SCIENTIFIC JOURNALS.

JOURNAL OF GEOLOGY, NOVEMBER–DECEMBER.

The Greenland Expedition of 1895: By R. D. SALISBURY. This is not an itinerary of the expedition, but a discussion of the geologic and geographic problems suggested in the course of it. The following are considered: coastal topography and its interpretation, evidence concerning past glaciation from nature of rock surfaces, general distribution of snow and ice, icebergs and evidences concerning recent changes of level. The time allowed was not sufficient for detailed observation on any of these lines, but the facts gathered are of especial significance as supplementing and checking as well the work of last summer in this little known field. The author finds strong evidence that the Pleistocene ice sheet of America did not come from Greenland, and that the conditions for glaciation on the coast of Greenland to-day are better in latitude 74°–76° than in 76°–79°. Another interesting conclusion is that the ice cap of Greenland did not reach its greatest extension at all points at the same time. The observations on icebergs are quite full and show clearly either that there was little debris in the parent glaciers, or that it was quickly lost by the bergs.

A Circum-Insular Paleozoic Fauna: By S. WELLER. So long as paleontology made the identification of species an end in itself and assumed that forms found widely separated in space must belong to different species, even though they seemed to be identical, it was necessary doubtless, but it was not interesting to the philosophic geologist, because it seemed to him to ignore more than it considered. In later years there has been a decided broadening in the view of paleontologists. Under the lead of Williams, Walcott and Smith in this country there has been an attempt to solve the same kind of problems for ancient faunas and floras which Wallace, Darwin, Gray and others have solved for modern ones. In this paper the author applies the method in determining the origin of the Chouteau fauna of the Ozark area in southeastern Missouri. He finds evidence of a land barrier extending from 'Isle Wisconsin' southwest through this area in early Devonian time which separated two rather distinct faunas. In the latter part of the Devonian this land barrier became sea bottom, and the two faunas mingled freely in the Ozark area. The result was a new fauna decidedly Carboniferous in its affinities, though Devonian in time. The most hardy elements of the two competing faunas survived, and this new vigorous stock gave character to succeeding faunas for a long period. Some pregnant suggestions are made regarding correlation of formations.

Experiments in Ice Motion: By E. C. CASE. The mechanics of glacier motion involve questions often asked but not easy to answer. The experiments of the author were designed to throw light on the existence and nature of differential movement in the basal portions of glaciers. Paraffine with a quantity of refined petroleum to lower the melting point was the material used. It was placed in a box with various obstructions in the bottom and by means of a close fitting plunger was forced toward the middle of the box over the obstructions. In order to trace the currents, thin lines of powdered coal or Galena, and layers of dark wax, were used. The results, as shown by the photographs, tally well with Prof. Chamberlin's descriptions of some Greenland glaciers. The author finds proof of both vertical and horizontal differential movements in the basal portion of the wax. Similar currents in glaciers he thinks may be the cause of certain features of subglacial topography. For example, he finds that drumlin areas lie in the lee of escarpments or other irregularities of hard rock over which the ice has just passed.

Absarokite-Shoshonite-Banakite Series: By J. P. IDDINGS. This is a study of a peculiar series of igneous rocks associated with the normal andesites and basalts of the Yellowstone National Park, but differing from them mineralogically and chemically. These rocks are arranged under the three groups named in the title, of which the first contains the least SiO_2 and the third the greatest amount. The author concludes that this is a series variable in two principal directions chemically: in the ratio of alkalies to silica, and also in the silica percentages. The variations of other chemical constituents are to some extent functions of these variables.

Distribution of Gold Deposits in Alaska: By

Geo. F. Becker. During the past summer the author was sent by the U. S. Geological Survey to investigate the gold resources of Alaska. This paper is a very brief resumé of the results. He finds nothing phenomenally rich, but that there are paying quantities of gold in several localities seems clear from his account.

In this number there is a new department, viz: Authors' Abstracts. Under this will be found abstracts of a variety of geological publications, including some of the new U. S. Geological Atlases.

AMERICAN JOURNAL OF SCIENCE.

The January number opens Volume I. of the Fourth Series, or Volume CLI. since the establishment of the Journal in 1818. The leading article is by W. M. Davis upon the quarries in the Lava Beds of Meriden, Conn. This locality exhibits with great distinctness at the present time the two lava beds composing the ridge at that point, and the fractures by which the beds are faulted. These igneous outflows in common with most of the others which characterize the Triassic of Connecticut are viewed as extrusive lava beds, once horizontal and continuous, but now tilted, dislocated and denuded. The present paper discusses in detail the present relations of the outflows, with a number of idealized illustrations showing their position with reference to the accompanying sandstone and shales. It is urged that the former may be used as well as the latter in the study of the stratigraphy. A second geological paper is by Stanton and Vaughan, and describes minutely, with a diagram, the Cretaceous section exposed in Mexico and New Mexico, near the Initial Monument of the Mexican boundary survey, three miles west of El Paso. G. W. Littlehales discusses, from a mathematical standpoint, the form of isolated submarine peaks with reference to their relation to the intervals at which deep-sea soundings should be taken in searching for probable shoals in the open ocean. E. H. Forbes gives an analysis of the epidote from Huntington, Mass., with a discussion of its optical properties and, further, their relation in general to the composition of the species. H. L. Wells and H. W. Foote describe a series of double fluorides of Cæsium and Zirconium; analyses of the salts $2\,Cs.ZrF_4$, also $CsF.ZrF_4.H_2O$ and $2\,CsF.3ZrF_4.2H_2O$ are given. Other chemical articles are by F. A. Gooch and A. W. Peirce on the iodometric determination of selenious and selenic acids, and by P. E. Browning on the interaction of chromic and arsenious acids. A. M. Mayer gives a note on the Analysis of Contrast-Colors by viewing, through a reflecting tube, a graded series of gray discs, or rings, on colored surfaces. This is based upon the fact, noted by Rood, that the mixing of black with certain colors simply darkens them, while with other colors the effect is to change the hues. A new form of cathetometer of simple construction is described by F. L. O. Wadsworth, with a series of figures and a half-tone plate showing the instrument in use. The novel feature is the employment of a light silvered mirror mounted on a vertical axis just in front of the objective. By means of this the comparison of the object to be measured with standard scale is readily made. It is shown that highly accurate results may be obtained with this instrument, while the cost is relatively very small. O. C. Marsh details some observations made of globular lightning from notes taken at the time of its occurrence at Southampton in July, 1878. The circumstances were such that this rare phenomenon could be more minutely and accurately observed than is often possible.

The concluding thirty pages of the number are devoted to abstracts of scientific papers, notices of books, etc., on a wide range of subjects.

SCHOOL OF MINES QUARTERLY, NOVEMBER.

The November number of the School of Mines Quarterly has recently appeared, J. F. Kemp taking the place of A. J. Moses as managing editor, as Dr. Moses is in Europe on a year's leave of absence. The table of contents contains the following: 'The Missouri River,' by George R. Morison; 'Temperature of Gases from Lead Furnaces' and 'Temperature of Lead Slags,' both by Malvern W. Iles; 'The Assay of Platinum,' by E. H. Miller; 'Lecture Notes on Rocks,' by J. F. Kemp; 'The Study of Architectural History at Columbia College,' by Wm. R. Ware. The first paper describes the peculiar features of the Missouri River and the difficulties met and surmounted in constructing and maintaining bridges across it. The author

is reputed to have built more bridges than any other living engineer, and presents an interesting account of his experiences. The next two give the results of a series of experimental determinations of the temperatures mentioned in the title. In the fourth paper the results are detailed of an extended series of experiments on a difficult subject and the final attainment of a feasible and a not too long method. The fifth paper, which will be a serial, contains the opening chapters of a manual on rocks for use without the microscope. The last paper emphasizes the importance of teaching architecture as an art, comparable with artists' as distinguished from engineers' or artisans' work. As outlining a future policy for our schools of architecture it has important bearings.

SOCIETIES AND ACADEMIES.

NEW YORK ACADEMY OF SCIENCES, SECTION OF BIOLOGY.

THE following papers were presented on December 9th:

Prof. C. L. Bristol: 'The Classification of Nephelis in the United States.' The study of abundant material, collected from Maine to South Dakota, has shown that the color characters cannot be depended upon for specific determination. An examination of the metameral relations of this leech indicates that no more than a single species occurs in this country.

Prof. H. F. Osborn: 'Titanotheres of the American Museum of Natural History.' The complete skeleton of Titanotherium robustum is remarkable in possessing but twenty dorso-lumbar vertebræ, a number identical with that typical of the Artiodactyla, but entirely unique among Perissodactyla. It now appears probable that the development of horns in the Titanotheres became a purely sexual character, and that the genera Titanops, Marsh, and Brontops, Marsh, are founded respectively upon male and female individuals of Titanotherium robustum.

Dr. J. L. Wortman: 'The Expedition of 1895 of the American Museum of Natural History.' The expedition passed into the Unita beds of northeastern Utah, then between the eastern escarpment of the Unita range and the Green River into the Washakie Beds of southwestern Wyoming, the most important result geologically being that the Brown Park deposit is found to be of much later age than the Unita.

BASHFORD DEAN,
Rec. Sec'y, Biological Section.

SECTION OF GEOLOGY AND MINERALOGY.

THE Section of Geology and Mineralogy of the New York Academy of Sciences assembled for its regular monthly meeting Monday, December 16, 1895, Prof. J. J. Stevenson presiding.

The first paper was by Prof. H. P. Cushing, 'Notes on the Areal Geology of Glacier Bay, Alaska.' The paper will appear in full and with a geological map in Vol. 15 of the Transactions of the Academy, but the following is an abstract:

After an introduction which outlined the previous work in the region by Dr. H. F. Reid and the writer and the petrographical determination of the rocks that had been collected by them, and that had been studied by the late Dr. George H. Williams and the writer, a description of the general geology was given, based upon a geological map.

Mr. Cushing shows that the rocks present are argillites, limestone, quartz-diorite, diorite, crystalline schists and dikes of diabase. The argillites have a wide distribution around the eastern side of the Muir glacier basin, and also form the mountains adjacent to Muir Inlet. They present three main phases: First, very hard, fine grained argillo-siliceous beds, gray to brown in color, occasionally approaching quartzite in character. Second, blue and black, somewhat slaty rocks, nearly as hard as the first, and equally fine grained, but less siliceous, although containing only a slight amount of calcareous manner. Third, thin bands of black graphitic slates, with good slaty cleavage, and interstratified with the other two varieties. No fossils were found, although careful search was made.

The limestone is called the 'Glacier Bay Limestone.' It is dolomitic, and for the most part extremely pure, containing only a trace of insoluble matter. Fossils were rare and so damaged by metamorphism as to be unrecognizable. But in 1893 a fossil coral was brought