advance from the level of primitive medicine also in the sense that it was mostly conducted through specialist hands (Rg Veda 1.50.12; 10.60.11; 10.161.1; Atharva Veda 1.12.3).

**Significance of sorcerical medicine**
It is argued that certain types of human voices that are used in particular ways in sorcery produce significant physiological changes. The nervous system is very much responsive to the sonic treatment (Sarkar 1993: 340). Accomplishment of the medicine of sorcery level is also traced through the kind of 'ethnoanatomy' exhibited in ethnological narratives as well as in certain petroglyphs (Burkitt 1963: Fig. 23). In ancient literature also the concern of simpler societies is noted regarding anatomical features (Rg Veda 1.162.18; Kathopaniṣad 2.3.16). However, since sorcery involves medical concepts stressing 'individuality' of the sick and it does not prescribe to locating ailment in one or more limbs of the body, these developments in the field of anatomy probably remained unemployed medically. Ratio of the cases successfully treated has been very low in contemporary sorcery (Man 1867: 182) and the same might have been the case in the days ancient. This was the fundamental reason which impaired the clientele of sorcery once the art of diagnosis as well as therapeutics was syncretised and sophisticated. Nevertheless, before an advanced level of medicine could develop in pockets of Indian populations, the sorcerical medicine commanded a universal clientele. Sanskrit passages demonstrating self-healing sorcery (Rg Veda 1.50.12; Atharva Veda 5.29.6; Yajurveda 12.90) leave no room to doubt that a comparatively advanced community of the authors of the Vedas was also infatuated with the appeal of sorcerism.

The wide-spread approval of sorcery in ancient ages is also testified by certain references in the 3rd century BC Jātaka stories which note that brahmans and kshatriyas who represented the highest category of Indian social hierarchy also learnt magic charms (185.2.1000). These stories also make it plain that the sorcerical methods were accepted by wealthy classes as well (178.2.79). Even after more rational medicine became available, these methods remained acceptable particularly in difficult cases related to gynaecology (Mahābhārata 13.68.6) and pediatrics (Charaka Samhita 4.8.94; Sūrūta Samhitā 6.27).

But the very fact that sorcery in later stages was restricted to only delicate cases suggests that as a system of medicine sorcery commanded universal clientele only till a more advanced and more rational medicine emerged. Sorcery symbolized a circumstance of helplessness. It was resorted to only when no options were available.

The appearance of the next level of medicine, however, also marked a phase when the early communism and a kind of universal tribalism split into population groups varying each other in terms of the economic strategies. One group advanced in complex agrarian production-relations while the other population groups continued to maintain their small-scale agriculture combined with animal husbandry and horticulture. As we would discuss it in the following pages, the major growth of medicine was achieved only by and in the class-composed society. Thus, the larger community which opted to retain their class-opposed social structure in ancient India apparently continued to be appreciative of the sorcerical methods.
The economic contextualization of medical development forced within the class-composed society a considerable chunk of individuals, particularly those among economically weaker sections, to continue to seek therapy from sorcerical methods. Thus, both within and without the class based social structure, sorcery survived to command a large clientele through times and spaces in Indian history. And thus may be explained the prevalence among others the cult of small-pox goddesses through out India down to our own generation.

The details of dynamics operating behind the emergence of post nay extra-sorcery phase of medicine would be discussed in the next section. It is, however, important to note that in contemporary Indian society no individual belonging to the brahman caste is found involved in the profession (if not among clientele) of sorcery. This is sharply in contrast to the Vedic age practice when brahmans evidently opted for the same as professionals. However, this may not be taken to mean that the lower caste individuals opted for the profession of sorcery once the brahmans discarded it. Since the art of sorcery predates the conceptualization of the varga based social hierarchy, it is more probable that the sorcerers of the present century are descendants of those individuals who willy-nilly refused to change their professional status. History of medicine most clearly manifests that an individual or community does not modernize or progress simply by dint of residence within social complex experimenting newer methods of science and technology - its economic dimensions are more important.

A Note on Harappan Culture

The first urbanization connected with the so-named Harappan culture has remained a perennial source of discomfort to students of history. The riddle of its emergence as well as its decay is yet to be solved (Thapar 1995:8; Ratanagar 1995:1). We do not know for certain how Indusians could be able to build well-planned cities, how they developed their script and what relations they had with the society described in the Vedic texts. The only information we possess with a degree of certainty in this connection is that the major Harappan centres flourished prior to 1,500 BC. As the archaeological evidences point to the 6th century BC as time of the second urbanization in India, historians are too puzzled to come to any conclusions regarding the long hiatus of one thousand years between the two urbanizations. The ceaseless chain of archaeological discoveries supposedly related to Indusian centres (Ratnagar 1995) as well as to this gap (Thapar 1995) produces more questions than answers to the related problem.

The authors of early Vedic passages seem to pertain to a simple pastoral, egalitarian society with agriculture and animal husbandry as their economic base. Under common logistics this social formation appears predating Indusian urban centres. But this simplification is shattered by the reality that the Rg Vedic society used horse while the Indus archaeology does not trace any familiarity to this animal, at least from within mature Harappan phases. The argument to predate Vedic culture again
stands disqualified from certain inexplicit references in the related texts to iron which evidently remained unknown to the Indus centres. The dichotomy between the Vedic and Indus civilizations is manifest also on the count that the latter had evidently developed a script while the former allegedly utilized only verbal language.

The issue could finally be settled only after the decipherment of the Indus script is made. Nevertheless, it is plain now that there is no archaeological or other evidence to indicate that the so-called Aryan invasion was coincident with and contributory to the decline of Harappan civilization (Kennedy 1984:99; Thapar 1995:88). Discovery of extensive non-ceramic occupations associated with early domesticates at Mehargarh, dated to pre-6,000 BC (Shaffer 1984:32) and several other pre-Harappan cultural traces around the region provide chronological depth and make this hypothesis plausible that the domestication of plants and animals and the rise of civilization in the Indus valley was an indigenous cultural process.

From the perspectives of medical history the first urbanization forms part of the chronology dominated by sorcery. Normally urban atmosphere employs rationality in terms of science and philosophy. The standard of hygiene as reflected through covered drainage and the great bath at Mohenjodaro also seems to be quite impressive. However, large quantity of amulets discovered from Harappan sites and a possibility of the employment of coral stag and rhinoceros horn for therapeutic purposes (Sankalia 1970:63) indicates that the Indusians were not able to advance from level of sorcerical and priest-ridden medicine.

Analyzing cases of the centres of first urbanization all over the world including Indusian ones, it may be argued that an urban situation does not essentially employ a superstition-free society and accomplishment of a rational science. The first urbanizations in the world were fundamentally based on acute exploitation of agrarian surplus and concentration of the means of production into microscopic minorities. As such they could only generate a standard of architectural science which did not necessarily require a large clientele base. In all probabilities, such branches of science as medicine did not scale higher attainments in Harappan centres as well since the middle class it had and which could have helped promote medical science did not continue for long.

The phase of curers

Through the long process of trial and error, experiments and failure, the historical development of medicine reached by 10th century BC a stage when approaching disease was no longer regarded only as a 'deal' i.e. abhichāra but was recognized as an art of cure, i.e. 'bheṣaj'. Texts pertaining to the post-12th century BC historical developments do not only refer to the term 'bheṣaj' (Atharva Veda 5.29.1) meaning 'art of healing' and medicinal substances (ib. 2.3.4; 4.17.1; 6.21.1; 6.44.2) but also the term 'bhiṣaj' to mean a 'healer' (ib. 2.9.3; 7.55.1). The shift from 'abhichāra' to 'bheṣaj' stage is also
reflected through employment of certain empirical elements in diagnostics and therapeutics of the period in question.

Two levels of medicine are traced in the earliest literature of India. One stressing on the "possession of super-natural elements" (ib. 5.29.5) and the other trying to identify the agent of disease in rational terms (ib. 1.12.3.), one engaging sorcerical methods to expel the disease from all over the body without stressing its locale (ib. 9.8.2) and the other emphasizing the localized position of the ailment (ib. 1.23.4; 5.4.10; 5.11.1 and 6.14.1, etc.), one cajoling the deities to award freedom from illness (Rg Veda 1.34.6) and the other demonstrating confidence to treat ailment through medicinal herbs (Atharva Veda 4.37.3). Thus, in conceptual understanding of disease, diagnostics and therapeutics, two distinct approaches parallel each other in the society reflected through the Vedic texts. For a long period, both of these levels seem to have continued together before the system of curers could come to dominate the art of sorcery, probably by the 9th century BC. This date has been suggested by dint of the reality that while the term abhichāraka symbolizing the level of sorcery has been referred to only thrice (Atharva Veda 5.31.2; 10.1.9; 10.3.2) in the Vedic corpus mostly composed after the said date, the term bhēṣaj symbolizing the art of cure has been referred to in it so frequently.

The phase of curers as demonstrable through Vedic passages and the comparative ethnology could not free itself from the use of mantras or spells. Administration of medicinal substances as narrated in the Vedic texts accompanied various spells and rituals. The distinct feature about the engagement of substances in the therapeutics of the phase of curers was that it did also involve certain materials of recognized medicinal value. Besides, even when the role of super-natural elements was not derecognized they were no longer credited with the recovery.

In this sense, the phase of curers was a period of transition when (a) materia medica was separated from the haphazard whole of 'substances' and (b) the therapeutics was gradually freed from the web of rituals to be employed independently. Attainment of this freedom was accompanied by further advance in conceptualization of disease, diagnostics and prognostics and in a wholesome way it prepared way for the advent of the next 'phase of doctors' in history of medicine.

**Historical settings of the phase of curers**

Conventional pattern of historiography pertaining to the phase of curers which shaded through the chronology between 1200 and 400 BC, does not involve India as an integrated whole. They seize and shift attention of the student from one region to another. The student is left wandering from archaeology of Harappa to the literary world of Rg Vedic Punjab, from megalithic traces of Mysore to the later Vedic references of Bihar plains. The focus on regional perspectives is so sharp that one may really conclude, while fingerling through chapters on the Indus Valley civilization or Rg Vedic society, that apart from certain regions in the north-west, the rest of the contemporary India remained under
populational and cultural vacuum. Instead of addressing the question of inter-relations between different cultural pockets discovered across the sub-continent from related chronology, the historiography of this period has remained lop-sided to the issues like diffusions and conquests which obscure and badly handicap investigation into India's indigenous cultural processes.

It is welcome that the recent perspectives of early Indian history demonstrate a shift from this trend. Now it is plainly accepted that there is no evidence to support a large-scale conquest by any particular culture during the related period in India. And there is now increased stress on exploring linguistic and other indigenous cultural sources in the remote past of the country. It is hoped that through this legitimate recognition of the existence of indigenous population and their contribution to the genesis and growth of Indian culture, one may gradually solve many a riddle connected with archaeological findings and literary references relating to the period between 1500-500 BC.

In brief, it may be highlighted that during the one thousand years preceding 500 BC the whole of India remained peopled by diverse populations holding different cultures. They included the upholders of the Vedic rituals and the more numerous simple communities at the level of chalcolithic and iron-using megalithic cultures. Subsequently, this period witnessed somewhere slow and somewhere express process of the amalgamation of divergent population groups into larger societies. There emerged two major systems in this process: one centred around the mid-Gangetic valley and the other concentrated around the Coromandal coast. By the 4th century BC both these systems had developed hierarchy-based social orders and had acquired languages systematized by an ordered grammar. In many cases they offered better life-opportunities to the tribals which tended to join these cultures. Naturally, those who joined them first did not permit an equal status to the late-comers. Besides, many communities who dwelt around mines of copper, iron, silver and gold and thus mastered their use first also found it profitable to join the greater social settlements as coppersmith, blacksmith and the like. Now when racial basis of 'castification' is becoming increasingly questionable it may be argued that probably these two factors most notably contributed to the caste hierarchy of the Gangetic as well as Tamil societies. By the end of the 4th century BC the two social systems of Gangetic valley and the Coromandal coast had entered into regular correspondence. However, the long distance between them and the difficult transportation those days did not allow regular movements between the two sectors. Thus there could not emerge a strong typological and linguistic similarity among populations concerned.

The class-contradiction among these societies might have increased following attempts by the same to expand into far-flung regions to acquire resource-base, and thus at least in limited cases, encountering resistance by the tribals settled there. Besides, agriculture which emerged as the basis of larger societies, implies some control over land and forms of irrigation. Traces of the cultivation of wet rice from the Gangetic plain during the period may suggest not only function of labour but also
a social distance between those who laboured and those who controlled them (Sharma 1983). Cases of artificial irrigation as well as their maintenance would also have required labour (Thapar 1984).

Between these two major social streams noted above, there flourished numerous other cultures. They are traceable through certain archaeological remains such as those discovered near Inamgaon (Luckacs & Walimbe 1986:4), Jorwe (Dhavalikar 1973:138) and Malawa (ref. to Ratnagar 1995:16). Existence of such 'little traditions' in Gangetic valley, climatically negative from archaeological point, is attested through inclusion of certain unfamiliar words into the Vedic corpus as well as the extensive mythology of the same. The process of the formation of larger settlements was not always smooth. The imperial Mauryas are reported to have faced the revolts of certain Ātavika (literally, forest dwellers) community. The urban centres with their less severe caste connotations probably accelerated this pace of 'detribalization' and gave it a new dimension. From a level of small and isolated breeding populations, the simpler communities tended to find themselves moving into the socially segmented configuration of urban life and mixing with the longer settled inhabitants. Some scholars opine that this dynamic rather than mass migration and invasions of nomadic and warlike people better account for the polytypism in south Asia (Kennedy 1984:103).

Thus, between the 1500 to 400 BC the sub-continent underwent several significant changes. The larger settlements developed during the period meant greater cultural assimilation - a mechanism of medical growth since it accumulated diverse concepts and experiences. This chronology was most dynamic from the point of linguistic development as well. It must have also added to the promotion of medicine as it has been argued that rationality and logic in linguistic development and literacy is paralleled by the growth in science and medicine.

Consequently, nominal difference between Rg Vedic pastoral society and, say, the Santhals of Bihar developed by 5th century BC big gaps in social, economic and cultural textures. The former society enlarged itself considerably and attained a complex social formation involving numerous professionals' crafts, institutions, and finally, urban centres. On the other hand, the later social set­ups more or less continued their animal husbandry and horticulture-based economy employing class­less compositions.

**Salient features of the phase of curers**

As noted above the phase of curers marked (a) engagement of certain materials of recognized medicinal value and (b) transition when materia medica was freed from web of rituals to be employed independently.

The portions of the Rg Veda and the Atharva Veda which pertain to the phase of curers are replete with passages recognizing efficacy and importance of the bhesaj i.e. healing substances. One of the Rg Vedic passages (1.34.6) refers to the prayer to the twin divine physicians Āśvins to provide
with the \textit{bheṣaj}. It demonstrates that a section of \textit{Ṛg Veda}c society felt that only through employment of medicinal substances one’s health could be restored even when gods themselves were involved in the treatment.

At another place in the same text (6.74.2), a particular herb (Somarudra) has been praised to relieve one of the ‘arrest of Varuṇa’. The \textit{Atharva Veda} (4.9.9; 19.39.1) refers to the herbs capable to expel witch-craft related anomalies. It means that even when conceptually there was no change in causal agent, efficacy of drugs was recognized. The increasing recognition of medicinal substances in the later Vedic society is most clearly evident through an independent herb canto in the final passages of the \textit{Ṛg Veda} (10.97.1-23).

A number of herbs and other materials referred to in the Vedic passages were later incorporated into the standardized prescriptions of the classical Ayurveda. It could be shown through a small chart given under:

<table>
<thead>
<tr>
<th>Name of the herb</th>
<th>Passages related to the phase of curers</th>
<th>Ref. in the classical Ayurvedic texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indra Vāruṇi</td>
<td>AV. 1.23.1</td>
<td>SS. 6.11.15</td>
</tr>
<tr>
<td>Prsni Parnī</td>
<td>AV. 2.25.1</td>
<td>CS. 6.9.43</td>
</tr>
<tr>
<td>Kuśṭa</td>
<td>AV. 5.4.6</td>
<td>CS. 1.3.9</td>
</tr>
<tr>
<td>Šankha Puṣpi</td>
<td>KS. 10.16</td>
<td>SS. 6.52.43</td>
</tr>
<tr>
<td>Pippalikā</td>
<td>AV. 6.109.3</td>
<td>CS. 6.11.47; SS. 6.52.25</td>
</tr>
<tr>
<td>Haridṛa (Naktajāta)</td>
<td>AV. 1.23.1</td>
<td>CS. 1.3.13; SS. 6.52.19</td>
</tr>
<tr>
<td>Lakṣa</td>
<td>AV. 5.5.2</td>
<td>CS. 6.9.67; SS. 4.9.10</td>
</tr>
<tr>
<td>Paḷāśa</td>
<td>AV. 6.15.1</td>
<td>CS. 6.12.63</td>
</tr>
<tr>
<td>Śami</td>
<td>AV. 6.27.2</td>
<td>CS. 1.27.157</td>
</tr>
<tr>
<td>Guggalu</td>
<td>AV. 19.38.1</td>
<td>CS. 6.17.79</td>
</tr>
</tbody>
</table>

(AV.=Atharva Veda, CS.=Charaka Samhita, KS.=Kausika Sutra and SS.=Susruta Samhita)

The gradual perfection of therapeutic approach in the phase of curers is reflected through the later Vedic literature. The \textit{Āpastamba Dharma Sūtra} (2.29.6) datable to the middle of the phase of curers suggests one to discover facts through experiment (as against faith) in the cases of ambiguity. Attempts were made to connect diseases with different limbs like head (\textit{Atharva Veda} 5.4.10) or heart (ib 6.14.1). It may be recalled that earlier the individual body as a whole was believed to be ailing. Besides, there were also attempts to classify diseases on the basis of the humour of the body. At two places in the \textit{Atharva Veda} (1.12.3; 6.109.3) anomalies have been referred to as generated through
disorder in body humours. The Ayurvedic theory to utilize poison itself to cure poison related cases (Charaka Samhitā 6.23.49) has its origin in the Atharva Veda (5.13.4) formula to counter venom through the same.

In addition, independent chapters on medicine were first composed during the phase of curers. Whatever empirical level it demonstrates, the Kauśika Sūtra chapter on Bhaiṣajyāṇi (4) is to be credited as the first book on medicine. Traditionally it is believed that the Kauśika Sūtra formed a part of the Atharva Veda dealing with its applied aspect (Bloomfield 1889: Introduction). Thus, it was not without reasons that authors of the classical Ayurvedic texts Charaka Samhitā (1.30.18) and the Suśruta Samhitā (1.1.6) accepted their treatises as an extension of the Atharva poetry.

However, while taking note of the theoretical contribution of the phase of curers to the classical Ayurveda, it must be recorded that the literary sources of this phase do not deal with surgery. In the entire Vedic corpus there are only two references which may associate with this dimension of medicine. One of these passages refers to the fixation of metal leg in a case of accidented amputation (Ṛg Veda 1.116.15). The second passage (Atharva Veda 6.138.4) prescribes severing of limbs as punishment for adultery. Both of these may relate to certain hypothetical situations instead of actual practices. The chapter on medicine in the Kausika Sūtra is silent over the issue of surgery. Nevertheless, the term <alya (basically meaning 'piercing') used for surgery in classical Ayurveda has been employed in one of the above passages (Ṛg Veda 1.116.15). In all probability, the art of bheṣaj i.e. cure, for a considerable period to come included surgery as well. The earliest notice of the practical difference between the two crafts is discovered in a later text, the Ṛṣṭamīha Dharma Sūtra (1.19.14) which refers to the 'physician and surgeon'.

The advancement in theory and practice of medicine during the phase of curers was a result of a trans-cultural collaboration between diverse population-settlements which were spread all over the sub-continent as narrated above and evidently contained certain empirical elements as well. These elements are traceable in the ethnomedical profiles of the tribals. For example, the pregnant women are advised to conceal themselves inside cottages during the eclipse by the Santhal medicine men (Archer 1974:32) - a scientifically valid prevention. Besides, a number of herbs and medicinally beneficial substances are noticed in the tribal pharmacopoeia (Iyer 1937:72; Rizwi 1991:74; Sahu 1991:47; Bharathi 1993: 346; Maiti 1993:389). Most notable among such items is 'neem'- so useful a substance from the medical point of view. Sorcerers of Tamil Nadu sway fresh neem leaves through the body of the sick to expel the ghost supposedly occupying his body (Bharathi 1993:346). Birth ceremony of a number of tribes prescribes washing of the new-born with boiled water treated with neem-leaves (Jadhava 1992:23; Archer 1974:33).
The multi-cultural context of the medicine of this phase is most dearly manifest from the case of healing deities Aśvins and Dhanvantarī. The function of healing pertained to a number of deities who are mentioned in the Vedic hymns as physicians, but only the twin Aśvin-brothers and Dhanvantarī have been esteemed as divine-physicians in the classical texts of Ayurveda as well as other literary works. An exploration into the mythological development of these celestial figures indicates how the growth of ancient Indian classical medicine was contributed to by a multiplicity of cultural stocks.

Dhanvantarī is not mentioned in the Vedas and the earliest reference to him appears in the Kauśika Sūtra (74.6). In the epics (Rāmāyana 1.45.31; Mahābhārata 1.18.38) he is shown to have risen out of the sea as the result of the churning of the cosmic milk-ocean holding in his hands a staff and a bowl of ‘āmṛta’ (ambrosia). References to him in the Jātakas (510.4.496) and in an epigraphic find from Mauryan site at Patna (Museum Guide 1971:31) testify his popularity in 3rd-4th century BC. Our conclusion of his aboriginal connection is based partly on his absence in the Vedas and partly on the fact that he suffered repeated degradation. From an independent divinity he became an incarnation of god Viṣṇu (Bhāgavata Purāṇa 1.3; 2.7) and finally, an earthly king and leach who was mortal (Viṣṇu Purāṇa 4.8). According to a Punjabi legend Dhanvantarī died of a snake-bite (Crooke 1968:196).

The belonging of Aśvins to the aboriginal Indian antiquity is equally certain. Not only they appear a lone instance of celestial twins in the Vedic pantheon, their parentage is also most puzzling. They are said to be sons of none other than the cosmic egg itself (Mahābhārata 1.1.34). At one place the sage Kāśyapa and his wife Aditi are said to be their parents (Rāmāyana 3.14.14). Other references suggest that they were born out of the ears of Viṣṇu (ib. 6.105.7) or Brahmā (Vāyu Purāṇa 65.57). The most popular version of their birth also underlines their animistic background. It relates that ‘Understanding’ Samjña was married to ‘Eternal-law’ (Dharma) whose visible form is the sun. Unable to stand before the brightness of her husband she began to practise austerities. Eternal-law taking the shape of a horse, searched for ‘Understanding’ and found her and so were the twins born (Mahābhārata 1.66.35; Bhāgavata Purāṇa 6.6.40; Viṣṇu Purāṇa 3.2.7; Agni Purāṇa 273.4). Because their mother had the form of a mare, these twins were called ‘the mare’s boys’ (Aśvin Kumaras). Their non-Brahmanical identity may also be supported by the reference in the Satapatha Brāhmaṇa (4.1.5.8) where they struggle to gain equality with other gods. They are supposed to be the husbands of Sarasvati (Yajurveda 19.38), and fathers of Nakula and Sahadeva, the Pandava brothers (Mahābhārata 1.63.117). (It is not just a coincidence that Nakula is seen as a veteran horse-doctor in the epic: 4.12.7). These twins have great love for each other as was the case between famous brothers Rama and Laksmana (Rāmāyana 2.8.20). They are very rarely mentioned separately. The Mahābhārata (1.3.57) tells that one was Nāsatya, ‘The Truth’, and the other Dasra, ‘Destroyer’. 
Comparison of the young Buddha with them (Buddha Charitam 7.7) and the reference to their temple in the Arthaśāstra (2.4.17) attest that the twins enjoyed considerable popularity and esteem.

The next level of medicine developed during 'the phase of doctors' was the result of structural changes in Indian society after the middle of the first millennium BC. However, many a feature of the 'phase of curers' sustained profound popularity among common masses in India throughout the successive pre-modern ages who continued to rely mainly on home-remedies and local herbs Sarkar (1983:337; Godān 1935:8; 13; 27; 239; 310).