

dealing with the general question of the history of the Munda languages and of their connexion with Mon-Khmer. The other two checked consonants have hitherto been usually written *t'* and *p'*, i.e. as checked surds. It is very difficult to determine the exact sound of these letters. I believe that no foreigner has ever yet succeeded in mastering their perfectly correct pronunciation. Phonetists in Europe who have studied the question maintain, and apparently with reason, that they are surds; but some Indian authorities, and amongst them Father Hoffmann, prefer to show them as sonants, *d'* and *b'*. We hesitate to doubt the authority of one who is more familiar with the language than any other European, especially when he is a scholar like Father Hoffmann and is backed up by the statements of Mundaris themselves, but I may quote a parallel instance to show how doubtful the matter is. A friend who has an exceptionally well-trained ear, and who has made a study of the similar checked consonants in the cognate Kanauri language of the Punjab, says that they strike *his* ear as sonants, but that they *may* be surds. Other scholars in the Munda area, too, maintain strongly that the sounds are surds. I draw attention to this, not by any means to prove that Father Hoffmann is wrong, but to prevent difficulties being felt by students who may compare his work with that of his predecessors.

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STUDIES IN THE MEDICINE OF ANCIENT INDIA. Part I:
OSTEOLOGY, OR THE PARTS OF THE HUMAN BODY.
By A. F. RUDOLF HOERNLE, C.I.E.

This handsome volume, which has been published by the Delegates of the Clarendon Press and subsidized by the India Office, is another instalment of Dr. Hoernle's valuable

recent studies in the field of ancient Indian Medicine, with which the readers of this Journal are familiar.¹ It is impossible to do justice to the wealth of detail by which Dr. Hoernle's present work is distinguished, equally with his previous contributions to the history of Indian Medicine, and I can only point out some of its leading features.

The introductory part is chronological, and contains the important results of the author's elaborate researches into the history of some of the principal medical writers of India. A great deal of new light is thrown on the relation in which the original textbooks of Charaka and Suśruta stand to the recasts due to Dṛdhabala and Nāgārjuna (?). Dṛdhabala is shown to have been probably a native of Kashmir. With reference to Dṛdhabala's activity as a supplementor of Charaka, it may be mentioned, perhaps, as a confirmation from an independent source, that a Nepalese twelfth century MS. of Charaka, a transcript of which has been recently procured for me by Haraprasad Shastri, closes with the words *pariśiṣṭaṃ dārghabalaṃ* (r. *dārḍhabalaṃ*) *aṣṭamaṃ sthānaṃ samāptam*, i.e. "Here ends the supplement composed by Dṛdhabala, the eighth section." Vāchaspati's 'Mahamada Hammira' is happily identified by Dr. Hoernle with the Amir Muizzuddin Muhammad, the celebrated Muhamed Ghori of Delhi. 'Vāgbhaṭa I' and 'Vāgbhaṭa II' have also been placed in a new light, and if I still hold that the medical authority referred to by the Chinese pilgrim Itsing (seventh century) is Suśruta, not Vāgbhaṭa, it is not because I mistake the force of the argument taken from the title of Vāgbhaṭa's work ("Summary of the Octopartite Science"), but because the details mentioned by Itsing seem to point to an acquaintance with the contents of Suśruta's standard textbook rather than with Vāgbhaṭa's more recent composition.

¹ See this Journal, 1906, 283-302, 699-700, 915-941; 1907, 1-18, 413-417; also Archiv für Geschichte der Medizin, i, 29-40 (1907).

The second part, entitled "The Records," contains a very full discussion of the three different systems, in which the theory of the ancient Indians regarding the skeleton may be said to have been transmitted. In tracing the rise and history of this theory, the author has not confined his investigations to medical literature, but has ransacked the lawbooks, Purāṇas, and Vedic literature as well. None of the three versions of the Indian system of Osteology is free from glaring faults and incongruities, in his endeavours to elucidate which Dr. Hoernle had to grapple with formidable difficulties. No pains have been spared to procure available MSS. from India and elsewhere. Thus the osteological sections of Charaka, of the Yājñavalkya-smṛti, of the Viṣṇu-smṛti, and of Suśruta, have been edited, respectively, from 9, 16, 17, and 12 MSS., besides the printed texts, in the fourth part of the work, entitled "Apparatus Criticus," in which all the principal Sanskrit texts bearing on Osteology have been collected. This part furnishes a fine specimen of textual criticism, but it is in his remarks on Gangādhara's apocryphal version of Charaka's Osteology, which version has unfortunately gained general currency, and has passed into all the more recent editions of Charaka's textbook, including the handy Bombay edition by Sankara Shastri, that the author's critical skill and acumen are displayed to special advantage. The remarks on the original version of Suśruta's Osteology, which has also been replaced, at an early period, by a falsified substitute, are equally interesting.

The third or anatomical section consists of a careful survey and discussion of the entire anatomical system of Indian writers, compared with modern anatomy. Indian anatomists enumerate and describe no less than 360 or 300 bones, which large excess over and above the 200 bones or so in the adult human skeleton is chiefly due to their counting processes or protuberances as if they were separate bones. Dr. Hoernle's identifications of the

sometimes very curious Sanskrit designations of the bones in the human body, of which the lucid discussion of the term *jatru*, 'windpipe,' hitherto wrongly explained as denoting the clavicle or collar-bone, may be quoted as an example, seem to be well founded, particularly as he has made a special study of human anatomy, and has also enjoyed the benefit of expert advice in writing this essay. Sanskrit lexicographers should study his remarks as well as students of Indian Medicine, quite a number of difficult terms having been first cleared up by him. Thus the new etymology of the puzzling term *ghanāsthikā*, as being derived from Prākṛit *ghāṇa*, 'smelling,' or 'nose,' and meaning literally 'the smelling - bone' (p. 65), is very striking. The value of the anatomical section is greatly enhanced by copious and excellent illustrations, for most of which the author declares himself indebted to the skilful hand of his son.

In discussing the 'non-medical version' of Ātreya's System of Anatomy, Dr. Hoernle has found reason to reverse the hitherto prevailing theory of the dependance of Yājñavalkya's lawbook on Viṣṇu's, at least as far as the section on Osteology is concerned. The analogies between Viṣṇu's list of bones and the anatomical theories of Vijñāneśvara, in his commentary on Yājñavalkya, are indeed surprising. However, might it not be sufficient to say that the list of bones has been remodelled by Nandapaṇḍita, in accordance with Vijñāneśvara's theories, instead of attributing its first introduction into the text of Viṣṇu's lawbook to Nandapaṇḍita (seventeenth century)? Viṣṇu's theories on non-anatomical subjects are generally more archaic than the corresponding statements of Yājñavalkya, while the groundwork of both books is to a large extent identical.

Avinās Chandra Kaviratna's edition of Charaka is characterized as a simple reprint from the Berhampore edition of Charaka (p. 21). So no doubt it is, but, in

justice to Avinās Chandra, it may be observed that in the very recently published anatomical part of his English translation of Charaka (p. 805) he inveighs very strongly against the "erroneous readings of Gangādhar," and calls his list "entirely incorrect."

In view of the great rarity of MSS. of Chakradatta's Commentary on Charaka, it seems worthy of remark that a MS. of "Charakavyākhyā Chakradattiyā" is mentioned as existing at Alwar, in S. R. Bhandarkar's just published Report of a Second Tour in Search of Sanskrit Manuscripts (p. 57).

The great question regarding the originality of Indian Medicine and its relation to the medical theories of other nations of antiquity, notably the Greeks, has been touched upon in the Preface, which also contains an interesting osteological summary, of admittedly Greek origin, from the Talmud. A final solution of the problems connected with the origin of Indian Medicine will not be possible till every part of it has been investigated in the same thorough manner as Indian Osteology has been examined in the volume under notice. It is much to be hoped, therefore, that its author will soon be enabled to publish a sequel of this first volume of his "Studies in the Medicine of Ancient India."

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THE VĀSAVADATTĀ - KATHĀSĀRA, with two Appendices useful to candidates preparing for University Examinations. By M. T. NARASIMHIENGAR, B.A., M.R.A.S., Central College, Bangalore. (Srirangam: Sri Vani Vilas Press, 1907. Price 3 as.)

The author of this little work, a master at the Bangalore College, known as editor of the *Dinacaryā*, with commentary (1905), essays to adapt to educational uses the