



Review Article

Medical geography in *Charaka Samhita*

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Abstract

Charaka Samhita is the oldest and the most authentic treatise on Ayurveda and is the ancient medical science of India. Apart from giving information on medical conditions and their treatment; it also gives valuable information on geographical, social, and economic conditions of India. This article is an attempt to explore geographical conditions of the ancient India, its geographical position in present India and its medical significance.

Key words: Ayurveda, *Charaka Samhita*, Desha, geography, medical geography

Introduction

Desha is one of the factors which have to be assessed in ascertaining the *Hetu* (etiological factors) and also in deciding the treatment. Medical geography which is gaining significance in contemporary medicine has its origin from Hippocrates. However, *Charaka Samhita* which was written centuries before Hippocrates elaborately speaks about medical geography. Though the text gives a vast outline of geography in terms of *Jangala*, *Aanoopa*, and *Sadharana*; it also mentions about various places of the then India. Though attempts were made in past to compile and interpret the geographical aspects of *Charaka Samhita*,^[1] this article attempts to analyze it from the perspective of medical geography.

Jangala Desha is predominant in *Akasha Mahabhoota*, and has vegetation that includes trees like *Kadara* (*Acacia polycantha* Willd.), *Khadira* (*Acacia catechu* L.), *Asana* (*Bridella retusa* Spreng.), *Ashwakarna* (*Dipterocarpus turbinatus* Gaertn.), *Dhava* (*Anogeissus latifolia* [Roxb. ex DC.] Wall. ex Guill. and Perr), *Tinisha* (*Ougeinia dalbergiodes* Linn), *Shallakki* (*Boswellia serrata* Triana and Planch), *Saala* (*Shorea robusta* Roth), *Badari* (*Ziziphus mauritiana* Lam.), *Tinduka* (*Diospyros melanoxylon* Roxb), *Ashwatha* (*Ficus religiosa* L.), *Vata* (*Ficus bengalensis* L.), *Amalaki* (*Phyllanthus emblica* L.), *Shami* (*Prosopis cineraria* [L.] Druce), *Kakubha* (*Terminalia arjuna* [Roxb.] Wight and Arn.), *Shimshapa* (*Dalbergia sissoo* Roxb.) and birds include *Lava*, *Tittira*, *Chakora*, etc. The people here are generally strong. *Aanoopa* has a rich vegetation of trees like *Hintala* (*Phoenix paludosa* Roxb.), *Tamaala* (*Garcinia Morella* Gaertn), *Narikela* (*Cocos nucifera* L.), *Kadali* (*Musa paradisiaca* L.), and various angiosperms. It is rich in water bodies

like lakes and ponds and birds include *Hamsa*, *Chakravaka*, *Balaaka*, *Nandimukha*, *Pundareeka*, *Kadamba*, *Bhringaraja*, and *Kokila*. The people here enjoy the cool breeze and are delicate with *Vatakapha* dominance. *Sadharana* is the admixture of both the above.^[2]

Historical Background

The presently available *Charaka Samhita* mentions Punarvasu Atreya, Charaka, and Dridhabala. Punarvasu Atreya is believed to have preached Ayurveda to his student Agnivesha, who composed the text which Charaka redacted and Dridhabala completed.

The period of Punarvasu Atreya is considered to be 1000 BC.^[3] The royal physician of king Kanishka was Charaka. Hence, the period of Charaka may be taken as second century BC.^[4] The period of Dridhabala is taken as 400 AD.^[5]

Review of Literature

The *Deshas* mentioned in the treatise are classified under various headings. The descriptions are as follows.

The places of expounding of chapters

The chapter of *Janapadodhwamsa Vimana Adhyaya* (chapter on epidemics) was expounded on the banks of river Ganga, in the city *Kampilya*, located in the province of *Panchala*^[6] whereas the chapters on treatment of *Raktapitta* (bleeding disorders) in the city of *Panchaganga*,^[7] *Udara* (ascitis),^[8] and *Visarpa* (herpes)^[9] in the mountains of *Kailasa*. *Atreya Bhadrakapyeeya Adhyaya* was discussed in the beautiful region of *Chaitraratha*.^[10] The chapter on treatment of *Yonivyapath* (gynecological disorders)^[11] and *Bastisootriya*^[12] were expounded in the Himalaya.

Drugs indicating the regions of their origin

The nomenclature of drugs is sometimes done based on the

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name of the place where it is found in abundance. Some of the examples are:

- *Magadhi* (*Piper longum* L.)^[13] - derived from *Magadha*
- *Kampillaka* (*Mallotus philippensis* [Lam.] Muell. Arg.)^[14] - derived from *Kampilya*
- *Vatsaka* (*Holarrhena antidysenterica* [Roth.] DC.)^[15] - derived from *Vatsa*
- *Yavanika* (*Trachyspermum ammi* Sprague)^[16] - derived from *Yavana*
- *Ashmantaka* (*Bauhinia racemosa* Lam.)^[17] - derived from *Ashmaka*
- *Badara* (*Zizuphus mauritiana* Lam)^[18] - derived from *Vadari*
- *Kashmarya* (*Myrica nagi* Thunb.)^[19] - derived from *Kashmir*
- *Sourashtri* (alum)^[20] - derived from *Saurashtra*
- *Kalingaka* (*Albizia lebbek* [L.] Benth)^[21] - derived from *Kalinga*.

Drugs popular in respective regions

Chakrapani, the commentator of *Charaka Samhita* mentions certain drugs as popular in specific places. *Peelu* (*Salvadora persica* L.)^[22] *Abhishuka* (*Pistacia vera* L.)^[23] *Aaruka* (*Prunus domestica* L.), *Nikochaka* (*Alangium lamarckii* L.)^[24] *Aakshoda* (*Juglans regia* L.), *Vatama* (*Prunus amygdalus* Batsch.)^[25] *Munjaataka* (*Eulophia campestris* Rechb.)^[26] *Pichuka Mani*,^[27] *Bhavaya* (*Dillenia indica* L.)^[28] and *Lelitaka* (*Amalasar Gandhaka*)^[29] are popular in *Uttarapatha* while *Kanchana Gairika*^[30] and *Vaartaka*^[31] are popular in *Dakshina Desha*. *Amlika* (*Tamarindus indicus* L.)^[32] and *Paravata*^[31] are popular in *Kamaroopa* whereas *Aaruka* (*Prunus domestica* L.)^[31] and the animal *Shwadamshttra*^[33] in *Kartikayapura*. *Tanka*^[31] and the animal *Sharabha* (eight-legged deer)^[33] are said to be famous in *Kashmira* and *Kumkuma*^[34] in *Bahlika*. *Magadha* was famous for *Maha Shali*^[35] and *Priyala* (*Buchanania latifolia* Roxb.)^[31] *Himalaya* is considered as the habitat of *Brahmasuvarchala*, *Aindri* and other divine plants^[36] and of the animal *Rama* (*Himalayan buckbeak*).^[35]

Drugs having different names in different regions

Shakunahruta was famous as *Vaka* in *Shravasti* and *Avanti*, but in *Magadha* it was called as *Pashaka*. It was taken by swans to *Uttarakuru*.^[35] The rice, *Shwetashali* was called as *Pundarika Shali* in *Magadha*.^[37] *Yava* was considered as *Sampishta* in *Gandhara* and in rest of the country as *Yavachipita*.^[38] *Shivira* was considered as *Siddhaka* in *Teerabhukta* region of *Videha*.^[39] *Kulmasha* was prepared by steaming the *Yavapishta* in rest of the country, but in *Pariyatra* region, it was prepared by steaming the *Mudga* and *Masoor*.^[30]

Places in relation to physicians

The text mentions about the conduct of symposiums and the presence of delegates from various places like *Kankayana*, the physician from *Bahlika*,^[40] and *Kashipati Vamaka*, the king of *Varanasi*.^[41]

Context of *Satmya*

Different regions have different food habits. The text mentions few regions of India habituated with unique food practices. People who live in *Bahlika*, *Pahlava*, *Cheena*, *Shoolika*, *Yavana*, *Shaka* were *Satmya* to *Mamsa* (meat), *Godhuma* (wheat), *Madhvika*, *Shastra*, and *Vaishvanara* (strong to undergo surgeries

and *Agnikarma*) while people of *Prachya* to *Matsya* (fish). Those living in *Sindhu Desha* were habituated to milk and people of *Ashmaka* and *Avantika* to oily and sour food. The people of *Dakshina Desha* had *Peya Satmya* whereas those of *Uttara* and *Pashchima* had *Mantha Satmya*. Residents of *Madhya Desha* were habituated to barley, wheat and milk products.^[42]

Regions indicating the place of authors

Punarvasu Atreya hailed from the region on the banks of river *Chandrabhaga*,^[43] whereas the *Panchanadapura* was the native of *Dridhabala*.^[44] The commentator *Chakrapani* belonged to *Gouda Desha*.^[45]

Context of *Lavana*

Different types of salts are mentioned in the treatise depending on its place of procurement.

- *Sauvarchala* - obtained from the region of *Sauvira*
- *Saindhava* - obtained from the banks of river *Sindhu*
- *Paamshuja* - obtained from *Poorva Samudra*
- *Samudra* - from *Dakshina Samudra*^[46]
- *Romaka* - procured from the banks of *Ruma* river.^[47]

Context of *Atisevana*

Residents of *Prachya* and *Cheena* take more of *Kshara* (alkaline food) and are susceptible to blindness, impotency, immature greying of hairs, and baldness whereas those of *Bahlika*, *Saurashtrika*, *Saindhava*, and *Sauvira* consume more of *Lavana* (salty food) and are prone to immature greying of hairs, alopecia, and baldness.^[48]

Context of posology

Two systems of measurements are considered viz. *Kalinga* and *Magadha*. *Magadha* is considered superior to *Kalinga*.^[49]

Context of *Arishtas*

Seeing a person of *Andhra* or *Dravida Desha* is considered as bad omen.^[50]

Rivers mentioned in *Charaka Samhita*

The following rivers are mentioned in various contexts in *Charaka Samhita* *Ganga*,^[51] *Sindhu*,^[52] *Chandrabhaga*,^[42] and *Ruma*.^[46]

Mountains mentioned in *Charaka Samhita*

- *Meru* and *Himalaya* are mentioned as an example to illustrate *Prithaktwa*.^[53]
- *Punarvasu Atreya* is compared to *Meru* Mountain of knowledge.^[54]
- *Himalaya* is the most referred mountains in the book. The first symposium of sages on diseases and the need to learn *Ayurveda* took place near *Himalayas*.^[55] It is considered as the abode of medicinal plants^[56] and the best place to collect divine medicines.^[57] The fruits such as grapes and pomegranate are said to be sweet in *Himalaya* and those grown elsewhere are sour.^[58]
- While describing about qualities of water from different water sources, *Charaka* mentions different mountain ranges and the quality of water from the rivers originating. The rivers of *Himalayas* are good for health; those originating from *Malaya* are similar to the divine nectar. The rivers flowing to the western sea are clear and conducive to health while those reaching eastern sea

are heavy to digest. Those originating from *Vindhya*, *Sahya*, and *Pariyatra* cause headache, heart diseases, skin disorders, and *Shleepada*.^[59]

- The chapter on *Udara Chikitsa* was expounded on mount *Kailasa*.^[7]

Miscellaneous

Pataliputra mentioned as an example for *Deshantara Gamana*.^[51]

The Places in the Present Day India

Uttarapatha

Initially the term *Uttarapatha* referred to the northern high road, the main trade route that followed along river Ganges, crossed the Indo-Gangetic watershed, and ran through the Punjab to *Takshashila* (*Gandhara*) and further to *Zariaspa* or *Balkh* (Bactria) in central Asia. Later *Uttarapatha* was the name lent to the vast expanse of the region which the northern high road traversed. It included the northern India, from *Anga* in the east to *Gandhara* in the northwest, from Himalaya in the north to *Vindhya* in the south. The *Uttarapatha* division probably included the territories of greater Punjab, *Sindhu*, *Souvira*, Afghanistan, Kashmir, Bactria, and parts of central Asia.^[60]

Vadari/Sauvira

It comprises of the whole of southern Rajputana. The size of province was 1000 miles in circuit. Boundaries are Ajmer and Ranthambore to the north, Loni and Chambal to the east and to the north, and Malwa frontier to the south.^[61]

Madhyadesha

Bauddhayana Dharmasutra mentions *Madhyadesha* as *Aryavarta* and defines it as the territory lying to the east of *Adarshana* (*Vinashana* where *Saraswati* lost herself in the sands near Kurukshetra, Haryana) to the west of *Kalakavana* (probably Allahabad) to the south of *Himavay* and north of *Pariyatra* (western Vindhya with Aravalli range).^[62]

Bahlika

The Iron pillar of Delhi inscription by King Chandra (4 CE), make a mention of Bahlikas as people living on the west side of the Indus river (*Sindhu*). After crossing the seven mouths of the Indus, King Chandra is stated to have defeated the Bahlikas.^[63]

Sindhu Desha

Sindhu was divided into four parts: Upper (with districts Gandhava, Kalian, Shikarpur and Larkana, west from Indus; and Sabzalkot and Khairpur east from Indus), middle (a small area: Basically modern Seewan, northern parts of Haidarabad, and Umakot), lower (a delta area from Haidarabad to the sea) and Kachh (around the ancient holy city of Ketesar with its famous Siva temple).^[64]

Dakshinapatha is the region of peninsular India lying to the south of the Vindhya.^[65] *Shakas* extend from Pushkalavati on the west to *Takshashila* on the east on both sides of Indus.^[66] *Uttarakuru* lay to the north-west of Sinkiang province of China and parts of the Tian Shan.^[67] *Yavanas* extended between Hindu kush and the Indus.^[68] Kashmir was between Indus on the north to the salt range in the south, from Indus on the west to Ravi on the east.^[69] *Saurashtra*

was the 667 miles in circuit, touched river *Mahi* on the west, that is, it comprises of whole of peninsular Gujarat from lesser Ran of Kutch to *Khambay*.^[70] *Videha* was Northern Bihar.^[71] *Karthikeyapura* is the present Tamil Nadu. *Gouda* is modern Bengal.^[72] *Panchanadapura* is greater Punjab. *Kamaroopa* includes modern Assam together with Kusa-Vihara and Bhutan.^[73] *Panchala* is modern Badaun, Farrukhabad, and the adjoining districts of Uttar Pradesh.^[74] *Kalinga* was 833 miles in circuit, united to the west by Andhra, and to the south by Dhanakakata, between Godavari and Indravati rivers.^[75] *Gandhara* is the present Peshawar district of Pakistan.^[76] *Chandrabhaga* is identified with river *Chenab*.^[77] *Avanti* include Malwa, Nimar, and part of Madhya Pradesh.^[66] *Ashmaka* lay on the banks of river Godavari between the rivers Godavari and Manjira. It corresponds to the districts Nizamabad and parts of Adilabad, Nanded, and Yavatmal in Andhra Pradesh and Maharashtra.^[78] *Vatsa* was located on the banks of river *Jamuna*. Its capital *Kausambhi* was located near modern Allahabad.^[66] *Pahlavas* ruled between Afghanistan, Punjab, and *Sindh*.^[79] *Sravasti* is to the north of the present city of *Ayodhya* between *Akaona* and *Balrampur*.^[80] *Magadha* was 833 miles in circuit, bounded by Ganges on the north, the district of Banaras on the west, *Mongir* on the east and *Singhbhum* on the south.^[81] *Shoolika* is identified with *Kashgar* area of China [Figure 1].^[82]

Discussion

Health geography is the application of geographical information, perspectives, and methods to the study of health, disease, and health care. The study of health geography has been influenced by (re) positioning of medical geography within the field of social geography due a shift from a medical model to a social model in healthcare, which advocates for the redefinition of health and health care away from prevention and treatment of illness only to one of promoting well-being in general.

Health geographers are concerned with the prevalence of different diseases along a range of scales from the local to global, and inspect the natural world, in all of its complexity, for correlations between diseases and locations. This situates



Figure 1: Map of India indicating the regions mentioned in *Charaka Samhita*

health geography alongside other geographical sub-disciplines that trace human-environment relations.

Health geographers use modern spatial analysis tools to map the diffusion of various diseases, as individuals spread them among themselves, and across wider spaces as they migrate. Health geographers also consider all types of spaces as presenting health risks, from natural disasters, to interpersonal violence, stress, and other potential dangers.^[83]

Some of the diseases are absent completely in few countries like Rabies in Australia and New Zealand.^[84] Malaria is prevalent in tropical and subtropical regions.^[85]

Concept of *Jangala*, *Aanoopa* and *Sadharana*

Indian climate varies from region to region. Based on the amount of annual rainfall, annual range of temperature, different climatic regions are identified in the country. Most acceptable classification is given by the famous geographer, Trewartha [Table 1].^[86]

Though on a broader account this regional classification can be made for *Jaangala*, *Aanoopa*, and *Sadharana*, the climate changes can be seen for every 100 mile.

Desha in relation to expounding the chapters

Two types of learning systems were followed in ancient India namely *Shalina* and *Charika*. In *Shalina* system of education, a *Guru* would establish a *Gurukula*/study center and students who were eager to learn would go to *Gurukula* and learn. In *Charika* system of education, the *Guru* would wander with his students to different places and impart knowledge.^[87] The latter was followed in *Charaka Samhita* where Punarvasu Atreya was travelling to *Kampilya*, *Panchaganga*, Himalaya, and so on with his students. Meanwhile he was expounding the disease, which was more prevalent in that region to his students, that is, *Raktapitta* in *Panchaganga*, *Udara* in *Kailasa*, *Janapadodhwamsa* in *Kailasa*, and so on.

Panchaganga is the present area of Punjab region of India and Pakistan. It has very hot climate and hence people here are more prone to bleeding disorders.

The physicians coming from different places to attend symposiums and the native regions of the authors indicate the different centers of learning.

Drugs with respect to *Desha*

The medicinal plants indigenous to the place will be more potent and hence to make a more potent medicine, the drug of the native region should be collected. Chakrapani opines the drugs native to Himalaya if collected from other regions will have low potency.^[88] *Kshara* obtained from *Jangala Desha* is said to be more effective than that of *Aanoopa Desha*.^[89] Researcher shown that the same species of *Withania somnifera* collected from two different regions of Kashmir and Nagori have different genotypes.^[90]

National Afforestation Scheme launched under Ministry of Environment and Forests, Government of India, promotes the growth of medicinal plants. Identifying medicinal trees indigenous to the region through Ayurveda would be beneficial both in enhancing the forest cover and in the therapeutic utility. The significance of the same drug having different names in different regions could not be reasoned out.

Rivers in relation to *Desha*

East flowing rivers are preferred over the west flowing rivers. The major east flowing rivers are Ganga, Yamuna and Krishna whereas the major west flowing rivers are Narmada and Tapti. The water of Ganga is an exception and is considered to be conducive to health.

The water of river Yamuna is considered to be *Guru*, *Vatala* and *Ruksha* whereas that of Krishna is *Ruksha*, *Vataraktaprapokana*, *Kinchitlaghu*, and *Swadhu*. The water of river Narmada is *Atiswachcha*, *Prashasta*, *Laghu*, *Lekhana*, and cures all diseases.^[91]

Salt in relation to *Desha*

Saindhava is understood to be rock salt, white cubic crystals of superior quality. The name suggests that it comes from *Sindh*. The Kachh area of *Sindh* which is around Karachi is either low and wetland or a salt desert. Rocksalt mines of Khewra, Pakistan, and that in Jhelum district are two beds of rock-salt of 550 ft. thickness, which are being mined. Thus, the possibility of *Saindhava* originating in the border areas of *Sindh* can be established. This can be supported by linguistics: *Sindh* was originally a land of the river Indus (in Sanskrit *Sind*), not necessarily the small area of a province *Sindh*. The other possibility, wherein *Sindh*, a salt of high quality could have been found and/or prepared, is from the salty deposits around the numerous hot springs located in *Sindh*.

Samudra is the sun-dried sea salt, now representing 75% of the total salt consumption in India. The evaporation of the sea water is done in large and numerous shallow mud basins on the seashore; the salt fields sometimes extend many kilometers inland.

Sauvarchala-The name *Sauvarchala* relates with *Saurashtra*. It is, however, very difficult from the scanty reports available to make any conclusions about the composition (or preparation) of this salt variety. The area between Kachh and Gujarat changed considerably due to the rise of the sea-bed and the subsequent evaporation of the water left behind. The extracts from certain types of salty soil could yield only such a type of salt, whose components are those of the sea salt, but in different proportions.

Romaka is understood as the salt collected from river Ruma, a tributary of Indus. The name of *Romaka* people is said to be mentioned 3 times in *Ganapatha Purana* and from *Brhatsamhita*. One can conclude that the habitat of this people was at the mouth of Indus; it was probably a Roman colony somewhere near the ancient port of Barbarium. Thus, *Romaka* will be closely related to *Saindhava Lavana*, linguistically and geographically.

Pamsuja-Chakrapani specifically says the origin of *Pamsuja* is from *Purva Samudra*, that is, from the Eastern Sea. He being a Bengali may have got some information about the manufacture of *Pamsuja* salt from the sea on the eastern coast, that is, in the Bay of Bengal. This would make it a variety of *Samudra*, obtained however not from the sea water, but from the water of lowland coastal areas, where the sea water partially seeps in. This salt could also be extracted from the earth of those areas, unfit for agriculture, and for a considerable time in the past flooded with sea water. Due to selective absorption

Table 1: Correlation between Ayurvedic and contemporary concepts of geography

Ayurveda	Contemporary view	Rainfall (cm)	Temperature	Region
<i>Aanoopa Desha</i>	Tropical rainforest	>200	18.2°C-29°C	Western coastal region and parts of northeastern India
	Tropical savanna	76-152	Above 18.2°C	Peninsular plateau except for the semi arid zone of the east sahyadris
<i>Jangala Desha</i>	Tropical semiarid steppe	38.1-72.2	20°C-28.8°C in December. 32.8°C in May	Rain shadow belt from central Maharashtra to Tamil Nadu
	Tropical desert climate	<30.5	Above 34.5°C	Rajasthan and a part of Rann of Kutch
<i>Sadharana Desha</i>	Tropical and subtropical steppe	30.5-63.5	12°C-35°C	Punjab to Kutch

of soil particles in respect to ions of the sea water, as well as the action of certain halophytic bacteria, the chemical composition of *Pamsuja* would not be identical with that of *Samudra*, because certain components were immobilized/absorbed/transformed.^[92]

Mensuration system

Magadha system of posology is considered superior to *Kalinga* as *Magadha* was a bigger and more powerful province than the province of *Kalinga*.

Desha in relation to Satmya

The concept of *Satmya* plays an important role in advising *Pathya* and *Apathya*.

Desha in relation to Arishta

The regions *Andhra* and *Dravida* lay in the southern part of the country. It is generally believed that southern direction is the abode of *Yama*, the God of death and hence considered as inauspicious.

Miscellaneous

Pataliputra was the capital of *Magadha*, the most powerful kingdom of that period. Hence, its example for *Deshantara Gati* is very apt.

Certain words in *Charaka Samhita* like *Dambari*^[93] and so on are not from classical Sanskrit. It is colloquial usage and may have geographical influence.

Scope and Limitations

Reconstructing the geography of *Charaka Samhita* is a herculean task as the frequent wars between the kings of different provinces forced to redraw the boundaries. However, this is an attempt to relive the days of *Charaka Samhita* and an approximate estimation of the location of different regions of the then India is made.

Although the text mentions the different provinces and geographical locators, the concept of *Jangala*, *Aanoopa* and *Sadharana* is ultimate. In the same province, few regions may have the characteristics of *Jangala*, and few *Aanoopa* and the rest may be *Sadharana*. There are examples where the features of *Jangala* and *Aanoopa* are seen within a distance of 100 miles. Hence, there is no equation of places for climatic conditions in the classics, but only its geographical description. This concept of *Jangala*, *Aanoopa*, and *Sadharana* is time tested and are acceptable irrespective of time.

Conclusion

Knowledge of *Desha* helps in drug identification and drug discovery. The role of *Desha* in advising the *Pathya* and *Apathya* cannot be ruled out. Though there are descriptions of various regions in the classics, the concept of *Jangala*, *Aanoopa*, and *Sadharana* is the ultimate. It has to be kept in mind while assessing the *Hetu* and also in deciding the treatment.

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हिन्दी सारांश

चरक संहिता में वैद्यकीय भूगोल

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आयुर्वेद के प्राचीनतम ग्रन्थों में चरक संहिता भी एक है। इस तन्त्र में वैद्यकीय पद्धति के तत्वों के साथ साथ भौगोलिक विषय के बारे में भी अनेक विषयों की चर्चा की गयी है। स्वास्थ्य रक्षण एवं व्याधि परिमोक्ष में देश का योगदान अत्यंत महत्वपूर्ण है। इस प्रबन्ध में उन सारे भौगोलिक विषयों को एकत्रित करके, उन्हें वैद्यकीय दृष्टिकोण से समझने का प्रयास किया गया है।