l'm not a robot



by Kaviraj Kunja Lal Bhishagratna | 1907 | 148,756 words Summary: This current book, the Sutra-sthana (english translation), is the first part of this voluminous medical aspects of Ayurveda. Descriptions of diseases, various diets and drugs, the duties of a surgeon, surgical procedures, medical training; these are only some of the numerous subjects contained within the Sutra-sthana. The Sushruta Samhita is the most representative work of the Hindu system of medicine. It embraces all that can possibly appertain to the science of medicine. Susruta-samhita is recognized as the first authoritative book on Ayurveda, and is described as a subdivision (Upanga) of the Atharvan.Sushruta (the physician) is famous for knowledge of plastic surgery, owing to his writing and experimenting with this particular science. The sanskrit title is []]]]]]]]]], or transliterated: "Suśruta-samhitā: Sūtrasthāna" Source 1: motilalbanarsidass.com Source 2: archive.org Share - copy and redistribute the material in any medium or format for any purpose, even commercially. Adapt - remix, transform, and build upon the material for any purpose, even commercially. The licensor cannot revoke these freedoms as long as you follow the license terms. Attribution - You must give appropriate credit, provide a link to the license, and indicate if changes were made . You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use. ShareAlike — If you remix, transform, or build upon the material, you must distribute your contributions under the same license as the original. No additional restrictions — You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits. You do not have to comply with the license for elements of the material in the public domain or where your use is permitted by an applicable exception or limitation . No warranties are given. The license may not give you all of the permissions necessary for your intended use. For example, other rights such as publicity, privacy, or moral rights may limit how you use the material. This document is an English translation of the Sushruta Samhita, Volume 1 - Sutra-sthanam, edited and published by Kaviraj Kunja Lal Bhishragratna in 1907. It's based on the original Sanskrit text and includes an introduction, translation of different readings, notes, comparative views, index, glossary, and plates. The translation aims to make ancient Indian medical literature accessible to the scientific world. UNIVERSITY OF TORONTO LIBRARY WILLIAM H. DONNER COLLECTION purchased from a gift by THE DONNER CONDATION Digitized. by tine Internet Arciiive in 2008 with funding from IVIicrosoft Corporation Iit... UNIVERSITY OF TORONTO LIBRARY WILLIAM H. DONNER COLLECTION purchased from a gift by THE DONNER CANADIAN FOUNDATION Digitized by tine Internet Arciiive in 2008 with funding from IVIicrosoft Corporation littp://www.arcliive.org/details/englislitranslati01susruoft AN ENGLISH TRANSLATION OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / Wt OF THE' SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / Wt OF THE' SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / Wt OF THE' SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / Wt OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / Wt OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / Wt OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. Vol. 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. VOL 1.—SUTRASTHANAM. AN ENGLISH TRANSLATION / WT OF THE SUSHRUTA SAMHITA. VOL COMPREHENSIVE INTRODUCTION, TRANSLATION OF DIFFERENT READINGS, NOTES, COMPARATIVE VIEWS, INDEX, GLOSSARY &. PLATES. (IN THREE VOL UMES.) Vol. I.-SUTRASTHANAM. CALCUTTA ^ No. 10, KASHI GHOSE'S LANE. '* - 1907.. f' srf3 Printed by J. N. Bose. ' ' / College Square, Calcutta. MW Rightx Rexd'ved) WAHAMAIlUPAbHVAYA KAVIRAJ DVARKANAIH SEN, KAVIKATNA. (In Durbar dress II w^ff^ II PREFACE. --^B' Xo special ^polofgy is necessary for the publication of the Sushruta Samhita. The vast medical literature of ancient India practically remains as yet unexplored, and any undertaking, which "has the object of making that terra incognita, known to thescientific world, is bound to be welcomedby the public. Spasmodic attempts have been made by several scholars and erudite bodies to bring out an English translation of the Sushruta Samhita, as the most representative work of the Ayurveda, but we regret to say that such efforts have hitherto proved abortive. In spite of incomplete infor- mation on the subject many drugs of the Ayurvedic Medica have been adopted by different foreign ?vlateria systems of medicine, and this has afforded us a fresh impetus to issue an English translation of the book, which not only deals with the essentials of Indian Therapeutics but embraces the whole range of the science of A3airveda, as it was understood and practised by the Vedic sages. We sincerely hope that the English rendering of Sushruta, which we have undertaken, will, when completed, supply a long-felt want and help to start a fuller inquiry into the properties of the indige- nous drugs of India. Many institutions have been already started both in England and Germany with the sole object of studying the reti(^logy of tropical diseases, and of formulating an empirical system of their prevention and cure, and we, hope an I4nglish translation of their origin(^ may contribute no small amount of useful information to those bodies. "We have many things to learn" observes Lt. Col. C. P. Lukis, M.b., F.R.C.S., I. M.S., Principal, Medical Science," and five doubt not that an accurate knowledge of the contents of this splendid monument of the Ayurveda in quarters where it has every chance of being utilised and improved upon will make the Inmian race better equipped too combat the ills of life. A few remarks on the method we have adopted in editing this work are necessarv by way of explana- tion. We have carefully collated all the available texts of the Sushruta Samhita, whether printed or otherwise, expunging from the body of our work all texts, which, though not proved to be wholly spurious, are of questionable authority, and putting them in foot-notes as "Different Readings" or "Additional Texts." In cases of doubt or discrepancy of opinion we have thought fit to abide by the decision of our revered preceptor, Mahamahopadhyaya Kaviraj Dvarkanath Sen, Kaviratna, and inserted within brackets explanatory clauses, where a strictly literal translation of texts would not convey their true meaning. In many instances it is impossible to find in the English words within brackets, after the original Sanskrit terms. For exapiple we have translated the term Ojah as albumen. Sut the Ojah of the Ayurveda is a disputed thing, t It may mean something like but not exactl)' albumen; glycogen, which contributes largely to Ill "^ , the reproductive activity of tlfe body in certaiR)*instances. would appear to be the more correct description. In cases like this we h'ave not put before our readers, any suggestions of our own, but left them free to draw their own inference. And for this purpose we further intend to Append to the last volume of this work an index a,nd a glossary illustrating the possible meanings of the Ayurvedic terms with English and Latin synonyms, wherever possible. The true meaning of the Ayurveda can be better explained or understood only with the light of moder.n science, and we leave it to our European colleagues to carry on the research on the lines we have suggested with regard to this ancient S3'stem of medicine, which a better knowledge of its principles and methods will enable them to do. By a lamentable oversight, the terms Vayu, Pittani, Kaphah and Dosha have been translated as wind, bile, phlegm and humour in the first few chapters. For the sake of convenience we have divided the entire work into three volumes, the first few chapters. For the sake of convenience we have been translated as wind, bile, phlegm and Uttara Tantram. We have adopted the diagrams of surgical instruments from that most valuable work of the Thakore Saheb of Gondal, called the History of the Aryan Medical Science, for which I am particularly indebted to His Highness. In conclusion, we beg to conve\' our sincerest thanks to our preceptor's son Kaviraj Jogendranath Sen Vidya- bhusana M A., Dr. U. D. Banerji L. R. M. R. C. S. C. P., (Lond), and Lt. Col. K. P. Gupta M. M. D., I. ^l. S., A., Professor Janakinath Bhattacharya M.A. B?L., P.R.S. for having kindly examined the different portions of the manuscript. I am grateful to Dr. Surendranath < IV t f # (josvaini B^A., L. M. S. teo, for the kind interest he has all 'along taken in the publicittion of this work and />i"or various intelhgent suggestions, which haxc been of consfderable help to me. My thanks are also due to numerous learned authors, ancient and modern 'from whose writings, I ha\e found it necessary to make frequent quotcition^. 10, Kashi Ghose's Laxe.] KUNJA LAL BIIISHAGKATNA. i.-^t TJeceiiiher, igoy. \ CALCUTTA. J Kaviraj. TNTRODTK^TION. ^^ Sushruta :-- His age and personality :-- A few preliminary observations regarding the technique of the Sushruta
? When and where did he live and flourish ? These are questions that would naturally suggest themselves to the readers of the following pages ; but the}? can only be imperfectly answered like all similar questions respecting the lives of commoners were deemed matters of little kings or moment to the vital economy of the race and all histories; and biographies were looked upon as the embodiment of thLe flimsy vanities of life. Lives of saints and canonised kings had been made use of in certain instances as themes of national epics. But they were intended more to elucidate or enunciate the doctrines of the certain schools of Ethics or Metaphysics than to record any historical fact or event. Authentic history we have none beyond chronicles of state events and royal names in some instances and those which ; are usually found in the Sanskrit Puranas are strange com- binations of myths and legends, which often contradict each other. Hence the utter futility of attempts to explain a historical fact by the light of a votive npdal or tablet unearthed perhaps frorri the ruins of one of sur ancient cities. Such an endeavour serves, in most cases, only to make the " darkness visible, " and the confusion more confounded. ii 'iNTROniTCTIOX. Identity of Sushruta and Divodasa :-- It is only safe to assert that Sushruta was of tl>e raceof Vishvamitra. The Mahabharatam f i) represents him as a son of that roval sage. This coincides with the description given of him in the present recension of the Samhita. The Garuda Puranam (2) places Divodasa as fourth in descent from Dhanvantari, the first propounder of medical science on earti}, whereas the Sushruta Samhita describes the two as identical persons. But this apparent anomaly in the Samhita can be accounted for, if we consider that in some parts of India the custom still prevails of appending, for the purposes of better identi- fication, the name of one's father, or of a glorious ancestor to one's name, and it is therefore not surprising that Divodasa (the preceptor of Sushruta), who was a firm believer in the doctrine of psychic transmigration, should represent himself as an incarnation of Dhanvantari, and name and a=.sume his style in the usual wav. Revond this meagre genealogy we possess no trustworthy information regarding the life and personality of Sushruta, the father of Indian Surgery. Age of the Sushruta Samhita:— We have no means of ascertaining what the Samhita was like as originally written hv Sushruta, the present being only a recension, or rather a Mahahhiralam — Anushasan Parva, Ch. W (2) f^-^rf*T^TC^T recension of recension, or rather a Mahahhiralam and even solutions concur in identifying hifn ^with the celebrated founder of the Madhyamika school of Buddhistic philosophy —a fac| which materially assists us in fixing the age of the present Samhita. A few quotations from the Vriddha (old) Sushruta are all that are preserved of the oviginal Sainhitu. But their genuineness is ot a problematic character, and we are not sure whether the}- are the productions of lesser lights, or of ancient though less renowned commentators, attri- buted to the master to invest theiu with a greater sanctity ;ind authority— a practice which was quite common amongst the bibliographers of Ancient India. Date of Nagarjuna :— At all events Nagarjuna who redacted the Sushruta Samhita lived about the latter part of the fourth century before the Chris£ian era ;(2) and the Dallanas Commentary, Sulrasth^nam, Ch. I. i. Dallana mentions the names of Jejjada, Gayadasa etc., as the redactors of the original Samhita, and rejects as spurious or of questionable authority the texts which cannot be found in their editions of the work. Must probably the authoritative verses are quotations from the Vriddha Sushruta. Recension or Pratisamsk^ra consists in curtaiUng statements that have been made inordinately elaborate, and in dilating upon truths lliat have been very succinctly dealt with in the original book. A Redactor or Pralisamaskarta makes an old book new again. A Samhita, on the other hand, deals with aphorisms coniained in the Vedas. ^ t^T^flfST?! #f%m'TTT: H^lf^cTT: I (2) rT^T VUT^Jf!: SIT^nFff^ qif*!/^: ! Rijatarangini I. Taranga. Vs. 172-173. IV wtroAj CTION. original or V^rtddha Sus|jruta 'must have been wriUen at least two centuries earlier in order 'to acquire that hoary aythority and prescription of age,* which alone could have given its right to a recension at the time. Several scholars on the authority of a very vague and general statement concerning* the recension of the Samhita in Dallana's commentary, ascribe th'e authorship of the Uttaratantram to be neither an interpolation, nor a subsequent addition, but that it forms an integral portion of the book as it was originally written, though not planned by the Rishi. In the first Chapter of Sutrasthanani Divodasa formally divides the Science of Ayurveda into eight subdivisions, such as, the Shalya (surgery), Sh^iakya (portion treating of diseases restricted to super-clavicular regions such as the eyes, etc.), Kaya-Chikitsa (general diseases such as, fever, etc.), but does not speak anything about them in the first five Sthcinas or subdivisions of the evelids) in con- nection with the classification of surgical operations. It is inxpossible that Divodasa would fall short of his duties by omitting to give instructions on all the subdivisions of the Ayurveda as he promises at the outset, or that Sushruta would leave his Samhita, which is pre-eminently a work on surgery, ^ \ laryngotomy or fever-therapeutics from his work. From I the general plan of the book we can safely assert that Sushruta dealt with easier or more elementary topics in the first five subdivisions of his Samhita in the manner of our modern progressive readers, reserving the discussion of those re^uirmg a more advanced knowledge and skill for the Uttaratantram. The Uttaratantram has not been included within the five original subdivisions of the Samhita inasmuch as it embraces and more elaborately discusses INTRODUCI'ION. J V >> lupics which legitimately beloi^q to, ^o are but^{*} incidentairy mentioned in those subdivisions. It is probable that Nagarjuna might have redacted this part of the Samhita in common with its other portions. (i) Western opinions is to place Nagarjuna in the first quarter of the third Century B. C. (2), and for fixing Sushruta as a contemporary of Sakya Sinha Buddha. It i contended that the age immediately preceding Sakya Muni was a period of decadence in Hindu thought; and the Sushruta Samhita must have been the fruit of a revived intellectual activity which is in favour of the hypothesis of Greek influence on the Hindu system of medicine. But great men there had been in India before Buddha. The age which immediately preceded the age of Buddha was by no means an age of decadence properly speaking, the age which followed the downfall of Buddliisin shows, on the contrar}, signs of true decadence. India had had eminent philosophers and scientists almost contempo- raneously with the great Buddha. The chronological facts Sushruta is mentioned in the (i) MaMmahopadhyaya Kaviraj Dvaiaka N^lh.^en Kaviialna of Calcutta subscribes to this opinion - Tr., (2) Bael's Buddhistic Records of the Western World. \'ol. II. P. 212. Stein's Rdjatarant^uai. > (3) Lalita-Vistarain - Raja R. L. Mitter's Edition, Chaptef I. VI * INTRODUCTION. ^- V^rtikas oP'(i) Katyayana ^4 Century B. C.) and we have no hesitation in saying thatP'^lie* original was Sarnhita ^vritten at least two centuries before the birth of Buddha. 'f We are equally ready to admit, on the other hand, that the tinal recension of the Sarnhita by Nagarjuna, at least the form in which we have it, was made about the second Century B. C. ' ^ Two Nagarjunas :everal scholars, on the authority of Dallana (the celebrated commentator of the Sushruta Samhita) endeavour to establish the identity of the tenth Century (2). But their contentions fall ground when we know that many to the verses of the occur in the works of Bagbhat (Ashtangahridayam) and Madhava (Nidanam), which are two of the works which were translated by the order of the Kaliph (3) in the eighth century. The internal evidences of the book do not supply us with any authentic material to compose anything like a biography of this father of Hindu Surgery. Internal Evidence :-The line in the Samhita, which has formed the veritable bone of contention amongst scholars of all shades of opinion as throwing a light upon the probable date of its composition, occurs ni the Sharira Sthanam, in connection with the development of the foetal body and reads as "Subhuti Gautama said that it is the trunk that tirst developed." Conflicting testimonies and the uncertain indication of materiaSs at our disposal : - It is a matter of historic (I) f^ffll^^tf' K;5 lyayana'si V^rlikas lo Panini's Grammar. " Chakra Dutta - Rash^yandhikara. (3) P. C. Roy-Hindu Chemislry p. X\'1II. (1902), INTRODtTrTIOX. ' VU >) certainty that Subhuti was o^e of, the personal disciples of Sakya Sinha Buddha, and that it was customary amongst the contemporaVy Buddliists to append the appela- tion of their (i) lord fGautama or Rodhisattva) to the "name of a proselyte to accentuate his wisdom and sanctity in the world. A certain section of scholars is'never tired of setting up this line as a conclusive evidence of the fact that the Samhita was, at best, a contemporary production of early Buddhism. But they shut their eyes to opinions of Shaunaka and others on the subject guoted exactly' in the same portion of the book, which places the date of its composition at least centuries earlier. the author of the renowned Shaunaka Samhita of the Atharvan. These facts lend a very plausible colour to our hypothesis that the original Sushruta Samhita which, was first composed perhaps con- temporaneously with the latter portions of the Atharvan, naturally discussed the opinions of Shaunaka and other Vedic
embryologists, while Nagarjuna, at the time of redacting that book, quoted the opinion of his contemporar}' Subhuti for the purpose of giving him an equal status with the Vedic Rishis, if for nothing else. Greek Influence on the Hindu system of medicine and on the Sushruta Samhita in special, we must disabuse our mind of all sentiments of racial vanity and proceed to investigate the case in a scientific and unprejudiced spirit before giving a more detailed account of the contents of the SushrutaiSamhita. (i) Nagarjuna Bodhisattva was well practised in the art of compound- ing medicine. N^gSrjuna Bodhisattva by moistening all the great stones with a divine and superior decoction changed them into gold. — Bael's Buddhistic Records of the western world Vol. II. AnuvSk 19, 45. 46. 5. iNTRonurrioN. Su^hrufa and Hippocrates, many western scholars are apt , to conclude too hastily that the ancient Indians drew their inspiration in the healing art from the medical works of the Greeks. But the reverse may be said of the Greeks as well with the greater confidence because such an assertion is supported by historic facts, and confirmed by the researches of the scholars of the west (i). According to all accounts Pythagoras was the founder of the healing art amongst the Greeks and the Hellenic peoples in general (2). This great philosopher imbibed his mysteries and metaphysics from the Brahmanas of India. Mr. Pocock in his Jnt^ia in Greece identifies him with Buddhagurus or Buddha, and it is but an easy inference to suppose that he carried many recipes and aphorisms of his master's Ayurveda with him. The sacred bean of Pythagoras is thought to have been the (3) Indian Nelumbium (Utpalam). We know thai simnllaneously with the birth of Buddhism, Buddhist Sramanas were sent out to Greeks and there is good reason Greek Simnoi to believe that the (venerable) were no other than the Buddhist Sramanas (4). Now a missionary usually teaches the sciences of his country in addition to the preaching of his gospel. The distant mission stations or monasteries of Buddhism were (1) There*1s no ground whatever to suppose that Sushruta borrowed his system of medicine from the Greeks. On the contrary, there is much to tell against such an idea— Weber's History of Indian Literature. (2) The Origin and Growth of the Healing Art — Bedroe P. 162. (3) Pratt's FloNiering Plants. Vol. I P. 57. (4) These *Simoi (venerable) whom Clemeni of Alexandria has narraleil to have rendered worship to a pjTamid originally dedicated to tile relics of a god, were the Buddhi!»t Arhals (venerables) Sramanas. Lalita-Vistaram— T\:iia R^jendra I.ala Milter's Edition. Ch. I. INTRODUGTION. IX the principal centres for disseaiinating Brahm^»nic culture in distant lands, and Hippocrates, though he did his' utmost to liberate medical sciertce iVom the thraldom of speculative philosophy, yet might have thought it necessary tG>tetain only those truths of the Ayurveda which Pythagoras and the Buddhistic brotherhood might have imported into his country, and which do not exactly appertain to the domain of pure metaphysics. Of course, it is quite possible for men of different nationalities to arrive at the same truth cr conclusion independently. There are coincidences i'l science as in art and philosophy, (i) Gravitation and circulation of blood (2) were known ta tfite Indians long before the births of Newton and Harvey in Europe. The cele- brated atomic theory was preached in the Gangetic valley some five hundred years before the birth of Christ (3). But well may we ask those, who still adhere to this Hellenic hobby, to look at the reverse side of the picture as well. It may be stated without the least fear of contradiction that the Channel of Arabic, Persian and Latin translations still form the Siddhanla Shiromani (Bhaskaracharyaya) GolodhyAya. iT^TR ^R ^fq II ???Tg lifqcT' ^^ %-^^ ^^ it%Tr:, cI^t^ f^q^1 ^JTT T\\^^ T.w^^m: I VTT^fl^TaiiT | (BhavaprakasUa). The Hdrita Samhitd, which according to certain scholars, is older than the Sushruta Samhitd, refers to the circulation of blood in describing l'induroga (Anemia). The disease, he observes, is caused by eating clay which thus blocks the lumen of veins and obstructs the circulation of blood, Bhcivamisra, the celebrated author of Bh^vaprakdsham, and who is a century older than Harvey, has the above couplets bearing on the sufcject. (3) Vaiseshika Darshana by Kandda. X Introduction. »« basis of all sj-stems of s^ienti^c medicines in the world (i). Of these, the Sushruta Samhit^ is the most representative ;vork of the Hindu system of medicine. It embraces all that can possibly appertain to the science of medicine (2). Sushruta prior to Charaka prior to Sushruta in to place respect of time. But the Puninas unat^mously describe Sushruta in to place respect of time. (samasas) used by him, the prose and metrical portions of the Sushruta after the models of Jaimini, Patanjali, and other philosophi,r cal writers who had adopted prose or metre according to the exegetic or rationalistic tenor of the subjects in their works, have all been cited to prove Sushruta a contemporary of the Darshanas, or of Buddha. But these may serve, at least, to fix the date of the recension by Nagarjuna, i.e., the Sushruta Samhita as we have it, but can never help to determine the golden age (Satya Yuga) (3). On the other hand, if (1) A, "The great works of Charaka and Sushruta were translated into Arabic, under the patronage of Kaliph Almansur, in the seventh century. Sushruta known by the name of "Kelale- The Arabic versions formed the basis of European medicine, which remained indebted to the Eastern science of medicine down to the seventeenth century."— History of the Aryan Medical science (Th^kore Saheb of Gondal) P. 196. B, For tljc indebtedness of Arabic school of Medicine to the works of Indian masters, see Puschmann P. 162. C. BednVe. Book IV. Ch. IL 286–299. (2) Dr. Wise (Hindu system of medicine). f^>?fT ^?5^^' ^'n?T^T 5B5f5TfT: II Garuda PurSnam. Chip. 142, Vs. 5-6. INTROnitC?ION., xi the testimonies of the Puninas -have anj- histor^6al worth, we ca!i safely him somewhere in those dim centuries which immediate})' succeeded the composition of the Atharvan. Charaka, too. in coi^nec- tion with his discourse on the development of the evelopment evelopment of the evelopment evelopmen foetal body has cited the opinion of Dhanvantaii (ij on the subject (tiie same as promulgated in the Sushruta as a Surgeon : (meaning Sushruta and his school) in cases where surgical aid and knowledge are necessary ; this proves that Sushruta was before Charaka. Sushruta as a Surgeon : Stishr'uta was emphatically a ' 'igeon, and the Sushruta Samhiti is the only complete 'ok we have which deals with the problems of practi-)cal surgery and midwifer}'. Almost all the other Samhitas written by Sushruta's fellow students are either lost to us, lor are but imperfectly preserved. To Sushruta may be attri- buted the glory of elevating the art of handling a lancet or forceps to the status of a practical science, and it maj' not be out of place here to give a short history of the Ayurveda as it was practised and understood in Pre-^uhsrutic times if only to accentuate the improvements which he introduced in every branch of medical science. Commentators of the Sushruta Samhita We would : be guilty of ingratitude if we closed this portion of our dissertation without expressing a deep sense of our obliga- tion to Jejjada Achiirya, Gayadasa, Bhaskara, Madhava, Brahmadeva, Dallana and Chakrapani Datta, the celebrated commentators and scholiasts of the Samhitd, 'ji'lio have laboured much to make the book a repository of priceless (i) ^^if*T?fTiaTqKfH ^^^f^: I \'. Charaka, Shariraslhiinam. Chap. I^Tt EfTcT^T^Tt ssit^'^^'I^^ II \'. xn INTRODUCTION. wisdom ancf experience of all the commentaries in revising and collating the texts of Sushruta Samhita. Origin and History of the A yurveda : -In the science of medicine, as in all other branches of study, the ancient Aryans claim to have derived their knowledge from the gods through direct revelation. Su*shruta in his Samhita has described the Ayurveda as a subdivision (Upanga) of the Atharvan (i), while according to others the science of the Ayurveda has its origin in the verses of the Rik Samhita (2). Indeed the origin of the science is lost in dim anti- quity. Death and disease there had been in the world since the knowledge about the properties of many valuable medicinal drugs. There is a verse in the Rigveda which shows that the lower animals were the preceptors of man in matters of selecting food stuffs and medicinal simples (3K Individual experiences in the realms of cure and hygiene were collected, and codified, and thus formed the bases of the present Ayurveda. The properties of a new drug were always hymned in a Vedic verse with a regularity which enables us to put our finger upon the very time when a particular drug of our Materia Medica first came to be of service of man (4). (i) Sushruta Samhita, Sutrasthanam. Ch. I. 3. (2) ^jrC^^T^^i? ^qt?: Charana ^^ uha by \^y5sa. (3) jitfwT^* ^w(f[I ^?^^ wis 1 + 1]) and the very time when a particular drug of our Materia Medica first came to be of service of man (4). I ^a. (4) A. ipc: wii: ^gfi'?Tt^5Tifn It^r'^q^rd'T^ 1 Atharvan Samhits U. Sec also Ibid I 2 II. 4. 7. 9. 25, 27 and 36. INTRODUCTION. , Xlil Discrepancies accounted' for : - Verses q\i medicine, hygiene, and surgery, etc. lie scattered throughout the four Vedas. Those having bearing on Medicine proper occur most in the Rigveda, and perhaps it was for this reasoT^i that Agnivesha, who was a physician, has ascribed the^origin of the Ayurveda to revelations in the Rik Samhitd. Precepts" relating to the art anu practice of surgery are found most in the Atharvan, as he was preeminentl}' a surgeon himself. Different kinds of physicians :--- Vedic India, like Ancient Egypt, recognised the principle of the division of labour among the
followers of the healing art. There were Shalya Vaidyas (surgeons), Bhisaks (physicians) and Bhisag- atharvans (magic doctors), and we find that at the time of { the Mahabharatam, which nearly approaches the age of our number of the sects had increased to five which author, the J were named as Rogaharas (physicians^ Shalyaharas (sur- geons), Vishaharas (before the age of Sushruta) physicians had to go out into the open streets, calling out for patients (3^ They lived in houses surrounded by gardens of medicinal herbs. The Rigveda mentions the names of a thousand and one medicinal drugs (4). Verses eulogising the virtues of water as an all-healer, and of certain trees and herbs as purifiers of the atmosphere are not uncommon in the Vedas. Indeed the rudiments of Embryology, Midwifery, child management (pediatrics) and sanitation were foimu- (i) ciwT?^Tre5nf^=^=^ '^]'^T\^ ?^Tf*ni5iTW^M 1 Rik Samhitfi I M. 1 16-16. (2) MahAbhdratam. Shantiparva. Rajadharmanu^hashan Parv5dhydya. (3) ^cT' f^^^ I Rigveda. IX M» 112. > (4) sifT* % ^m^ fm^ ^^'g^f^TT. Rik. XIV INTROgDUCTION. lated in thecage of the Vedas ind Brahmanas, and we shall present is see how from* these scanty- and confused materials Sushruta created a science and a Sanjhita which invice the ddmirs. ion of the world even after thousands of years of human prc*gress. Origin of A'yurvedic Surgery — In India, as in all : other countries, curative spells and hewing mantras preceded medicine (i) and the first man of medicirte in India was ; a priest, a Bhisag Atharvan, who held a superior position to a surgeon in society. The first Aryan setLlements in the Punjab were often assailed by the dark aborigines of the country, and in the wars.that ensued surgeons had fre-' quently to attend to the Aryaa chiefs and soldiery. So in the Rigveda (2) we find that legs were amputated and replaced by iron substitutes, injured eyes were plucked out, and arrow shafts were extracted from the limbs of the Aryan warriors. Nay we have reasons to believe that many difficult surgical operations were successfully per- formed, thougli some of them sound almost incredible. But although the aid of surgery was constantly sought for, surgeons were not often allowed to mix in the Brahmanic society of Vedic India. This is hinted at by our author when he says that it was during the wars be tween the gods and demons that the Ashvins, the surgeons of heaven, did not become entitled to any sacrificial oblation till they had made themselves eligible for it by uniting the head of the god of sacrifice to his decapitated body. The story of the progress of Ayurvedic surgery is long and inter- esting, but it must suffice here to mention that with the (1) Bedroe's Origin of the Healing Art, and Sir John Lubbock's Prehistoric times, (2) ^^ 5igi^i^?5l f^aj^i^?5l f^aj^?5l f^aj^i^?5l f^aj^?5l f^aj^i^?5l f^aj^i^?5l f^aj^i^?5l f A. 8 Ad. 186 S. 116. 5. INTRODUCTION. 'XV ' > return of peace, the small Aiynn settlements grew in number and prosperit}-. And the rich Ar3'an nobles now travelled in stately carriages, and as there were constant accidents ihere arose a class of surgeons who exclusively devoted tlfemselves to the treatment of injured animals. The surgeons, now no longer required in camps and on battle fields, had to attend on the rich ladies at baronial castles during parturition, the magic doctor (Bhisag Atharvan) who could assuage fever and concoct lo\e potions (i) being held as the greatest of them But the Vedic Aryans had a regular armoury against pain all. and suffering, which is in no way inferior to our present day Materia Medica. But of that we shall speak later on in connection with the therapeutics of Sushruta's Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So rnuch for the history of Vedic Surgery :- So collecting the scattered facts of the science ^fom the vast range of Vedic literature. Sushruta had no desire of abandoning the Vedas in the darkness and pushing en an independent voyage of discovery. The crude methods and the still cruder implements of incision such as, bits of glass, bamboo skins etc., laid down and described in the Samhita, may bj the relics of a primitive instrumentalogy which tiiund favour vviih our ancestors long before the hymnisation of any Rik verse. Practical anatomy. The quartered animals at the Vedic sacrifices afforded excellent materials for the framing of a comparative anatomy (2)'. Sushruta devoted his whole life to the pursuit of surgery proper, to Rik Samhit5. X M. 145 S. i. (2) Vide.^itareya Br^hmana I, 2. II, i±. Ill, 37, XVI INTRODUCTION. which he b/'ought a niyid stored with luminous analogies from the lower animals. It was he who first classified all.surgical operations into five differe'nt kinds, and grouped them under heads such as Aharya (extractions of solid bodies), Bhedya (excising), Chhedya (incising), Eshya (prob- ing), Lekhya (scarifying), Sivya (suturing), Vedhya (punc- turing) and Visravaniya (evacuating fluids). The surgery of Sushruta recognises a hundred and twenty-five different instruments, constructed after the shape of beasts and birds, and authorises the surgeon to devise new instruments according to the exigencies of each case. The qualifications and equipments of a surgeon are practically the sam*^ as are recommended at the present time. A light refresh- ment is enjoined to be performed while the patient is fasting. Sushruta enjoins the sick room to be fumigated with the vapours of white mustard, bdellium, Nimva ' leaves, and resinous gums of Shala trees, etc., which fore- shadows the antiseptic ^bacilli) theory of modern times. inexhaustible resources of western surgery, and one may be naturally led to suspect the au' henticity of the glorious achievements claimed to have been performed by the surgeons of yore; but then their kno vledge of the properties and virtues of drugs were so great that cases, which are reckoned as surgical nowadays, were cured with the help of medicines internally^pplied. "Surgery," says Tantram, is mutilation not doctoring (i). It should only be employed when the (l) Aif^s^qfq* f^5n tf^ si «3f^^ ifTv I'.allAla T'andil. XX » INTKONUCTION. advocates Clesarean se^nion iri hopeless cases of obslruction, lays down that the instrument should be employed only in those cases where the proportion between the child and the maternal passage is so defective that medicated plasters, fumigations, etc.. are not sufficient to effect a natural delivery. His directions regarding management of the puerperal the state, lactation and management of the chijd and the choice of a wet-nurse are substantial!}- the same as are found in modern scientific works of European authors. A feeling of pride and joy moves our heart when we contrast these glorious achievements of our ancestors with the meanness of results which modern Europe has gained in this department of midwifer}. In those old days perhaps there were no hospitals to huddle patients together in the same room and thereby to create artificially septicemic poisons which are now so common and so fatal in lying-in rooms. A ne^-'^' built lying-in room in an open space abunduntly suf^s-ea J with the rays of the sun and heat of the burning f^ie for each individual case, the recommendation of a fresh bamboo-chip for the section of the cord are suggestions the value of which the west has yet to learn from the east. Dissection :--Sushruta, himself a practical surgeon, was the first to advocate dissection of dead bodies as indispen- sable for a successful student of Surgery. The Paritschittas of ancient Egypt perhaps learnt their art from the Purusachettas (Dissector) of ancient India. With a candour less common among western scholars Dr. Wise observes that, "the Hindu philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having, though opposed by strong preiudire, entertained sound and philosophers undoubtedly deserve the credit of having the uses of the dead to the living and were the first scientific and successful cultivator? medical knowledge, practical anatomy". A bungling burgeon is a public danger and Sushiuta savs iliat, "theory without practice is like a onc-winget bird that is incapable of flight". INTK01)UCT!(ON. XXI » > > Study of Practical Surgery :- To give effii-iency in surgical operations, the pupils of Dhan^antari(Sushruta etc.) were asked to try their knives repeatedly first on natural and artificial objects resembling the diseased parts ofv> the body before undertaking an actual
for operation. Incision, example, was practised on Pushpafala /cucerbeta maxima), Alavu (Longenaris Vulgaris) or Trapusha (cucmis pubescuas), evacuating on leatfier bags full of water and on the urinary bladders of deac animals, scarification on the hides of animals on which the hair was allowed to remain. Venesec- tion was practised on the vessels of dead animals and on the stalks of the water-lily : the art.of stuffing and probing on wax spread on a Shalmali (Bombox Malabaricum) plank, and suturing on pieces of cloth, skin or hide. Ligaturing and bandaging were practised on dummies, cauterisation on unbaked earthen vessels filled with water. It is almost with a feeling of wonder we hear him talk of extirpation of uterine excrescences and discourse on the necessity of observing caution in surgically operating upon uterine tumours (Raktarvudai. These facts should be borne in mind as they would help us a good deal in account- ing for the numerous anomalies that are to be found in the anatomical portions of the Samhita. Study of Practical Anatomy :-- We have stated be- fore that tb.e quartered sacrificial animals afforded excellent materials for the framing of comparative anatomy. The Aitareya Brahmana contains special injunction for the quartering of such animals (i) and we are told that the preceptors availed themselves of the religious meetings to (i) The Aitareya Brahmana contains afforded excellent materials for the framing of comparative anatomy. tlividini; the orgaas and viscera of the sirriticijil animals 'wliich was kepi 'secret among the priesls. Aitareya Brahmana VIII. i. XXII INIROniJCTIOX. < deinonslrjiLe the lessons ou^ practical I. anatomy. We come acrosj; such terms as the heart, stomach, brain, intestines, anus, liver, spleen, uterus etc', iv the Rigveda, and the *' Aitaj-e3'a Brdhmana (i) There is an entire h\inn (Rik) devoted* to the subject and treatment of Phthisis (Knja Yakshma) which becomes utterly unintelligible in the absence of an accurate knowledge about the structure of lungs, and mechanism of the human heart. The Vtdic Arya fully understood the resultant nature of the human organism. The Rik Mantra, which to this day is recited on the occasion of a funeral ceremony, ampl}' testifies to the fact that he used to look upon his mortal frame as the product of the combination of the five physical elements (2). He understood the effects of different drugs upon diges- tion and the office which the tendons, muscles, flesh and nerves, etc. respectively serve in the economy. It is in the Sushruta Samhita that we find a systematic attempt at arranging together the facts of anatomical observation. The sturd}- Aryan colonists exchanged their simple mode of living for luxuiy and ease. The number of general diseases was great. Jn (1) A. fT^T ^^^ f ?gjnri:«3 f^fsffTTiRii Rik Samhita \'. \'II, I, -'3, 538. H. \ide also.Ailareya BrShmana I 2. II 12. Ill 37. (2) The iialuie of the huiiaii body as tile resulting efi'ect of the verse. ^Tqt'TTiI^ qf? era n f%rT?ft^y'l«I^ wfaf^VTTSlf 1»: I * Rik Samhita X M. 16 S. 3. Which l)eing translated reads :- Let his eye go t(j the sun, let his breath- wind nVx with the wind'of the atmosphere, and to the sky. earth and the holy Narada (i) ^reacl] the gospd of plain living and high thinking, and exhort them, like Cato, to return to their simpl'e mode of life. The long peace brought opulence in its train and wealth begot indolence and disease. Men like Bharadvaja, Angira, Yamadagni, Atreya, Gautama, Agastya, Vdmadeva', Kapisthala, Asa- marthya, Bhargava, Kusliika, Kdpya, Kashyapa, Sharkara- ksha, Shaunaka, Manmathayani, Agnivesha, Charaka, Sushruta, Narada, Pulastya, Asita, Chyavana Samhita, we must try to account for the many anomalies and discrepancies that have crept into or have been suffered to remain in the present recension of the book. Take, for example, the line in which Dhanvantari is made to speak of three hundred bones in the human organism. It is impossible that the human frame, in so short a time, has got rid or have been suffered to remain in the present recension of the book. so many of of its skeletal accessories simply through disuse, or because of their becoming superfluous in the altered condition of its environments. More absurd is it to think that Sushruta, who discards all authority except the testimony of positive knowledge, would write a thing which none but the blind would believe in a dissecting room. The spirit of the a^re ill which he flouri:>lied piecliided the possibility oT^ such an crrnr. Anomalies accounted for : -In ancient India, subjects chosen for the demonstration anatomy were of practical always children (2), and naturally those bones, which are (i) Vide Aitann'a Br5hmana VII. 13. (2) The injunction of ihe Hindu Sllasiras is ihat '-corpse of persons more than 2 years old should he burned." Cremation of dead bodies bein" xxi\- f (\'^Roi)rc~Ti().\. fused or''«'inaslon"iised inlo'one whole durine: adult life, have been' separately enumerated — a circumstance which may, to some extent, account for th'e excess in the number of bon'es described in this Samhita (i). Likewise the theory that Sushrula might have included the teeth and the cartilages within the list of s'iveletal bones comes very near the truth, but It does not reflect the whole truth either. The fact is that the original Sushruta Samhita has passed through several recensions ; and we have reasons to believe that the present one by Nagarjuna is neither the only nor the last one made The redactors, according to their own light, have made man/- in terpbLitions in the text, and when Brahmanas, they have tried to come to a sort of compromise at points of disagleement with the teachings of the Vedas 12). Therefore it is that we come a cross such statements in the sample Vedas, but the science of surgery recognises three hundred skeletal bones." What lends a greater colour to the hypothesis is that Sushruta, who, in the Chapter on Marma Shariram, has so accurately described the unions of bones and ligaments, anastomoses of nerves, veins and arteries etc., obligatory on Government, is well as on private individuals, it was almost impossible to secure a full-grown anatomical subject in I'auranic India, the more so when we consider that the Hindus look upon the non-crema- tion and mutilation oi a corpse vvilii a peculiar horror as it prevents the spirit from purging off its uncleanness in the funeral fire, and bars ilf access to a higher spiritual life. Naturally in later and more cere- moniil times the interred corpses of infants, less than 2 \ears old, had to be unearthed and dissected for anatomical purposes; and these portions of the Sushruta SamliitS might have been modified by the subsequent commentators in order to conform them to occular proofs.— T. R. (i) See Tiray's Anatomy {1897) p. 2S8 and 301 Figs. 248 and 262. (2) "'?f^T*fgtw; vi?i': ^^rfij^: ^T^?nf" 1" \ishnu Smriti. Ch, 96. 55. (,'haraka. Shfiriraslli^nani. INTRODUCMON. , XXV must have described their courszs and locations, a,L? otherwise it would have been quite impossible for practical suigeons, for whom it was intended, to conform to the directions of the Samhita in surgically operating on their patients' limbs^, and to avoid those vulnerable unions or anastomoses as"'enjo'ned therein. These Marmas have been 'divided into three classes such as, the Sadya-prana-hara, and Vaikalya-kara, according as an injur}' to any of them proves instantaneously fatal, or fatal in course of time, or is followed b}-^ a maimed condition of the limb concerned. The fact is that the study of practical Anatomy was in a manner forbidden in the reig>n of Ashoka Pij-adarshi inasmuch as ail religious sacrifices were prohibited by a royal edict (i), and the subsequent commentators (who were also redactors on a small scale) of the Sushruta jSamhita, in the absence of any positive knowledge on the subject, had to grope their way out in darkness as best they could ; hence, this wanton mutilation of texts and hopeless confusion of verses in the Sharira Sthanam of the present day Sushruta Samhita, which should be re-arranged and restored to their proper chapters before any definite opinion can be pronounced on the anatomical knowledge of the holy Sushruta. Sushruta as a Biologist. — h⁺ the tirst chapter of his Sh.irira Sthanani. Sushruta discusses the guestion, why does he die at all ? Like all Indian philosophers. Sushruta argues the guestion down from the universe to man. The factors or laws, that govern the evolution of the universe in its phy- sical aspect, are extended to cover the evolution). There is but one law and one force which run through -the three plains of mind, matter and spirit. Physiology, that fails to loc^k (l) fournal of ihe.\siiiUc Society i.f CulciUla \'n\. \'U. P. 26f. XXvi \se of a disease. Contrary in character to the exciting factors of a disease. Contrary in character to the £sse of a disease. M^dhava NidSnam Ch I. V, 8. INTRODUCTION. ^ 1X1 those forms of mental or nerv; ous distempers fgr which Mesmer rightly now receives so n\uch honor. Since the creation of man, the tput'h of the "Saintly" has been credited with the virtue of curing the sick; and Av^feha (auto-hypnotism) and Samadhi (higher phases of ciairvoy- ance) have achieved many miracles in. the art of healing in India, which was the, first country where it was first successfully practised for the welfare of man. Samshodhanam and Samshamanam :- All kinds of treatment may be grouped under two heads such as Sam- shodhanam and Samshamanam, i.e. either the body should be taken to restore the deranged Vayu, Pittam and Kapham to their normal condition with the help of proper medicinal drugs without resorting to any eliminating process. But in cases of inflammation, Sushruta enjoins that, instead of any Sam- shamanam remedies, diaphoresis should be first resorted to. In cases where counter-irritants are indicated and in parts which are directly accessible,
leeching and cauterisation should be practised with a due regard to the season of the year and the requirements of the case. We find in his Samhita a detailed account of the several species of leeches with their habits. Forms of medicine: - Powders, lambatives, decoctions as well as medicated oils, Ghritas, confection and wines are the forms in "-hich, according to Sushruta, medicines should be given. The different di ugs such as roots, leaves, etc. should be culled in the seasons proper to each. Reclassified the soil into five different di ugs such as roots, leaves, etc. should be culled in the seasons proper to each. respective actions on the deranged morbific principles of the body. Rasavanam : - The Avurveda being the science of life and health, the holy Agnivesha, at the very commencement Ixii . INTRODUCTION, ot the therapeutical porticMi of his work.* has described several medicinal compounds, which improve general health and arrest the rayages of time. 'Theoretically speaking the sciehrce of the A3'urveda recognises no preordained limit to human fexistence. Life can be prolonged with the help of suitable medicines. By dint of observation and patient researches our Rishis devised maay such adjuncts which can rejuvenate an old man, and supply those vital elements to an old and exhausted human body, which ebb away with the progress of years. Hence, we find many rejuvenating medicines to have been prescribed for men in health which would arrest decay and guard against the approach of senility b}' increasing the fundamental vital principles of the body and preventing Vayu, Pittam and Kapham from being transformed into morbific diatheses. Diet — "A good and proper diet in disease is worth a hundred medicines and no amount of medication can do good to a patient who does not observe a strict regimen of diet." Our A'jairveda, instead of being content with specify- ing the nature of diet in diseases in general, mentions the names of articles, which should, or should not be taken in any specific malady, judged by the light of their properties ^J of aggravating Vayu, Pittam or Kapham. The dietic or therapeutic properties of a large number of articles of human consumption, as well as the chemical changes they undergo in the digestive apparatus of different mammals, have been studied and analysed, and so we find in our physique, medical Samhitas, such injunctions that barley- corns passed undigested with the fceces of a cow or flwi^ii' J?^t[z^^' ^^ n ^' x w Chaiaka Sanihit^t Chikitsrt Slli4nam Ch I,)NTKuDUC'?ioN. > Ixiii > horse, should foil the diet of 'a Prameha patielit * that the milk of a she-camel should be given to a patient suffering from a cutaneous aflFection, and that the flesh of any carnivorous beast or bird should be given to 'one suffering from pulmonary consumption and ' so on. It was a cardinal doctrine with Ayurvedic dietisls that the longing of a patient for any particular kind of food in a certain disease, emphatically shows that his organism is in want of those elements which enter into the composition of the article offered. Hence elaborate dietetics were formulated, which cannot but be acceptable to the most fastidious patient. ' Therapeutics:- The exclusiont of salt and water from the food of an ascites or anasarca patient as laid down in our Samhitas shows that our Rishi possessed a higher chemical knowledge regarding the effects of organic matter on the human system than many of us are ready to accord to these pioneers in medical Botany; — After therapeutics comes the subject of Medical Botany; — After therapeutics comes the subject of such exclusion has been lately demonsU-ated by the researches of Dr. Benjamin Horniman (Lectures, Sanitarium, Park si. London.) Charaka Chikitsha Sthanam Ch, XIIL ^bid Chap. 13. Charaka Chikitsha Sthanam Ch, XIIL ^bid Chap. 13. Charaka Chikitsha Sthanam Ch, XIIL ^bid Chap. 13. Charaka Chikitsha Sthanam Chap. 14. Charaka Chikitsha Sthanam Chap. 15. Charaka Chikitsha where we find si!ich nice subdivisions as r Agravija (whose toplings are only planted), Mulaja (whose roots only are planted), Parnayoni, Skandaja, Vijaruha (ger- minated from seeds) ^nd Sannurudhaja. But the botany of / Sushrnta is more of the nature of a "Materia Medica than / a work on Botany proper, though sometimes he mentions the habitat and describes the foliage of certain plants so that they may be distinguished from others of a cognate species. , ^ The uses of metals and 'minerals for therapeutical pur- poses in India are as old as the Rigveda * itself. Sush- ruta describes the methods of preparing oxides, sulphates or chlorides of the six metals as the case may be. Mercury has been only once mentioned in the Samhita and then very vaguely too. Processes for the preparation of alkalis and the lixiviation of ashes are very elaborately described. Beyond these the chemical knowledge of Sushruta scarcely extends. Hygiene and Public Health:— A? a writer of Hygiene and public health, Sushruta emphasises the importance of cleanliness of both sririt and body. Water whose disinfecting virtues have so often been hymnised in the vedas t forms the subject of discussion of an entire chapter of the Samhita. Outbreaks of epidemic have been attributed to contrary seasons, to the floating of minute ^/ particles of poisonous flower pollen in the air, and to the sin or unrighteous conduct of the community. Earthquakes, famines, and physical phenomena, which are at present attri- buted to magnetic disturbances of the earth, have been * Lead crystal (including diamond) gold and mineral poisons arc men- tioned in the I. i6. I. 29. I 55. and IV 10. of the Atharva Samhiti I. 23 s. 19, ' INTRODUCTION. IxV described by Sushi ut a as the usual precursors of devastating epidemics sucli as jilaque etc. Mortality among birds and an unusual death among rats and other presaging indications of a visi- tation by Providence. Interrogated as to the cause of such outbreaks, Dhanvautari observes that, the Viyu (molecular energy) of the soi' is disturbed or affected by earthquakes, and seasons of unnatural drought or deluge, deranging their Pittam (kinetic energy) and Shleshma (humidity) which produce morbific factors that affect a whole community. Sushyuta, as a true physician, has elaborately dealt with the regimen of diet and conduct during the different seasons of the year (Ch. 24 -U. T. 64) which, strictly followed, should act as a good prophylaxis against attacks of many epidemic diseases, being framed with a most careful regard to the conditions of life which obtain in it, and ward off those sad breakdowns in health, which are, in many instances, the result of an unsuitable mode of living in this country. Twofold division of Time &C :-- It is a fundamental dictum of Sushruta that in a case of medical treatment the then prevailing seasons, one based on the peculiar physical pheno- mena which distinguish the different seasons of the year, a fact which emphaticall}' proves that Sushruta was an inhabitant of the sub-Himalayan Gangetic Doab, the other is for the purpose of showing the respective accumulation, aggrava- tion and subsidence of morbific diatheses (Doshas). In the same manner the different guarters of the day and night have been minutely charted or set down to show the spontaneous aggravation and subsidence of the deranged Vayu, Pittam and Kaphah during the 24 l^ours. The!, influence of planets as to the production of certain maladies, the aggravation and 9 Ixvi INTRODUCTION. nonaggravation of certain existing disorders as well owe much of their origin to this potent factor. The vegetable kingdom from which we glean our daily food is also subject to thi? influence, and hence the discrimination we exercise in selecting our food on certain days of the lunar month. Countries have been divided into Jangala or A'nr.pa ac- cording as their physical features partake of the character of a dry plateau or of a swamp or marsh, a Sadharana one possessing features, which are common to both. Diseases, which are common to both. Diseases, which are common to both are spontaneously relieved in each of these kinds of countr}spring sanitariums. The virtues of the milk of a she-goat, she-buffFalo, mare, cow-elephant, or woman, as well as of any of their modifications such as curd, whey &c. together with the properties of the flesh and urine of the several groups of she-animals, which are indigenous to the land, were studied and analysed, thus placing at the disposal of a practical physician a list of dietary in different diseases to soothe the taste of the most fastidious patient, and which is at the same time potent enough to cure the distemper he is suffering from without the help of anj?^ special medicine. Thus it is that we find our Vaid\'as prescribing" the flesh of many carnivorous a