

Our Bookshelf.

Forest, Steppe and Tundra: Studies in Animal Environment. By Maud D. Haviland (Mrs. H. H. Brindley). Pp. viii + 218 + 8 plates. (Cambridge: At the University Press, 1926.) 12s. 6d. net.

WITHIN the last dozen years the author has seen the tundra and coniferous forests of the Yenisei, the steppes of south-east Russia, and the luxuriant tropical forests of Guiana. From her observations she has put together a picture of animal life in these widely different environments; the different parts of the book are introduced and co-ordinated by a general account of the adaptation of living things to their environment.

The purpose of the book is to show the fauna, as a whole, in relation to the floral and physical environment, and it is interesting to contrast the account of the forest of Guiana with the books of Waterston, Bates, Belt, and the other 'naturalists.' They observed and described: the modern ecologist co-ordinates a greater body of fact, and has been trained in experimental methods, which form a mental background even if experiments cannot be carried out. We suppose that the ecologist of the present day will soon give place to students who use the experimental method more and more. One important result may be expected: nearly every ecologist believes in adaptation; will the next generation of ecologists be able to furnish experimental proofs of it?

With regard to the coloration of animals, the author takes a moderate view. She thinks that belief in protective coloration is often based on a study of colour without study of habit; the sandy lark betrays itself by twittering from the top of a stone. On the other hand, she accepts mimicry as the explanation of the shapes and habits of some membracid bugs of Guiana.

We are becoming familiar with books on ecology written, or so it seems, with a blue pencil, scissors, and a paste pot, the whole cemented to a framework of new terminology. The book under review spares us from that; it is written in plain English, which seems sufficient. We are inclined to criticise the use of English names for a variety of animals from many parts of the world. Only those who pursue zoology that they may solve cross-word puzzles could give an account of the suslik, the Tatar lark, the huanaco, barbet, and bobolink. "Jumping rabbit" is a cruel misnomer for *Alactaga*, which is near of kin to the jerboa.

The photographs of different types of country are beautiful; there should be more of them.

PATRICK A. BUXTON.

The Theory of Electricity. By Prof. G. H. Livens. Second edition. Pp. vi + 427. (Cambridge: At the University Press, 1926.) 16s. net.

THE first edition of Prof. Livens' "Theory of Electricity," published in 1918, was reviewed in NATURE in 1919 (vol. 103, p. 142), and therefore the present notice need only take account of the

changes introduced in the new edition. In its present form the book has been very much curtailed—from about 700 large octavo pages to rather more than 400 crown octavo pages—but the clear print characteristic of the series of the Cambridge University Press has been retained. A considerable amount of matter, relating principally to the detailed treatment of a considerable number of special problems, has been omitted in all cases where a full account is given in other books, but we are glad to note that the very careful and full discussions of fundamental principles and points of difficulty, so characteristic of the first edition of the book, have been retained in their entirety. Consequently, the work can be as highly recommended as before as an introduction to the theoretical side of electromagnetism, and in conjunction with such a detailed text-book as that of Jeans, gives as full an account of the theory in all its aspects as is to be found in any language.

In one point Prof. Livens has introduced a decided innovation on the usual treatment. He uses the term *magnetic force* for what is usually termed the *magnetic induction*, \mathbf{B} , reserving the term *magnetic induction* for the vector \mathbf{H} , which he regards as the derived vector. The main effect of this innovation appears in Chapter v., on the dynamics of the magnetic field, where the potential energy density of a distribution of magnetic polarisation of intensity \mathbf{I} is written as $-(\mathbf{I}\mathbf{B})$, in place of the usual $-(\mathbf{I}\mathbf{H})$. Thus a *negative* potential energy density is obtained instead of the usual positive value; when this is interpreted as *positive* kinetic energy of hidden motions, according to the usual method of Lagrangian dynamics, a result is obtained which is certainly more consonant with theories of the ultimate origin of magnetism than the usual result of the classical theory. To us it seems that the whole question is a very debatable one, and may very well be left to the future for its ultimate decision.

Potash: a Review, Estimate and Forecast. By Dr. J. W. Turrentine. (The Wiley Agricultural Series.) Pp. ix + 188. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1926.) 15s. net.

FIFTEEN years ago, America's entire dependence upon imported potash led her to initiate a survey of possible home sources of this essential substance, which was scarcely completed when the breaking out of the War emphasised the importance of developing domestic resources. In pre-War days, Germany practically held the monopoly of the world's potash supply, but afterwards, when France obtained possession of the Alsatian mines, an agreement was made whereby Germany dealt with 62.5 per cent. and France with 37.5 per cent. of American and other demands for potash. In 1922 the world consumption was 1,600,000 tons of potash salts, far below the limit of producing capacity of Germany alone. At present the price is below pre-War rates, and this has caused in America an almost entire deflation of the development of the potash industries which had arisen