rock-sections directly with the microscope, with very satisfactory results. It is hoped to use this method of preparing plates for publication, to be reproduced by some heliotype or autotype method. Mr. Merriam took the field the latter part of May in south-eastern Dakota, where he proposes to study the quartzites exposed at a number of places between the James River and the Minnesota state line.

Mr. Vanhise, during May, continued his microscopic work, having prepared some forty new written descriptions of greenstones, chiefly from the original Huronian of the north shore of Lake Huron. The microscopic as well as field study of this formation has been found necessary, as it forms the type with which the rocks of all the other so-called Huronian areas must be compared.

Mr. Vanhise has also prepared a number of new sections, including some additional ones of the sandstones which he has described in his paper on secondary enlargements of felspar fragments published in the *American journal of science* for May. The new sections show the enlargements even more distinctly than the ones previously described by him, and leave no room for doubt as to the correctness of this very important observation. Mr. Vanhise will probably take the field in north-western Michigan in the agogebic belt of Huronian schists.

Unalashka sands. — Mr. J. S. Diller's report on the Unalashka sands will be published by the U. S. signal-office, and the geological survey has promised to examine and report upon any other volcanic sands or atmospheric dusts that may be collected by that bureau. Their observers, especially on Mount Washington and Pike's Peak and in Alaska, have been instructed to collect and preserve any sands or dusts that may fall, or be brought down from the air by rainfall.

Artesian wells. — Prof. T. C. Chamberlin has prepared a paper on artesian wells for the fifth annual report of the survey.

Dr. Peale has reports from Montana that work has been resumed on the artesian wells at Helena and at Billings, and that the second boring at Miles City, on the Yellowstone, reached flowing water at a depth of four hundred and fifty feet, which is a hundred feet deeper than in the first well.

RECENT PROCEEDINGS OF SCIENTIFIC SOCIETIES.

Cincinnati society of natural history.

July 1. — Dr. Walter A. Dun read a paper on the recent floods in the Ohio valley. He tabulated the measurements of all the floods since 1832 of which we have trustworthy records. The river has reached the height of fifty feet and over, fourteen times since 1832. All of these floods except one (that of August, 1875), have occurred in the winter months, and seven in the month of February. The extremely high water is the result of a long-continued and widely extended rainfall upon an accumulation of ice and snow, or upon the frozen ground. These conditions are sufficient to account for floods, not considering the question of the reduction of timber areas. —— Mr. Charles Dury, in a brief paper, described the finding, for the first time in our locality, of Adranes LeContei, a beetle inhabiting ants' nests. This beetle is kept by the ants for the honey-like secretion which it exudes. —— Mr. Joseph F. James stated that a recent discovery in the lower Silurian rocks of Clark county, O., makes it clear that some of the so-called 'fucoids' are undoubtedly caused by the oscillation of crinoid stems over the soft mud.

Brooklyn entomological society.

June 29. — Mr. J. B. Smith read a paper on some structural modifications of the Noctuidae with reference to their geographical distribution. Three typical faunae inhabit America north of Mexico; the northern of which, the Labrador fauna, is typical; the eastern agreeing in all essential characteristics with that of central Europe; and the western, peculiar to this country, reaching to the Pacific, thrusting long extensions into the southern states, and small spurs into the middle states. The northern fauna is typically represented by Anarta and the Pachnobia group of Agrotis, and is characterized by small head, smooth clypeus, often narrow ovate eyes, plump figure, and long, hairy vestiture. The northern species of Plusia, of which P. Hochenwarthi may be considered typical, share this tendency to ovate eyes, and, having also the tibiae spinose, must receive separate generic designation. Caloplusia is proposed to designate these forms, which usually also have the secondaries yellow. This northern fauna is indicated again in the high north-west, and is traceable in the mountainous regions of northern New York and the New-England states. The eastern fauna is characterized by more proportionate head, the front usually smooth, the body vestiture scaly, usually overlaid or intermixed with hair. The tibiae, when armed, are usually all of normal length; and the armature consists of spines. The maculation is normally noctuidous, and the wings are ample. The western fauna is most peculiar. The front is strongly modified, tuberculate, rugose, or excavate: the tibiae are heavily spinose, the anterior pair often shortened, and the armature consisting of long, corneous, claw-like processes. The ♀ oviduct is also more or less prominently extruded. As a whole, the heliothid type prevails; and even Agrotis takes a distinct heliothid tendency in the tuberculate front and heavily armed fore-tibia of the western species. Belonging to no special locality, but perhaps more distinctly south-western, is that group of which Phurys and Syneda are typical, and which agrees in distribution with the Tenebrionidae among the Coleoptera. The speaker asked, What is the peculiar circumstance

that demands of our western fauna this abnormal frontal development, the heavy tibial armature, and the corneous, lengthily extruded ♀ ovipositor?

Torrey botanical club.

June 10. — Mr. P. H. Dudley exhibited specimens and gave a brief account of his recent studies of wood sections. A large number of micro-photographs of transverse, radial, and tangential sections of our timber-trees were shown. Among the specimens were Sequoia sempervirens, in which attention was called to the very large cells (none less than a tenth of an inch in length), and to the fact, that, in this and other conifers examined, the pits in the cell-walls are only seen in abundance in the radial sections; Catalpa speciosa, which has lately been extensively employed for railroad-ties in the west; Ailanthus glandulosus, which the speaker stated he had found to contain the greatest number and largest ducts of any wood yet examined; Liriodendron tulipiferum, in which the ducts are very numerous but small; Maclura aurantiaca, in which the parenchymatous tissue within the ducts was plainly noticeable. In the white oak, chestnut, and black walnut, it had been observed that these parenchyma cells shrink away, in drying, from the inside surfaces of the ducts and from each other, then appearing as separate vesicles.

NOTES AND NEWS.

A LIST of the published writings of Spencer Fullerton Baird from 1843 to 1882, with indexes, compiled by George Brown Goode, the first of a proposed series of bibliographies of American naturalists, forms Bulletin No. 20 of the U. S. national museum. In a prefatory note, Mr. Goode explains that since 1874 he has been collecting materials for 'An index-bibliography of American ichthyology,' which will embrace "not only anatomical and descriptive ichthyology, but the literature of the fisheries, angling, fishery legislation and diplomacy, fishery statistics, and the commerce of the fisheries." Besides the titles and references, notes upon what each paper contains, and, in case of important papers, synopses of their contents, will be given: these notes will include references to every published engraving. It is hoped to finish this work in 1884, including in it material published before July of that year. The bibliography of Professor Baird's writings is apparently in part material collected for the above-mentioned work, although notes are wanting to many titles. Other special bibliographies of prominent naturalists are in preparation, among which one of Charles Girard and of Theodore Gill, by Mr. Goode, and one of Isaac Lea by Mr. Newton P. Scudder, are announced.

The articles recorded for Professor Baird number 1,063 titles; the numerous notices, abstracts, and reviews which appeared in *Harper's magazine* and in *Harper's weekly* being cited only in their reprinted form in the *Annual record of science and industry*. The general plan of this special bibliography is commendable. An excellent biographical sketch of Professor Baird follows the prefatory note, and is supplemented by a portrait, which Professor Baird refused to allow to be inserted in the work, but which Mr. Goode has kindly sent to as many as possible of the recipients of the bibliography. It is the same which appeared in *Science*, No. 5. The list of genera (1) and species (32) named in honor of Professor Baird is pardonable material, perhaps, with which to fill three pages of a government publication. This form of honoring the names of naturalists means little, and has just reached the maximum of its absurd development in England, where an entomologist has calmly named a butterfly after himself. The real honor due Professor Baird as organizer and scientific worker is not enhanced by this valueless list. The chronological catalogue of papers occupies 246 pages of the work. In some cases the notes are long, and embrace lists of the genera and species, and even of the varieties, treated of in some of Professor Baird's more extensive works. This may be a practicable or even a desirable method in bibliographies of workers in vertebrates, but would become unwieldy were it carried out for those whose work lay in some other portions of the animal kingdom. Following the chronological catalogue are a systematic catalogue and a list of species discussed and illustrated, both referring, by number and by condensed title, to the list of titles. An alphabetic index of subjects — not scientific names — closes the bibliography.

A commendable feature of this bibliography is the complete independence of each entry, allowing the catalogue to be cut and pasted on cards without additional writing. There are points in which the mode of recording might be bettered. Initial capital letters are very properly discarded, although with some inconsistency of usage, from numerous words in titles of papers, following the practice of many modern bibliographers; but why should the compiler retain initial capitals in such unimportant parts of the title-page as 'With Eighty-seven Plates of Original figures,' on p. 83? Considerable condensation might be made by using only arabic numerals, and by considering p., pl., fig., and like abbreviations, plural as well as singular. Thus 'pp. i.–xvii., 1–496, pll. i.–xxxii.,' would be more tasty, and more easily read, if printed, 'p. 1–17 + 1–496; pl. 1–32.' The space occupied by |...|, in recording titlepages, might be given to more practical purpose, for indicating the actual size of volumes in centimetres (or even in inches), instead of using, as was done, the indefinite indications 8vo and 4to.

— *Nature*, June 19, states that letters addressed to the secretary of the committee of the British association for the exploration of Kilimanjaro have just been received from Mr. H. H. Johnston, dated from the British residency, Zanzibar, May 13. After consultation with Sir John Kirk, Mr. Johnston had selected the Mombasa route for Kilimanjaro, and was expecting to depart for that port in about a fortnight's time. The country between Mombasa and Chaga was said to be quiet, and to present no serious difficulties in the way. Mr. Johnston had succeeded in obtaining the services of three of the same bird-