Die Continuität der Atomverkettung. GEORG HÖRMANN. Jena, Gustav Fischer. 1899. Pp. 118. Mark 3.

Text-Book of Physics—Sound. J. H. POYNTING and J. J. THOMSON. London, Charles Griffings & Company; Philadelphia, J. B. Lippincott & Co. Pp. x+163.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *American Journal of Science* contains the following articles:

Glacial Lakes Newberry, Warren and Dana, in Central New York, H. L. FAIRCHILD.

Rapid Method for the Determination of the Amount of Soluble Mineral Matter in a Soil, T. H. MEANS.

New Type of Telescope Objective especially adapted for Spectroscopic Use, C. S. HASTINGS.

Phenocrysts of Intrusive Igneous Rocks, L. V. PIRSSON.

Occurrence, Origin and Chemical Composition of Chromite, J. H. PRATT.

Influence of Hydrochloric Acid in Titrations by Sodium Thiosulphate, J. T. NORTON, Jr.

Rock-forming Biotites and Amphiboles, H. W. TURNER.

One Little Known and one Hitherto Unknown Species of Saurocephalus, O. P. HAY.

Some American Fossil Cycads, G. R. WIELAND.

THE *American Geologist* for April opens with an extended article by Professor William M. Davis on the peneplain, being a reply to an article by Professor Tarr in a previous issue of the journal. Professor Davis writes from Cannes, France. Following are articles: By Professor George E. Ladd, on the Cretaceous Clays of Middle Georgia; by Professor H. N. Winchell, on the optical characters of Jacksonite, and by Professor C. H. Hitchcock, giving an account of his observations in Australasia.

THE *Journal of the Boston Society of Medical Sciences* contains a paper by Dr. Franklin G. White on 'Blood Cultures in Septicemia, Pneumonia, Meningitis and Chronic Disease,' in which, among the conclusions reached, is that the detection of specific bacteria in the blood in cases of sepsis and pneumonia gives an unfavorable prognosis. A brief but interesting article by E. H. Bradford treats of the 'Movement of the Front of the Foot in Walking;' and Dr. John Dane follows with a 'Report of Some Studies upon the Arch of the Foot in Infancy,' showing that this arch is present in infants but is masked by a sustaining pad of fat.

THE frontispiece of the *Osprey* for February is a plate of the Hairy Woodpecker by Fuertes; the first article, 'Notes from North Dakota,' by E. S. Rolfe treats of egg collecting in the vicinity of Devil's Lake. Mr. Geo. F. Breninger has an article on 'Gambel's Quail;' and Rev. W. F. Henninger discusses 'The Scourge of Egg Collecting' in a manner perhaps a little over-zealous, but with an array of facts that merit serious consideration. The feature of the number is Dr. Gill's long letter headed 'A Great Work Proposed,' wherein he lays before the readers at some length a number of suggestions for a new history of North American birds. The publication of the *Osprey* for March brings this magazine down to date; Julia S. Robins contributes an article on Wilson entitled 'Behind the Wedding Veil,' and Witmer Stone follows with a too short paper on 'An Old Case of Skins and its Associations,' being notes on one of the earliest ornithological collections in the United States. In 'Snap Shots with Pen and Camera,' E. S. Rolfe gives us half a dozen views of birds and nests, with accompanying text. 'The Gourdheads in the Cypress Swamp of Missouri,' by Otto Widmann, tells of the habits of the Wood Ibis, gourdhead being a local name for this bird. W. B. Davis has some suggestive notes on 'Odd Actions of Birds Unexplained,' and the customary notes, editorials and reviews complete this unusually good number.

SOCIETIES AND ACADEMIES.

CHEMICAL SOCIETY OF WASHINGTON.

THE regular meeting was held on February 9, 1899.

The first paper of the evening was read by Mr. F. D. Simons, and was entitled 'The Detection of Caramel Coloring Matter in Spirits and Vinegar,' by C. A. Crampton and F. D. Simons.

The paper states that the two principal tests given in the books for the detection of caramel coloring matter are, first, the reduction of Fehling's solution, and second, the precipitation of the caramel by means of paraldehyde. Neither of these tests has given satisfactory results in the hands of the authors.

It was found that fuller's earth had a selective affinity for caramel coloring matter in spirits, while the natural color derived from wood was but slightly affected. The test is made by beating up twenty-five grams of the earth with fifty cc. of the sample to be tested, allowing it to stand for thirty minutes at room temperature, and filtering. The color before and after treament is observed by means of Levibond's tintometer or other form of good colorimeter, and the amount of color removed ascertained in this way.

The test was applied to all the samples of spirits available in the laboratory of internal revenue, positive results being obtained in all cases. A series of 40 samples known to be naturally colored gave an average of 14.6 per cent. of color removed, while 18 samples of spirit known to be colored with caramel averaged 44.7 per cent. of color removed.

The test was also applied to a few samples of vinegar, with good results.

The second paper of the evening was read by Dr. David T. Day, and was entitled 'Characteristics of Iridosmium in the United States.'

A demand has lately arisen for this material as a source of osmium, with which it is proposed to impregnate the filaments of incandescent lights, with most beneficial results as to the amount of light supplied by a given current and the increased life of the lamp. The problem of supplying a large amount of osmiridium is a most fascinating one and has led to much study in the localities of the West where platinum metals have been found. The results show that platinum is much more generally distributed through the western placer mines than was supposed and that there are localities containing so-called crude platinum, in which osmiridium is found. A sample sent from the Oregon beach contained as high as 99 per cent. of osmiridium. The Hay Fork District, in Trinity county, California; Junction City, and are especially the whole Pacific Coast beach is a most interesting field of search because the platinum is mixed with much osmiridium. It can be said in general that nearly all the crude platinum sand contains osmiridium in greater or less quantity, according to the analyses of a great number of sands made by Dr. Waldron Shapleigh, for the Welsbach Light Company. An interesting exception is the Granite Creek District, of British Columbia. A curious form of osmiridium was noted at the Chapman Mine, near Junction City, California, where nuggets ½ inch in diameter, when treated with warm dilute nitro-hydrochloric acid, yield platinum in solution and flakes of osmiridium. The separation of the platinum from the osmiridium is readily accomplished by means of nitro-hydrochloric acid, and the separation of osmic acid from the residue is quite simple by the ordinary process of passing chlorine over the osmiridium mixed with salt. The purification of the osmic acid is now effected by redistillation, but it is probable that these methods will be much improved within the next few months. It is probable that 2,000 ozs. of the material will be obtained during 1899.

The last paper of the evening was read by Dr. Day, and was entitled 'Uses of Fuller's Earth as a Filtering Medium.'

In 1892 an effort was made by the Owl Cigar Manufacturing Company at Quincy, Florida, to manufacture brick from a peculiar cream-colored clay found on their property. Instead of baking hard, it exfoliated in a peculiar manner and caused some comment from an Alsatian cigar-maker in the employ of the company, who noticed this clay and called attention to its close resemblance to German fuller's earth. This led to an inquiry as to its value as fuller's earth, at a time when the lubricating oil companies were looking for domestic fuller's earth to replace animal charcoal as a means of lightening the color of lubricating oils by filtration. The earth proved very suitable, and its use extended in this direction as well as to some extent in the bleaching of vegetable oils. But for the latter purpose the imported fuller's earth is still approved. The number of samples of clays which have been called fuller's earth and sent to the consumers for examination since that date is almost beyond belief. It has been shown that fuller's earth is quite widely scattered in the northwestern counties of Florida and the adjacent counties of Georgia. In the latter region the fact that it grades into chalcedony makes it more probable that the fuller's earth is a chemical precipitate, and this is further indicated by the replacement of calcium car-

bonate by the silica in many shells found associated with the fuller's earth.

The Florida and English fuller's earth differ greatly in appearance and to some extent in chemical composition. English fuller's earth has found its analogue in the material discovered at Fairburn, near Rapid City, South Dakota, and Valentine, Nebraska. It is altogether probable that further developments will make the material from these places an important article for use in bleaching cotton-seed oil. There is an interesting difference in the methods of testing the Florida fuller's earth as compared with the English. It is the constant practice of the lubricating oil companies simply to fill large, slightly conical cylinders with the fuller's earth, ground to about 40 mesh, through which the oil is filtered at about the temperature equal to that of boiling water. At first the filtrate is perfectly colorless and, strange to say, lighter in specific gravity and more fluid than the unfiltered oil, a fact which will probably be made use of in chemical separations of the future. Dr. Day is now using this in investigating oils. Fuller's earth is used for bleaching refined, golden cotton-seed oil to a light straw color. When the resultant is to be used for white products, such as lard substitutes, the fuller's earth is ground to a fine powder and stirred into the oil slightly above the temperature of boiling water. After a thorough mixing by agitation for a few moments the bleached oil is simply filtered through bag presses. Perhaps the most interesting feature of this use of fuller's earth is the very slight difference in the two varieties of fuller's earth in regard to their bleaching capacity, which leads to their acceptance or rejection. Little regard is paid to chemical analysis, but the tests made by filtration, on a small scale, are most severe."

WILLIAM H. KRUG.

GEOLOGICAL CONFERENCE AND STUDENTS' CLUB OF HARVARD UNIVERSITY.

Students' Geological Club, February 28, 1899. In considering the 'Law of the Migration of Divides,' Mr. J. M. Boutwell developed this law as stated by Cambell (*Journal of Geology*, IV, 580), and discussed the amendment to it which has been offered by Smith (18th Annual Report, U. S. Geological Survey, Part II., 472).

Mr. H. T. Burr described 'A Drainage Peculiarity in Androscoggin, Maine.' Androscoggin Lake, the last of a chain which drain into Androscoggin River near North Leeds, Maine, contains a unique delta, which is situated, not at the head of the lake, but at the outlet.

The preglacial valley which the lake occupies is blocked just below the foot of the lake by glacial débris, which forces the outlet stream to flow backward, against the slope of the country, into the Androscoggin. Thus the fall between the lake and the Androscoggin is so small that at times of flood this main river rises so high as to reverse the flow of the outlet stream. At such times a flood of mud-laden water pours into the lake and deposits its load. Under normal conditions the outflow is incompetent to remove the material thus brought in. Accordingly the delta has grown, and is still growing, against the normal course of the current.

Geological Conference, March 7, 1899. Professor J. E. Wolff communicated his discovery of 'Hardystonite, a New Mineral from Franklin Furnace.' The specimen of ore containing the mineral came from a new working of the Parker Shaft, at about the nine-hundred-foot level. The mineral is tetragonal, and its general formula is $ZnCa_2Si_2O_7$. A complete description will be given in the Proceedings of the American Academy of Arts and Sciences.

Dr. Charles Palache described 'A Method of Enlarging Diagrams,' which has been developed in the Harvard Mineralogical Laboratory within the last few months. It purpose is for preparing large diagrams, from small, straight-line, text diagrams, for lecture use. The instrument used is a megascope made by Fuess. This consists of two sets of three mirrors, which concentrate light upon the diagram. From that the light is reflected through a double-convex lens, which projects the image upon a screen. The diagram is then obtained by tracing the image, thus enlarged to any desired size, and by inking in this tracing. This method possesses a double advantage over photographic enlargements in that it affords a far more satisfactory product and is much cheaper.

Dr. A. S. Eakle presented 'Notes on Some Rocks from the Fiji Islands.' The collection, which included both igneous and sedimentary rocks from about twenty of the smaller volcanic islands, was made by Mr. Alexander Agassiz during his recent studies in that region. The specimens of eruptive rocks were found to include hornblende andesites, augite andesites, hypersthene andesites and basalts.

J. M. Boutwell,
Recording Secretary.

TORREY BOTANICAL CLUB, JANUARY 25, 1899.

Dr. N. L. Britton presented a report on the progress of the New York Botanical Garden, with exhibition of photographs. Dr. Britton said that during 1898 the species cultivated in the Garden at Bronx Park have reached 2,110, a gain of 700 on the previous year. The fruticetum, on the plain northeast of the Museum building, was begun in October, and now includes 195 species. The arboretum has been increased to 178 species, including those native to the tract. A viticetum is in preparation, to be planted next spring, including rock-ledges, and a rustic arbor about 600 feet long, now nearly completed. An additional nursery space near the southern corner of the tract was prepared in the spring, and planted partly with Siberian cuttings. Border screens are now planted around the entire tract except to the south. A complete record of all plants grown is kept by means of a card catalogue. From every plant which flowers on the ground an herbarium specimen is made; and these are classified in a special herbarium, useful already in satisfying inquiries. The use of the greenhouse on the Columbia University grounds at Morningside Heights was granted in 1896, and is still very important to the Garden. This is the old greenhouse built in 1857 by Mr. S. Henshaw for the Bloomingdale Asylum, and is one of the oldest greenhouses still standing in the United States.

Progress on the Museum building has been active, and it is thought it will be ready for occupation by midsummer. The Power House is nearly ready to put into operation. A subway from this to the Museum is under construction. A stable, toolhouse, etc., have been finished. The range of horticultural houses is planned to contain 13 houses; the contract for 7 of these has been signed, and ground was formally broken for them on January 3, 1899. Important work has been done toward improving the drainage of the Herbaceous Grounds, and a great deal of grading, and the terraces about the Museum have been begun. The Lorillard Mansion is now used as a police station-house, occupied by more than 65 officers, making a new and wholesome water-supply necessary. This has now been finished.

The Hemlock Forest remains in healthy condition; only three trees have died in the last three years.

The Museum is planned to provide in the basement a lecture-room seating 900; on the first floor a collection of plant-products, with models and photographs; on the second, a scientific collection for expert use, including a mounted collection of the local flora on swinging panels; followed by herbarium and laboratories on the top floor.

The herbarium already includes 30,000 specimens. Through the liberality of Mr. Cornelius Vanderbilt, Mr. and Mrs. Heller are now making collections in Porto Rico. Messrs. P. A. Rydberg and Ernest Bessey made collections in 1897 in Montana, through the liberality of Mr. W. E. Dodge. The results will soon appear as a Flora of Montana, forming the first volume of the Memoirs of the New York Botanical Garden.

E. S. Burgess,
Secretary.

DISCUSSION AND CORRESPONDENCE.

SOME SUGGESTIONS FOR SCIENTIFIC SEMINARS AND CONFERENCES.

To the Editor of Science: I feel that an experience of several years as a respectful and regular listener to scientific papers by young and old students, at college seminars or conferences, and at annual or periodic meetings of societies, gives me the basis for certain generalizations, without leaving me open to the criticism of judging from insufficient data.

The principal generalization I should like to offer is to the effect that our scientific students in colleges and professional schools do not re-