The American Naturalist for March contains illustrations of some remarkable forms of deep sea fishes dredged by the U. S. Steamer Albatross at depths varying from 700 to 1500 fathoms and recently described by Dr. G. Brown Goode and Mr. Tarleton H. Bean in the Proceedings of the U. S. National Museum. The genera have been named Hariotta, Rondletia and Cetomimus.

M. L'ABBÉ MAZE has communicated to the Paris Academy an account of the earliest meteorological observations made in France. They were carried out by the astronomer Boulliau from the 25th of May, 1658, to 19th of September, 1660. The winter was unusually cold, whereas April was warmer than in any recent year, excepting April, 1865. M. Maze also shows that Boulliau used a mercury thermometer 62 years before Fahrenheit's invention.

SOCIETIES AND ACADEMIES.

NATIONAL GEOGRAPHIC SOCIETY.

AT the regular meeting of the National Geographic Society in the large hall of Cosmos Club, Washington, D. C., Friday evening, April 19, Mr. Robert T. Hill, of the U. S. Geological Survey, delivered an address upon the Geography and Geology of Costa Rica and Panama. The fact that he has only recently returned from a tour of scientific investigation of the region, during which he saw a good deal of the prevailing revolutionary spirit, gave special interest to his remarks.

Grateful acknowledgment was made for the opportunity to study the geology of the adjacent continental and island areas furnished the speaker by the enlightened liberality of Prof. Agassiz.

Mr. Hill's lecture, illustrated by a large number of very interesting lantern slides, mostly from photographs taken by him during his recent trip, was partly popular and partly technical in character, descriptive of the topography, vegetation, products, architecture and customs of the widely contrasting regions of the Isthmus of Panama and the modern Spanish American Republic of Costa Rica to the northward.

The Isthmus was discussed as a type of the low-lying costal lands of the tropical region, where Caucasian population could only be maintained by constant immigration, and which would be uninhabited did it not lie in the track of commerce between two oceans. All of its population, except a few unconquered Indian tribes, is concentrated in the two seaports of Colon and Panama, or along the right of way of the railway and canal. On either side it is still an unconquered jungle. The important commercial and political American interests in this region were discussed, showing that its traffic is entirely in the control of Americans, and that it is an important point between our Atlantic and Pacific sea-ports.

Costa Rica, on the other hand, is an example of the higher and better climatic conditions existing in the Tropical American region, where indigenous civilization flourishes under healthy climate conditions. Mr. Hill spoke of this as an ideal country and praised the hospitality and progressive spirit of the people. Illustrations were given of the entire course of the Panama canal, showing the topography, cuttings, machinery and laborers at present working upon the construction. While not committing himself to any preference of canal routes, he said that the affairs of the Panama Canal Company had been painted in this country much darker than they deserved. A far greater amount of work had been accomplished than is supposed. The machinery instead of rotting is kept in the best of condition and the affairs of the Company are not as hopelessly involved as represented. A liberal sum is still in the treasury, and while the concern is in the hands of the courts, it looks as if the French had no intention, after having completed

the hardest part of the canal construction, of abandoning it. The terminal port facilities have been completed. Nearly 25 miles of the canal is finished, reducing the distance between the oceans from 47 to 22 miles; about two-fifths of the necessary grading has been accomplished, and every possible machine and tool for its completion is upon the ground. The great problem of controlling and diverting the waters of the Chagres has also been accomplished. It is the general opinion of all Americans who have observed the work, including the engineering of our own famous Cabin John Bridge, that no great obstacle stands in the way of the early completion of this work except the recuperation of its financial affairs from the shameful mismanagement they have suffered.

The lecturer gave interesting accounts of the various zones of vegetation seen in ascending the great volcanoes of Costa Rica, and, incidentally, a general description and classification of the region bordering the Gulf and Caribbean Sea. Especial attention was called to the important bearing of this Spanish American region, between the latitude of the Orinoco and the southern boundary of the United States, upon the great problems of continental development, and its correlated biologic and meteorologic problems; and to the great work Prof. Alexander Agassiz has undertaken at his own expense in studying the marine physiography of the region, especially as regards the origin of its vast areas of coral reefs.

The relief of this portion of the earth's surface, a knowledge of which involves a study both of the land and the submarine topography, was provisionally classified into four great divisions: mountains of accumulation; mountains of corrugation; coastal plains of uniformly uplifted marginal sea-bottom, and land formed by the combined action of coral polyps and wind and tide (as described by Prof. Agassiz). In speaking of the mountains he classified the systems as follows:

1. The southern extension of the Cordilleran region of the United States, which terminates with the great scarp of the Mexican plateau in the latitude of Vera Cruz.

2. The Andes proper, the north and south ridges of which end abruptly in Northern Colombia.

3. A system of more ancient mountains having an east and west trend and composed of folded Mesozoic rocks, with Paleozoic axes, extending along the north coast of South America (between the Caribbean and Orinoco); throughout the Greater Antilles; and through Guatemala, Nicaragua and British Honduras. For this Mr. Hill proposed the name of the 'Antillean System.' It was shown that there were submarine topographic ridges connecting the Honduras peninsula with the islands of Jamaica, Hayti and Puerto Rico, probably also parts of this ancient corrugation.

4. Protuberances of older volcanic accumulation, such as the Windward Islands and Isthmian region.

5. Mountains of recent volcanic accumulation, including the three widely separated groups, with different trends, of southern Mexico, Central America and the northern Andes, all more or less parasitic upon the termini of the antecedent and fundamental mountain systems of corrugation, and to a certain extent (owing to their newness and greater mass) concealing them.

Everett Hayden,
Secretary.

Biological Society of Washington.

At a meeting on April 6th, Dr. Theo. Gill read a paper 'On the Torpedoes.'

The subject was discussed from two points view, taxonomic and nomenclatural.

The family of Torpedoes, or cramp fishes, is well differentiated from all others by the development (from original muscular tis-

sues) of a pair of electric batteries in the region between the cranium and anterior extension of the pectoral fins. The family is divisible naturally into three sub-families which should be called Narcobatinæ, Narcininæ and Hypninæ. These sub-families are differentiated by modifications of the cranium and skeleton generally, disk, tail, position of spiracles and structure of teeth. The nomenclature involves a singular point. The name *Torpedo* was first applied (by Forskal in 1775) as a generic term to the electric catfish of the Nile subsequently called *Malapterurus*, and was accompanied by a tolerable generic diagnosis. (The full history and etymology of the word *Torpedo* was given.) Therefore *Torpedo* must be used for the Nematognath fish. The electric ray must consequently receive another name, and *Narcobatis*, of Blainville, is therefore available. The genera would then have the following names: *Narcobatinæ*, with Narcobatis and Tetranarce; *Narcininæ*, with Narcine, Discopyge, Narbe (Astrabe) and Temera; *Hypninæ*, with Hypnos.

Mr. L. O. Howard cited the name Tarantula as a similar case in which a generic name had long been misapplied. It was first given to a scorpion, and after long service as the name of a spider it has recently been restored to its original meaning. Dr. W. H. Dall and Dr. C. Hart Merriam both agreed that in all such cases the strict law of priority should govern.

Major J. W. Powell spoke on the Classification of the Subject-Matter of Biology and the paper was discussed at length.

FREDERIC A. LUCAS,
Secretary.

ACADEMY OF SCIENCE OF ST. LOUIS.

THE Academy held its regular meeting on April 15 with President Green in the Chair and twenty-nine members and visitors present.

Miss Mary E. Murtfeldt read a paper on 'Habits of Certain Seed Feeding Insects,' giving the result of her observations and experiments with insects which feed upon the seeds of weeds and other injurious plants. Some of these insects were new to science. Miss Murtfeldt stated as her conclusion that the seed feeding insects exercise a very pronounced effect in preventing the spread of weeds, and in many instances almost exterminate them.

A. W. DOUGLAS,
Recording Secretary.

SCIENTIFIC JOURNALS.

BOTANICAL GAZETTE, APRIL.

Issued April 20, 1895. 64 pp., 2 pl.

Present Problems in the Anatomy, Morphology and Biology of the Cactaceæ: W. F. GANONG.

This is the first installment of a paper (to be concluded in the May number) setting forth in brief statement what is at present known of this group in regard to the topics enumerated in the title, and the problems, mainly to be solved by careful field observation and a study of development, which still remain to be worked out.

Flowers and Insects, XIV.: CHARLES ROBERTSON.

In this paper and its predecessor (Bot. Gaz. **20**: 104, Mr. 1895) Mr. Robertson has somewhat changed his plan of contributions to the relations of flowers and insects, in now bringing together his information in regard to the several species of a genus, accompanying it with a voluminous bibliography. Species of Gentiana, Frasera, Phlox, Lithospermum, Physalis and Mimulus are discussed.

Notes From My Herbarium, II.: WALTER DEANE.

The herbarium of Mr. Deane is one of the finest private collections in this country in the excellence and completeness of the plants represented, viz., those of the range of Gray's Manual. It is specially rich in