hunter these and other descriptions of strange and unusual forms of life are fascinating.

Several pages are occupied by general observations, with an interesting discussion of the origin of cave life. The latter is treated under three questions: (1) How did these animals get into the caves? (2) What was their condition when they entered? (3) How have they reached their present state? Answering these inquiries the author argues that cave animals originated from outside forms, being predetermined to such cave conditions as suited them; that, at first, they differed slightly from similar forms, but were better adapted than they for subterraneous existence; and that they reached their present condition by gradual adjustment to environment, modified by cumulative variations due to heredity.

Taking the monograph as a whole, Mr. Banta is to be congratulated on having given a most commendable example of what can be done by an exhaustive study of a small cavern, and on having thus made a valuable contribution to scientific literature.

Horace C. Hovey

SCIENTIFIC JOURNALS AND ARTICLES

Terrestrial Magnetism and Atmospheric Electricity for March contains the following articles: "L'Observatoire Magnétique de Zi-ka-wei," by J. de Moidrey; "Carnegie Institution Comparisons of Magnetic Standards during 1908," by J. A. Fleming and J. C. Pearson; "The Carnegie Institution Marine Collimating Compass," by W. J. Peters; "Some Problems in Radioactivity," by A. S. Eve; "Peculiar Magnetic Disturbances in December, 1908," by D. L. Hazard.

The American Naturalist for March contains the papers read at the Darwin Memorial Session of the Baltimore meeting of the Botanical Society of America, held December 29. These papers are: "Darwin as a Naturalist: Darwin's Work on Cross Pollination in Plants," by William Trelease; "Darwin's Influence upon Plant Geography and Ecology," by Frederic C. Clements, and "Darwin's Work on Movement in Plants," by Herbert Maule Richards. In addition there is "An Examination of Darwin's 'Origin of Species' in the Light of Recent Observations and Experiments," by Edwin Linton. Edward M. East discusses "The Distinction Between Development and Heredity in Inbreeding," and T. H. Morgan describes some results of "Breeding Experiments with Rats," the species being *Mus rattus, M. alexandrinus* and *M. decumanus*. Among the "Shorter Articles" is a note by Roy L. Moodie, stating that in parts of the Niobrara River the chub, *Semotilus,* has acquired the habit of feeding on the horn fly that infests cattle, follows up the cattle and captures flies by jumping and picking them from the animal's sides.

Bird-Lore for January-February contains articles on "The Hollow Tree," by Ernest T. Seton; "The Feud of the Crows and the Owl," by Frank M. Chapman; "Birds seen in Prospect Park, Brooklyn," by Kate P. and E. W. Victor; "Notes on Pacific Coast Shore Birds," by John T. Nichols, and the eighth and last paper on "The Migration of Flycatchers," by W. W. Cooke. The Ninth Christmas Bird Census gives the results of observations from a large number of localities and the "Report of Audubon Societies" records the painful fact that two Audubon wardens have been brutally murdered. This illustrates the character of some of the men engaged in "the feather business." It used to be said that each elephant tusk cost the lives of three men and we await statistics on aigrettes.

In the *American Museum Journal* for February Roy C. Andrews describes "A Summer with the Pacific Coast Whales," illustrated with some remarkable views from life. E. O. Hovey tells of "St. Pierre and Mt. Pelé in 1908," giving some illustrations showing how rapidly vegetation is springing up over the region devastated by the eruption of 1902. New exhibits have been arranged illustrating the industries of the California Indians, and it is noted that the museum has acquired the Waters collection of Fiji objects.

On February 28 a Brazilian tapir was born at the National Zoological Park, Washington, D. C., making the fifth of this species that

has been born there. The period of gestation was 401 days; in another instance it was 395 days. The little tapirs have been strong and were raised with comparatively little trouble.

NOTES ON ENTOMOLOGY

THREE more volumes have been issued by the Indian government in the series "The Fauna of British India." Two are on the Coleoptera. Volume I. is on the Cerambycidæ, by C. J. Gaham (329 pp., 107 figs.), and deals with nearly one half of the longicorn beetles of India. They are arranged in four subfamilies—Cerambycinæ, Lepturinæ, Disteniinæ and Prioninæ. Nearly 400 species are described. Vol. II. (Coleoptera), on the Chrysomelidæ, is by the late Martin Jacoby (534 pp., 172 figs., 2 colored plates). He arranges the forms in five divisions: Eupodes, Cyclica, Camplosomes, Trichostomes and Cryptostomes. The species of the last two divisions are not treated in this volume; the Trichostomes include the Halticinæ and the Galerucinæ. Over 900 species are described, many of which are new. Volume IV. of the Rhynchota (Homoptera and appendix, 501 pp., 282 figs.) is by Dr. Distant. It contains the families Membracidæ, Cercopidæ and Jassidæ; the appendix is mostly on the Pentatomidæ. In this volume 665 species are described, bringing the total number of Hemiptera described from India up to 2,768.

MR. EDWARD CONNOLD has published on the British oak galls a companion volume to his work on British vegetable galls.[1] There are chapters on the growth of galls, characters and habits of the Cynipidæ, the British oak, and collecting and mounting oak galls. There is, under each species, a succinct statement comprising the English name of the gall, the position of the gall, the manner of growth, color, size, time of year, whether with one or many larvæ, where larva pupates, time of issuance of fly and parasites and inquilines. The insects are not described. Fifty-four galls of Cynipidæ are treated, and two of other insects. The plates are photographs of the various galls, often showing much variation in shape.

MR. R. E. TURNER has completed a revision of the Australian species of a peculiar family of Hymenoptera, the Thynnidæ.[2] This family is extremely abundant in Australia, about 400 species being known, over 120 of which are described as new by Mr. Turner. Very little is as yet known of their life history; a few bred from underground pupæ of Lepidoptera or Hymenoptera. The author severely criticizes the classification of Ashmead, but adopts most of the genera of Guèrin and Westwood. The characters at present used for the genera are found mostly in the sexual organs; a better classification must await the discovery of characters associating the sexes. Mr. Turner excludes from this family the genus *Anthobosca,* which he considers more related to *Myzine.* With the exception of the genus *Ælurus* the South American Thynnidæ are of different genera than the Australian.

PROFESSOR WHEELER has written a most interesting comparative study of the ants of Europe and North America.[3] He shows that there are fully twice as many kinds of ants in the United States as in Europe. In both countries the ant-fauna is composed of two elements, the boreal and the tropical. The former is very similar in the two regions, but the latter is very divergent, owing to different origins. The difference in nidification of similar ants in Europe and North America is considered due to the amount of sunshine; and it is shown that nests are more abundant in the interior of our country than in the eastern states. There is a summary of the fossil ants of the two countries; a chapter on the parasitic ants of Europe and on the myrmecophilous insects.

MR. W. SCHULTZE has an interesting article on the young of certain leaf-beetles of the

[1] "British Oak Galls," London (Adlard & Son), pp. 170, 68 plates, 1908.

[2] "A Revision of the Thynnidæ of Australia," *Proc. Linn. Soc. N. S. Wales,* XXXII., pp. 206–290, 1907; XXXIII., pp. 70–256, 1908.

[3] "Comparative Ethology of the European and North American Ants," *Journal f. Psychologie u. Neurologie,* XIII., pp. 404–435, 1908, 2 double plates.