In a relatively short time this insect has overspread a large area and has encountered various climatic conditions and the question at once arises as to whether these conditions have yet produced any appreciable effects. If, using the Colorado specimens as a type, we compare these quantitatively with specimens from other parts of the United States, the presence of several already well-marked varieties is shown. These are correlated closely with the climatic conditions of the several areas for the months of June, July and August. Without going into details at the present time, I shall simply mention the areas in which these incipient varieties are forming. In the northwest is found the well-marked 'Dakota type' which has spread over the Dakotas, Manitoba and parts of Wisconsin and Nebraska. In the southwest is the 'Texas type,' found in northwest Texas, Arkansas, Kansas and New Mexico. In the region about the Great Lakes there is the 'Lake type,' and in the northeast is found the 'New England type,' which covers New England and Nova Scotia, while in the southeast there are the 'Atlantic coast type,' and the 'Southern Appalachian type.'

These types are not as yet far removed from one another, nor are they easily seen on inspection. However, measurements show changes in dimensions and in coloration in the several areas, so that there can be no doubt that there are slowly forming several races of the beetle in different parts of the United States and Canada as a direct result of the diversity of environment. As 45,000 specimens from different parts of the United States have been studied the error from too few individuals is obliterated.

W. L. Tower.

THE EIGHTH INTERNATIONAL GEOLOGICAL CONGRESS AT PARIS.

The Eighth Congress of Geologists assembled in the *Palais des Congrès*, Thursday, August 16th, at 4 p. m. M. Karpinsky, retiring president, gave the opening address and was followed by the president, M. Albert Gaudry, in a cordial address of welcome. The geologists of the continent were well represented and appeared in full dress with all their medals and decorations. England and America were comparatively inconspicuous both in numbers and in attire.

The registration was 288 upon the second day. All the most distinguished geologists of Europe were in attendance. England sent an exceptionally small number. Among the Americans present were Messrs. Stevenson, Hague, Osborn, Ward, Willis, White, Cross, Scott, Todd, Kunz, Choquette, Adams, Matthew, Ries, Willmott, Rice; the three first named were chosen as vice-presidents. M. Barrois closed the first session with reports upon the program and upon the geological excursions which were arranged in a most admirable manner before, during and after the congress. On the same evening a delightful reception was given by the Geological Society of France in their new quarters, Rue Danton 8. On Friday morning the section of geology and tectonics, presided over by M. Geikie, held its first session, with communications by Geikie, Chamberlin, Joly, Lapparent, Munier-Chalmas and Roland. In the afternoon the section of mineralogy and petrography listened to a report of the petrographical commission by M. Lacroix. In this connection may be mentioned the fact that during the Congress plans for an international petrographical journal were successfully matured.

On Saturday at ten o'clock the Section of Applied Geology met under the direction of M. Schmeisser, and at one o'clock M. Zittel presided over the first session of the Stratigraphy and Paleontology. The important business of this session was the discussion of the final report of the strati-

graphical commission which was presented by M. Zittel in the absence of its chief advocate, M. Renevier; difference of opinion chiefly concerned the proposed substitution of the terms Paleozoic, Mesozoic and Cenozoic for Primary, Secondary and Tertiary; when this proposal was practically withdrawn by M. Bertrand the report was adopted. The Congress adjourned to a reception by M. and Mme. Gaudry in the new gallery of Paleontology in the Jardin des Plantes. The installation of fossils and vertebrates in this gallery and the comparative anatomical museum on the lower floor rearranged by M. Filhoz were greatly admired. Sunday, Monday, Wednesday, Friday and Sunday following were devoted to very attractive excursions to the classic horizons in the neighborhood of Paris and to the scientific features of the Exposition, while four more days were assigned to the work of the Sections, including the closing session of Monday, August 27th.

The papers were successively brought together in groups as follows: general geology, petroleum-bearing rocks and paleozoic succession, geology of Syria, Africa and Madagascar, petrography and vulcanism, glacial phenomena and report of international commission on glaciers, report on nomenclature and the geological chart of Europe, geology of North and South America (communications by Osborn, Scott, Matthew and Walcott). Among matters of detail the following deserve mention: the award of the 'Leonide Spendiaroff international prize' to M. Karpinsky, who insisted upon transferring the money award to some young French geologist; the announcement by M. Keilhac of a new geological review, the *Geologisches Centralblatt;* the selection of Vienna as the meeting place for the ninth congress.

The unbounded hospitality of the government, of the Exposition authorities and of the members resident in Paris was greatly appreciated and enjoyed. The President of the Republic invited all the *Congressistes* to a charming afternoon reception and open air theatricals in the garden of the Elysée palace. There was also a liberal distribution of seats and boxes in the national theatres. M. and Mme. Gaudry and Prince Roland Bonaparte gave two evening receptions. On Saturday, August 25th, an elaborate banquet was given by the French Geologists in the new *Hôtel du Palais d'Orsay.* The excursionists also were indebted for liberal reductions in fare made by the French railroads. Socially the Congress was a great success, the receptions as well as the intervals between the sessions affording abundant opportunities for personal intercourse, and it is well recognized that this, rather than the presentation of long and serious papers, is the chief end of a congress. At the same time it was felt by many present that several of the papers presented were not of a high order or general character and should not have been admitted at all, and that the time arranged for discussion was insufficient. The scientific spirit was naturally somewhat disturbed by the proximity of the Exposition and the *Salle des Congrès* itself was not well suited for the meetings in point of acoustics or apparatus. But for these features the French geologists were not responsible and, with one or two minor exceptions, the arrangements over which they had complete control were excellent. This is especially true of the excursions which were admirably prearranged and conducted; the *Guide Géologique de France,* prepared for the twenty great and many lesser excursions, is really a voluminous treatise and resumé of the most recent geological researches in France, attractively illustrated by 372 figures and 25 plates; it sets a new standard for future congresses.

All who attended the Congress felt more than repaid for the journey to Paris and deeply indebted to the genial President, Professor Albert Gaudry, to the indefatigable and much beloved Secretary, Professor Charles Barrois, and to his associates, Messrs. Thévenin, Von Arthaber and Zimmermann.

H. F. O.

SCIENTIFIC BOOKS.

Introduction to Zoology. By Charles Benedict Davenport and Gertrude Crotty Davenport. New York, The Macmillan Co. 1900. Pp. xii + 412; 311 illustrations. Price, $1.10.

The purpose of this new text-book, as indicated by its secondary title, is that of 'a guide to the study of animals for the use of secondary schools.' Unlike most of its predecessors among zoological books for secondary schools its title is not misleading, for the book is sent forth not as an 'elementary zoology' but as an *introduction* to the study of animals. It does not pretend to be a treatise on 'zoology' from the varied aspects of comparative anatomy, embryology, and physiology, but rather it attempts a presentation of facts which may well pave the way for advanced study of the special sub-sciences of zoology. But in addition to writing an introduction for students who may go deeper into zoological studies, the authors have recognized the important fact that 'the vast majority of secondary students, are not to be zoologists, but rather men of affairs.' Although this view has been gaining recognition in recent years, this is the first text-book which seems to have been planned with consideration for the needs of the 'vast majority' who are limited to a short elementary course in zoology.

Contrasted with the elementary books on zoology which have appeared during the last decade, the plan of this book is decidedly new; for it places no emphasis upon comparative anatomy, which has strongly characterized recent zoological teaching in most secondary schools. There is no description of internal structure of animals, and consequently no discussion of fundamental physiological processes. The book deals with common animals, and their habits, homes, their life histories, and their systematic, economical and ecological relations. In short, the book is a *modern* Natural History full of the spirit and the charm which characterized the old-time books on that subject.

As a text-book the 'Introduction to Zoology' is intended to accompany the well-known outline of laboratory study in zoology which Professor Davenport prepared several years ago, and which was published as an 'Outline of Requirements in Zoology,' Lawrence Scientific School, Harvard University. A revised reprint of this outline forms an appendix to the book. The order of treatment in the text follows that of the outline for laboratory work, beginning with insects and following with other arthropods, worms, mollusks, echinoderms, cœlenterates, protozoa, and the vertebrates.

Considerable attention is given to classification. Twenty chapters have appendices with keys for identification of common families and orders. Both common and scientific names of animals are freely used in the text, and footnotes give the meaning and derivation of the technical names.

The book is liberally illustrated both by figures from well-known works and by numerous new photographs of the natural objects. With regard to the photographs it must be regretted that many are imperfect and do not well illustrate. One feels convinced that good outline drawings would in many cases have been more instructive, particularly in the case of small animals like insects. However, many of the photographs are excellent and add a charm to the book.

On the whole the book is written in an entertaining style, and can scarcely fail to arouse interest concerning our common animals. The authors have well presented the natural history aspect of zoology. Teachers who read the book will probably agree that for liberal secondary education no other phase of zoology would be more important, but many readers will doubt the wisdom of omitting from secondary education all reference to the essential facts concerning the internal structure and the fundamental physiological processes of animals.

The book will surely find a place in secondary