Triply Asymptotic Systems of Surfaces,' by Dr. L. P. Eisenhart; 'Note on Hamilton's Determination of Irrational Numbers,' by Dr. H. E. Hawkes; 'Review of Muth's Elementartheiler,' by Mr. T. J. I'A. Bromwich; 'Shorter Notices': 'Fricke's Lectures on Higher Mathematics,' and 'Böger's Plane Geometry of Position,' by Professor H. S. White; 'Notes'; 'New Publications.'

SOCIETIES AND ACADEMIES.

SECTION OF GEOLOGY AND MINERALOGY OF THE NEW YORK ACADEMY OF SCIENCES.

AT the meeting of the Section on March 18th, the following program was presented:

'The Cambro-Ordovician Outlier at Wellstown, Hamilton County, New York.' In introducing the subject of the paper Professor Kemp gave a brief account of the physiographic problems presented in the Adirondacks and of the significance of the smaller outlines of Paleozoic strata which occur within the crystalline area. He then discussed the Wellstown exposure and described it in much the same way as he has already done in print in the 'Eighteenth Annual Report of the State Geologist of New York,' page 145. The general conclusion favored the existence of land areas of ancient crystalline rocks in the vicinity of Wells, and, it seemed to the speaker, that the peculiar sediments could not be explained in any other way. Pebbles, as large as one's fist, of gneiss similar to that found in the ancient hills, are imbedded in the Trenton limestone, and much sand is found in the limestones of both the Calciferous and the Trenton. It was admitted that the present valley is due to faulting, as has been previously claimed by Dr. R. Ruedemann, but the shores of the late Cambrian and early Ordovician could not have been far from the present outcrops of the Paleozoics at Wells. Mr. Van Ingen and Doctors Levison, Dodge, White and Julien took part in the discussion of the paper.

Dr. Julien remarked, in regard to the sand found in the limestones to which Professor Kemp referred, that although the smaller and angular portion of the sand, in which feldspar is common, and particles of garnet, epidote and menaccanite also occur, may possibly be residual, derived from decay of gneiss adjacent to the shores of the ancient basin, the predominant quartz grains, well rounded and even perfectly spherical, could not possibly be of that origin. Their sculpture indicates prolonged action during ages before they assumed spherical form, and that although found in sediments loose or consolidated in all periods from the quartzites of the Laurentian down to the present beaches along rivers, lakes and ocean, they represent in all cases ancient materials which have been worked up over and over again from period to period. In the Potsdam of the North American continent they have been accumulated in an extensive outer-beach deposit, the result of an enormous resorting of materials throughout the vast Cambrian time. These 'paleospheres' were doubtless derived from the same Potsdam horizon which has yielded the oolitic quartz sand of the 'singing beach' on the shores of Lake Champlain, near Plattsburg, not many miles from the Wellstown Ordovician outcrop. They certainly were not swept into this limestone basin by currents, since the absence of sorting and the parallel deposition of their axes show that they were dropped down from the surface in a continuous gentle shower. The conditions which favored this consist of the floating of sand from the beaches along sheltered bays, such as Long Island sound, on every quietly rising tide, with its seaward transport, often to hundreds of miles off the coast, commonly caught in the dredges of surveying steamers, as noted by Verrill and others, and in its constant subsidence over the bottom. Such sand transport was plainly in progress over the quiet embayment occupied by this limestone, from surrounding beaches supplied from the decay and disintegration of an ancient shore of Potsdam and Calciferous sandstones. The various sands referred to in these remarks were illustrated by photomicrographs.

'A Method of facilitating Photography of Fossils' was described by Mr. Gilbert Van Ingen. The process consists in forming, on the surface of the specimen to be photographed, a thin coating of ammonium chloride by the combination near that surface of ammonia gas and

hydrochloric acid gas. Such a coat effectually hides all coloration of the specimen and reflected light, and does not obliterate the finer details of the sculpture. The salt is perfectly harmless and may be readily removed by water, or by a soft brush. The paper was discussed by Professors Stevenson and Kemp, and Drs. Levison, Julien and White.

THEODORE G. WHITE,
Secretary.

THE NEW YORK SECTION OF THE AMERICAN CHEMICAL SOCIETY.

THE regular meeting of the New York Section of the American Chemical Society was held on Friday evening, April 5th, at the Chemists' Club, 108 West Fifty-fifth street, and over fifty members were present.

The following papers were read :

F. A. Sieker—'The Detection of Methyl Alcohol.'

A. H. Gotthelf—'The Synthesis of Alkyl Ketodihydroquinazolins from Anthranilic Acid.'

Durand Woodman—'Note on the Determination of Moisture in Coal.'

E. F. Kern—'Comparison of Methods for the Electrolytic Precipitation of Iron.'

E. F. Kern—'The Electrolytic Precipitation of Nickel and Cobalt from a double Cyanide Solution.'

In the discussion of Mr. Sieker's paper, Dr. Eccles suggested that for a method of detecting methyl alcohol depending on the production of a specific odor, he thought that which produced methyl salicylate was to be preferred as more characteristic than the one described producing formaldehyd.

Dr. Woodman's paper was an effort to ascertain more clearly the effect of oxidation in drying samples of coal according to the accepted method for determination of moisture. It appeared that the apparent loss of moisture in a stream of dry carbonic acid gas was uniformly less than when the coal was heated in contact with the air. This indicates that by the ordinary method there is a loss by oxidation in the first stages of heating, before the well-known increase of weight begins by more prolonged heating. The paper evoked considerable discussion as to whether the secondary increase of weight was due to oxidation, occlusion or to some change not yet explained. It was stated that further work was in progress with a view to clearing up some of these points.

Mr. Kern gave a very full and valuable exposition of the electrolytic methods for precipitation of iron, nickel and cobalt.

After the transaction of some miscellaneous business in connection with the twenty-fifth anniversary of the Society, the meeting was adjourned to May 10th.

DURAND WOODMAN,
Secretary.

BIOLOGICAL SOCIETY OF WASHINGTON.

THE 338th meeting was held on Saturday evening, April 6th, and was devoted to an address by Erwin F. Smith, on the subject of 'Bacterial Diseases of Plants,' the speaker considering in detail diseases of the cucurbits, the cabbage and the tomato, illustrating his remarks by numerous slides. These showed the entire plants and their histological structure in health and under the effects of the diseases discussed, showing in certain cases the water canals crowded with bacteria and in others the breaking down of the cell walls and the invasion of the healthy tissue by bacteria. The speaker described the physiological differences between the species treated and said that the diseases considered were mostly conveyed from plant to plant by beetles whose bites inoculated the healthy plants with bacteria derived from the diseased plants on which they had previously fed. Hence the remedy for the disease was to wage war on the beetles.

F. A. LUCAS.

THE LAS VEGAS SCIENCE CLUB.

THE regular monthly meeting of the Club was held April 9th. Mr. T. D. A. Cockerell exhibited specimens of *Sphœrium magnum* Sterki MS., found abundantly in the Pleistocene deposit of the Arroyo Pecos, Las Vegas. This species, although undescribed, was known to Dr. Sterki in the living state from Missouri, Kansas, etc.; but it had not been observed living in New Mexico. Mr. Cockerell also exhibited *Veronicella agassizi* n. sp., a slug found by Professor Alexander Agassiz in Tahiti. It was related to *V. gilsoni* of the Fiji Islands but apparently distinct. Mr. Emerson Atkins read a paper on

the 'Occurrence of the Western Evening Grosbeak (*Coccothraustes vespertinus montanus*) in Las Vegas,' and exhibited specimens of the birds. These birds had never been seen in Las Vegas, until about October 30th last, when they suddenly appeared in great numbers. They had remained in the town until the present month; Mr. R. H. Powell remarked that he had seen them as recently as April 7th. Mr. Frank Springer stated that he had observed them in Santa Fé during February. Mr. E. L. Hewett exhibited a curiously twisted stone spear-head which had been found at Chapelle, N. M. It was evidently designed to twist in the wound, and was unique among the spear-heads collected in New Mexico. Mr. Hewett also called attention to a triskelion (three-leg) design which he had seen on a piece of ancient pottery from Arizona. He also showed some of the vessels from the burial mounds of the Pajarito district, N. M., in which the same design occurred, but modified, so that what appeared to be hands, with claw-like fingers, took the place of feet.

T. D. A. C.

DISCUSSION AND CORRESPONDENCE.

PRIORITY OF PLACE AND THE METHOD OF TYPES.

In Science for April 12, 1901, Professor N. L. Britton has given an adequate explanation and justification for the rule of nomenclature which accepts precedence of page or position as a substitute for priority in time in determining which of two or more simultaneously published synonyms shall receive permanent recognition. It is further held that the proposed use of the first species as the type of its genus is simply an extreme extension of the idea of priority of place, and all reference to the method of types as a means of securing stability in the application of generic names is omitted.

In reality the priority or precedence analogy of the method of types is quite incidental to the main argument, and has been brought forward only because it seemed likely to influence favorably those who have been zealous in advocating 'page priority.' Professor Britton very properly maintains that there is an important logical distinction between the two propositions, but he does not bring out the facts that while precedence priority is a small matter, affecting a few isolated instances, stability in the use of generic names is of universal taxonomic importance, and that the method of types * still remains the only suggested means of obtaining it. Page priority is not particularly just or reasonable, since an author's last treatment of a genus or species is likely, on the whole, to be better than the first, and a rule to take the last of the synonyms appearing in the same book would be quite as definite and as readily applicable as one requiring the use of the first. But such a policy would not be in accord with the principle of priority, and it accordingly received but little consideration when the formulation of a definite rule was undertaken. With the method of types, also, the desideratum is a uniform rule, but thus far those who object to the use of the first species have not proposed to use the last species, or any other species in particular, doubtless because they still fail to realize the taxonomic bearing of the fact that under an evolutionary view of nature a genus is no longer to be treated as a concept † or a definition, but as a group of species.

The reasons for selecting the first species as the nomenclatorial type of a genus are quite as good, to say the least, as those for accepting the first name in a book, but they appear trivial when compared with those which require the taking of *some* species as the type, and that by a definite rule of uniform application. Accordingly, it is scarcely pertinent to bring merely nomenclatorial or historical objections against the proposition to use the first species as the type, until it can be shown that the general systematic and taxonomic requirements met by the method of types can be accommodated by the use of some other than the first species.

Professor Britton's further objection to the use of the first species, that 'it would render useless for nomenclatorial purposes much original investigation through which genera have been definitely established,' must be seriously discounted, to say the least, in view of the fact that the 'original investigation' has been conducted, either without any uniform plan, or

* Science, September 28, 1900, XI., 476.

† Science, October 14, 1898, VIII., 513.