

geology, which throws so much new light upon the subject, is almost completely ignored.

Mr. Jukes-Browne is not a biologist, and his remarks on the structure and affinities of extinct organisms are not always happy. The anatomist will hardly agree with such statements as the following (p. 437): "Of the mammals, *Coryphodon* and *Lophiodon* resembled the recent tapir; *Palaeotherium* and *Paloplotherium* were animals from which both the rhinoceros and the horse seem to have descended; *Hyracotherium* was a small animal combining characters now found in the peccary and the hyrax or Syrian coney." On the same page the snout of an alligator is inverted and called the lower jaw. Our author seems not to have heard of the great paleontological discoveries of the last twenty years on this side of the Atlantic, as he mentions only the mastodon, of which a wretched figure is given, and the mammoth.

It would, however, be very unfair to leave the impression that this is a carelessly written book. It is nothing of the sort, but, on the contrary, has been compiled with painstaking accuracy, and in many respects has been admirably done. While it cannot be recommended as a text-book in this country, it will prove of great service to investigators as a book of reference and comparison, containing much valuable information in a small space.

BERGHAUS'S ATLAS OF PHYSICAL GEOGRAPHY.

THE geographical institute of Justus Perthes in Gotha is publishing a new edition of Berghaus's 'Atlas of physical geography' ('*Physikalischer Atlas*'). Though the editor retains the name of the old edition of 1838-48 and of 1852, this is a totally new work, not one of the old maps being used in the new edition. The most eminent authorities in the different branches of physical geography contribute to this work, each department being intrusted to a specialist. Berghaus himself is the author of the hydrographical part, and to him is due the excellent execution of the work, which comes up to the standard we are used to apply to works published by Justus Perthes. J. Hann edits the meteorology; G. Neumayer, the part on terrestrial magnetism; von Zittel, geology; O. Drude, geography of plants; G. Hartlaub and W. Marshall, the distribution of animals; and G. Gerland, the ethnological part. The names of these scientists warrant that the material will be reliable, and in every respect be kept up to date. The maps are copperplate prints, and bear the date of publication. This way of re-

production will enable the publisher to have any desirable corrections made, so that we may be sure to see the maps always corresponding to the latest state of our knowledge. The economical use of space on the single sheets is really admirable. Map 16, for instance, contains the drainage-areas of the oceans, which are represented in Lambert's equivalent projection. These maps show the limits of ice-drifts, currents, deltas, and the navigable extent of rivers. On the same sheet we find eleven detail-maps showing the different kinds of bifurcations, and two diagrams showing the extent of land in different latitudes.

The general principle of the atlas is, first, to give maps of the earth and of continents, showing the distribution of physical phenomena; and then detail-maps, which are particularly illustrative of it. On the map showing the annual rainfall (No. 37) we may observe the influence of elevation and wind on detail-maps of Jamaica, Mauritius, and New Zealand. On the map of the German Ocean (No. 23) we find the various types of coasts, — the rias of the north coast of Spain, the downs of France and Germany, and the fjords of Norway. Diagrams show the temperatures of the ocean. This atlas is an indispensable work for the student of physical geography. Its systematically selected contents and excellent execution make it a worthy companion of Stieler's 'Hand-atlas' and Spruner-Mencke's 'Historical atlas.' As the editor does not give any preference to the physical geography of Europe, it is as valuable for the American student as for the European.

A CENTURY OF ELECTRICITY.

THOSE whose curiosity is excited by the presence on every street-corner of an electric light, and in every doctor's office of a telephone, in every railway-station of a clicking telegraph instrument, and yet have been unable to find time or opportunities for understanding how these things have been brought into existence, will find in Professor Mendenhall's little book, 'A century of electricity,' a trusty guide which will lead them by easy steps from the beginnings of a science of electricity towards the end of the eighteenth century, through the discoveries of Galvani, Volta, Oersted, Faraday, and others, to the present time. Professor Mendenhall's success as a writer is too well known to need especial praise in this place. The author has endeavored to sketch the growth of the science of electricity and its principal applications. The book is not a history of the science, nor is it a scientific treatise, and the use of technical language has been avoided as far as

A century of electricity. By T. C. MENDENHALL. Boston, Houghton, 1887. 16°.