

induction of each section of the armature, a certain amount of energy is used twice in each revolution to establish the current in it. *This energy is lost* so far as the external circuit or the effective output of the machine is concerned" (the italics are ours). This sentence shows that the author has never attempted to study the extremely complicated problem of commutation; it would, therefore, have been wiser to say nothing about it in an elementary text-book.

But we must stop, though we have by no means exhausted the various errors which mar the book. We have noted a few quite as glaring as those which have been adduced as samples. The book possesses some good features, notably the attempt to explain everything by considering the stresses in the medium; but it is so full of error that we feel bound to condemn it very strongly.

A. H.

Die Lehre vom Skelet des Menschen unter besonderer Berücksichtigung entwicklungsgeschichtlicher und vergleichend-anatomischer Gesichtspunkte und der Erfordernisse des anthropologischen Unterrichtes an höheren Lehranstalten. Bearbeitet von Dr. F. Frenkel. Pp. vi + 176. Mit 81 textfiguren. (Jena: Gustav Fischer, 1900.)

THE author has in course of publication, for use in the Gymnasia and Realschulen, a series of wall plates in which the anatomy of the human body is represented, and he has prepared the book now under consideration as a supplement to the plates which illustrate the skeleton. He devotes 176 pages to the description of the human skeleton, and includes an account of the joints which connect the bones with each other. He has adopted as the basis of his arrangement the plan followed by Gegenbaur in the "Lehrbuch der Anatomie der Menschen."

In the course of his description, Dr. Frenkel takes the opportunity of calling attention to the developmental changes which take place in the præ-ossific stage of the skeleton, as well as during the process of ossification itself, more especially in their bearing on the production of variations which, from time to time, come under the notice of anatomists. He contributes an interesting chapter on the variations in the number of vertebrae, more especially in the thoracic, lumbar and sacral regions, and explains the occasional occurrence in the dorsi-lumbar region of a vertebra which partakes partly of the characters of both these groups, and in the lumbosacral region of a vertebra which exhibits a transitional form between the lumbar and sacral series.

The opportunity is taken, from time to time, to point out the differences in arrangement and character between the human skeleton and that of the anthropoid apes, though in this respect many additional examples might readily have been given. It is, of course, impossible in a work of this kind to free the descriptions from technical terms and modes of expression; but the author, taking into consideration the class of readers for whom it has been written, has explained the meaning of the terms and, as far as practicable, has couched his descriptions in language to be readily apprehended.

De Paris aux Mines d'Or de l'Australie occidentale. By O. Chemin. Pp. 370 + 2 maps. (Paris: Gauthier-Villars, 1900.)

A DESCRIPTION of Western Australia from the mining point of view, illustrated with pictures characteristic of the scenes presented in a journey from Paris to Perth, and examined during short visits to other places in our premier gold-producing colony. The geography, population, government, mineral resources and gold fields of the colony are surveyed, and the condition and promise of individual mines commented upon. The author spent nearly a year in Westralia, and his book will direct the attention of his countrymen to an immense region, much of which is still little known.

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LETTERS TO THE EDITOR.

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Malaria and Mosquitoes.

INTERESTING letters by Mr. D. E. Hutchins and Mr. F. R. Mallet have recently appeared in NATURE, suggesting the possibility of there being some other route for infection in malaria besides that by the bite of Anopheles. Suggestions of this kind always appear to me to give rise to the questions, (a) whether the facts are really as stated? and (b) whether, if even this is the case, they cannot be explained by the mosquito theory? The notion that clearing jungle causes fever is very widely spread; but this does not prove that it is true. Granting that it is true, it may possibly be explained on the ground (a) that persons engaged in clearing jungle and laying out new plantations are not likely to be so well housed as those who live in established settlements; (b) that any hard labour encourages relapses of fever among coolies and others who have already been infected; and (c) that, as shown by Christophers and Stephens, jungle often contains large numbers of Anopheles. The frequent statements one sees, to the effect that malaria has prevailed largely when mosquitoes were few, are generally too vague to be of value, because it is not added whether the cases were relapses or fresh infections, or to what kind the "few" mosquitoes present belonged. When a man says that mosquitoes are numerous he generally refers to the genus Culex, which probably assert themselves more than do Anopheles. The idea that the water of the rivers of western India can cause fever when it is drunk is certainly opposed to my personal experience. In 1891 I went fishing with Mr. G. Tait, of Bangalore, in the River Bhawani, near Ootacamund. I remember that at the time I did not think that fever could be acquired by drinking such water, and I used daily to drink the unboiled water of this river (which flows amongst thick jungle). I remained quite free from fever, without taking quinine; but Mr. Tait was afterwards attacked. So far as I remember (but I am not sure), he had refused to drink Bhawani water; but I am not certain that his fever was malarial. Again, the idea that malaria is absent in the Nilgiri Hills round Ootacamund unless the soil is turned does not accord with my personal experiences. I acquired fever at Kalhutti (5000 feet above sea-level) in 1897, when I was investigating the disease in the Sigur Ghat. I thought at the time that I had acquired it in the plains below, but, in the light of our present knowledge, have little doubt that I became infected in the dak-bungalow at Kalhutti, where a succession of kitmutgars and their families had been taken ill. I noted particularly at the time that there was no freshly turned soil in the neighbourhood of the bungalow. Lastly, the case mentioned by Mr. D. E. Hutchins, namely that of a medically authenticated case of malaria being produced by fresh earth carried past a window in baskets by coolies, seems to me to be open to criticism. Which fact was medically authenticated—the fact that the patient suffered from malaria, or that his malaria was caused by the earth carried past in baskets? I can understand the first fact being certified by a doctor, but scarcely the second. How did the doctor prove that the fever was produced by the earth in the baskets? It seems to me that the only way in which he could have done so in a trustworthy and scientific manner would have been to infect a second person by having the baskets carried past a second time. I doubt whether such instances—and we see hundreds of them in the Press—will bear close examination. Those who cite cases of fever apparently due to freshly-turned earth, seem to forget that there are millions of people constantly engaged in digging without suffering from the disease more than others do.

Liverpool, February 25.

R. ROSS.

Abundance of Peripatus in Jamaica.

MR. P. H. GOSSE in the "Naturalist's Sojourn in Jamaica" (p. 66) makes the first reference to the occurrence of Peripatus in Jamaica, having found in 1845 five or six specimens near Bluefields, on the south-west coast of the island. Gosse regarded them as "rather allied to the Annelida than to the Mollusca." No further mention of the animal is made until it was rediscovered at Bath in 1892, nearly fifty years after, by a local naturalist, Mrs. Swainson. Seven Peripatus were sent to