Hadley's *Concerning the Cause of the General Trade Winds*, originally published in the Philosophical Transactions in 1735. This paper, although very short, was one of very great importance in relation to the theory of the trade winds. Hadley's explanation of the direction of these winds, which he rightly ascribed to the deflective effect of the earth's rotation, was not complete or accurate, yet his theory is commonly found given in many books of the present day. The paper was distinctly epoch-making, and, as such, is well deserving of a place in Dr. Hellmann's admirable series. The notes in the Hadley reprint are as full and as suggestive as in the other numbers.

The publishers of the *Neudrucke* are Asher & Co., of Berlin, but we are informed that Dr. Hellmann has sent over several copies of each of the last two volumes to Mr. A. Lawrence Rotch, Readville, Mass., in order that Americans may be saved the trouble of writing to Europe for them. The reprints may be obtained at cost price on application to Mr. Rotch, the price of *Die Bauern-Praktik* being $1.75, and that of the Hadley reprint 50 cents.

R. De C. Ward.

SCIENTIFIC JOURNALS.

PSYCHE, JUNE.

The body of the number contains but a single short article, in which J. W. Folsom describes and figures a new Thysanuran which he regards as representing a new genus and family, Neelidæ. Two supplements are added, in one of which T. D. A. Cockerell continues his descriptions of new species of bees of the genus Prosapis, mostly from Colorado and Nevada; in the other F. C. Bowditch gives a list of 674 Coleoptera found on Mt. Washington, N. H., both above and below the timber line, with brief notes.

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON, 262D MEETING, SATURDAY, MAY 16.

The evening was devoted to the discussion of *The Fauna and Flora of the Islands off the Coast of Southern and Lower California, Including the Gulf of California.*

Dr. E. L. Greene discussed in brief the flora of the islands. The entire group, from Guadalupe, off the coast of Mexico, lying a hundred miles or more distant from the mainland, to those forming the channel of Santa Barbara and holding distances of only thirty and forty miles from the Californian shore, is a remarkable group among continental islands, as presenting in its flora so many points of divergence from that of the adjacent mainland. The islands of the Atlantic seaboard, even those lying farther out at sea than do any of those of the Cailfornian coast, yield only such genera and species as are common on the continent. But in the case of the Mexico-Californian group there are not less than fifty good species already known which are absolutely peculiar to the islands; some of them representing even generic types, like *Lyonothamnus*, consisting of two very distinct species —one a large shrub, the other a small tree— with no very near relatives in any other part of the world. *Crossosoma*, another genus of shrubs, has one fine species indigenous to several islands, with none on the immediately neighboring mainland, though a second small and insignificant member of the genus occurs away beyond the continental mountain ranges, on the verge of the deserts of the distant interior. And this insular genus *Crossosoma* is almost more than a genus. It probably represents a natural order, some authors referring it to the Dilleniacæ, the genera of which are all Australian and South American, others placing it provisionally in the Papaveraceæ, while in character it is different from either family. The most surprising case of entire divergence from continental flora is that of four very strongly marked species of *Lavatera*, which are scattered up and down the archipelago, while not a single species is indigenous to the American continent, either North or South, all the generic allies of these fine shrubs being of the flora of the Mediterranean region, with the exception of three or four, which are confined to remote and truly oceanic islands.

Another and negative point of divergence between the insular and mainland floras is the almost or quite total absence from the island of representatives of certain of the most prevalent mainland genera, such as *Ribes Lu-*

pinus Astragalus Potentilla Horkelia and many more. Equally remarkable and interestingly suggestive is the fact that certain trees, shrubs and herbaceous plants, long known as extremely rare, or quite local, on the mainland shores—such as *Pinus Torreyana*, *Malacothrix incana* and *Leptosyne gigantea*—have more recently been found to occur in the most luxuriant abundance on these outlying islands. Their rare occurrence on the continental shore is at just those points where their seeds would naturally land if drifted across from the islands. The conclusion is unavoidable that, in so far as these belong to the continental flora, they have been given to it from the islands, these latter being their original habitat. In a word, the character of this insular flora departs from almost all known rules, and in so far that, viewed as to their flora, the whole group seem like oceanic islands crowed over against the border of a continent.

The land mammals of the islands were discussed by Dr. Edgar A. Mearns, who enumerated, in addition to the genus *Homo*, twelve genera and upwards of twenty species of native terrestrial mammals which are at present known to inhabit the islands off the coasts of southern and Lower California, and alluded to others remaining to be described by the energetic and adventurous naturalist, Mr. Walter Bryant, whose explorations of Guadalupe, Cedros, Esperito-Santo and the other islands off the Pacific and Gulf coasts of Lower California are so well known to naturalists.

Dr. Mearns described and exhibited specimens of a new mouse (*Peromyscus*) and a new kangaroo rat (*Dipodomys*) recently collected on Tiburon Island, in the Gulf of California, by Mr. J. W. Mitchell, who accompanied Prof. McGee on his latest expedition. He also remarked upon the close relationship existing between the island mammals as a whole and those of the neighboring mainland, insomuch that their origin from the latter could be readily traced in each instance, though none are actually identical, thus furnishing a plain and striking illustration of the evolution of species.

Of domestic animals, the goat, sheep, cow, donkey, dog, cat and house rat have been introduced on one or more of the islands, and, in several instances, some of them bid fair to destroy the native fauna or flora of certain islands.

In the discussion which followed this paper, Dr. C. Hart Merriam added a genus to the known mammal fauna of these islands, a species of the little spotted skunk (*Spilogale*) having been taken on Santa Catalina Island, one of the Santa Barbara group.

A skin of the Western Desert mule deer, (called '*Burro*'), was sent to the Society for examination by Prof. W J McGee, who obtained the specimen in the Sierra Seri Sonora. Dr. Mearns had also found this deer on the Western desert tract, both east and west of the Colorado river.

Mr. Harry C. Oberholser spoke briefly of the birds of the island, calling attention to the number of subspecies which were evidently descended from continental forms.

F. A. LUCAS,
Secretary.

GEOLOGICAL SOCIETY OF WASHINGTON.

AT the 50th meeting of this Society held May 27th, the last meeting until next fall, the following papers were read and discussed:

Texture and Structure of Soils: By PROF. MILTON WHITNEY, of U. S. Department of Agriculture. The following forces are usually spoken of as the principal ones in the disintegration of rocks and the formation of soils. 1. Changes of temperature. 2. Moving water or ice. 3. Influence of vegetable or animal life (shades the land; admits air; solvent action of the roots; chemical action of decaying organic matter, earthworms and bacteria). 4. Chemical action of air and water. 5. Oxidation and hydration. Attention was called to the fact that all of these forces, except the solvent action of water and hydration, are largely superficial and would not act at any considerable depth. They certainly can not explain the disintegration of rocks to a depth of 50 or 75 feet as is seen in the crystalline areas at the south. If the solvent action of water has been the main cause of the disintegration of rocks, then 50 per cent. of the rock must have been dissolved and carried away. If the

rock has been split up by mechanical means into the minute grains of sand and clay then the resulting material must have swelled to twice its original volume. Lantern slides were exhibited showing the shape of soil grains and the relative size and surface area, and to illustrate some of the physical properties of sand and clay. Slides were also shown illustrating the texture of soils, and the economical importance of this subject in the distribution of crops was pointed out, the texture of soils adapted to many of the principal crops being shown.

By the structure of soils is meant the arrangement of the soil grains. This has an important geological bearing and a very important economic side. Slides were used to show grains of soil unflocculated as they exist in a puddled clay and flocculated as they exist in a loam soil. The effect of this on the relation of soils to rainfall was explained and the economic importance of the difference in the conditions maintained by the soils owing to the difference in the structure was pointed out.

Topographic Nomenclature of Spanish America. Mr. Rob't T. Hill, of the U. S. Geological Survey, read a paper upon the names given by the Spanish people to the topographic features of the United States, illustrating by appropriate lantern slides. It was held that with one or two exceptions, Spanish words could be found upon the published maps for nearly all topographic forms. Over fifty of these terms were defined and illustrated, and Mr. Hill proposed that many of them be adopted into the English language and used for forms for which the latter possess no appropriate terms. The paper will be published in full. W. F. Morsell.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA, MAY 26, 1896.

A paper entitled 'Catalogue of the Species of Cerion, with Descriptions of New Forms,' by Henry A. Pilsbry and E. G. Vanatta, was presented for publication.

Mr. Edw. Goldsmith reported that a specimen of supposed Geyserite from Hawaii had been found by him to be an amorphous, soluble sulphate of lime. The substance was found on the edge of the crater of Kilauea, associated with sulphur deposits.

Prof. Edw. D. Cope exhibited the skull of a whale from the Miocene of the Yorktown epoch. It adds another species to the whalebone whales, and establishes their direct relations to the Zeuglodonts. The elongation of the parietal and frontal bones is characteristic. The form is allied to the genus *Cetotherium*, and is described under the name *Cephalotropis coronatus*.

Dr. M. V. Ball described a human exancephalic monster born in about the seventh month. The brain, although extruded, is well developed. There are six digits on one hand. No reason could be suggested for the occurrence, the parents, grandparents and a number of brothers and sisters being normal.

Botanical Section, May 11, 1896, Dr. Chas. Schaeffer, Recorder.—Mr. Thomas Meehan stated that he had observed that the flowers of *Draba verna* are often self-fertilized by the two long arcuate stamens, while in *Capsella*, of the same order, this is not the case. He believes *Draba* to be both protandrous and proterogenous.

Mr. Beringer exhibited a very tomentose specimen of *Quercus alba*, and gave new localities for *Carex baratii*.

A committee, consisting of Edw. D. Cope, Benjamin Sharp and H. Frank Moore, was appointed to draft resolutions for presentation to the next meeting expressive of the Academy's opinion on the subject of the anti-vivisection bill now before Congress.

Edw. J. Nolan,
Recording Secretary.

NEW BOOKS.

Miscellaneous Papers by Heinrich Hertz, with an introduction by Prof. Philip Lenard, translated by D. E. Jones and G. A. Schott. London and New York, Macmillan & Co., Ltd. 1896. Pp. xxvi+340. $3.25.

The Gypsy Moth. Edward M. Forbush and Charles M. Fernald. Boston, Wright & Potter Printing Co. 1896. Pp. xii+495+C = 100.

Biological Experimentation, its Functions and Limits. Sir Benjamin Ward Richardson. London, George Bell & Sons; New York, The Macmillan Co. 1896. $1.00.