

capped with rubber. It was held in a horizontal position and placed in a brood-oven where it remained for three weeks, at the end of which time a growth was apparent on the *Agar Agar* which had not been inoculated, thus demonstrating that something lighter than the bacillus itself had floated in an air-tight chamber at least one and one-half inches distant, warranting a belief in the existence of spores.

October 6th, Dr. Goldsmith called attention to the trap formations in Pennsylvania, more particularly to that near Pottstown, known as 'Ringing Rocks.' Referring to the contention as to whether they were of plutonic or volcanic origin, he said that he had been examining them for several years and was now convinced of their volcanic origin. In support of this view he described the general land configuration surrounding these formations, which he thought in some instances indicated the former existence of a crater, while in others the out-flow had been through fissures. In further confirmation he exhibited a number of rock specimens and microscopic sections of the same. The subject was debated by Profs. Pilsbry and Frazer and Dr. Rand.

Theodore D. Rand presented specimens of mica schist from the River road, in Fairmount Park, Philadelphia. The nodules resemble very imperfect andalusite crystals, but appear on examination to be almost wholly quartz with a little kyanite or sillimanite, resembling closely those described by the late Dr. George H. Williams, in the 15th annual report of the United States Geological Survey as occurring on Sligo Branch (probably Fairfax county, Virginia,) and as suggesting metamorphism of included fragments.

Papers under the following titles have been recently presented for publication:

'Fossil bones of Birds and Mammals from Grotto Pietro Tamponi and Grive St. Alban.' By R. W. Shufeldt, M. D.

'Contributions to the Zoology of Tennessee, No. 4, Mollusks.' By Samuel N. Rhoads and Henry A. Pilsbry.

'Mammals collected by Dr. A. Donaldson Smith during his expedition to Lake Rudof.' By Samuel N. Rhoads.

'The Hymenoptera collected by Dr. A.

Donaldson Smith in Northeast Africa.' By William J. Fox. EDWARD J. NELSON, Secretary.

THE TORREY BOTANICAL CLUB.

THE first fall meeting was held on Tuesday evening, October 13th, 33 persons being in attendance. Eight new members were elected. Dr. Britton reported that the field meetings during July and August had been usually well attended. Arrangements were made for reprinting several exhausted numbers of the *Bulletin*, so that complete sets can again be supplied. Specimens of the Russian thistle, collected on Captain's Island, off the Connecticut coast, were exhibited. The members interchanged accounts of their summer field experiences. Specimens of fleshy fruits were exhibited which had been preserved perfectly well since the early part of May in a 4 per cent. solution of formalin. H. H. RUSBY, Secretary.

SCIENTIFIC JOURNALS.

AMERICAN CHEMICAL JOURNAL, OCTOBER.

Trimetaphosphimic Acid and Its Decomposition Products: By H. N. STOKES. The author has defined a metaphosphimic acid as a metaphosphoric acid in which one-third of the oxygen is replaced by an equivalent number of imide groups. The complexity of these acids is so great that in most cases at least four forms are theoretically possible. Reference is made to the work of several investigators in the same field, and it is pointed out that the results obtained by Gladstone are capable of a different interpretation from that which he gave, and that the acid under investigation may have been trimetaphosphimic acid. The constitution of trimetaphosphimic acid depends on that of the chloronitride $P_3N_3Cl_6$. The author considers that the methods of formation and decomposition can be most readily explained on the assumption that the nucleus consists of a symmetrical ring of three phosphorus and three nitrogen atoms. Replacement of the chlorine by hydroxyl and a transformation into a tautomeric form would produce the trimetaphosphimic acid. It can be easily identified by its salts, several of which are quite characteristic. If a solution of the acid is decomposed by a

strong mineral acid the final products are orthophosphoric acid and ammonia. If, however, the action is limited, a series of intermediate acids is formed. Methods were devised for obtaining these acids in pure condition and a number of their salts were made and studied.

On Certain Derivatives of Trichlordinitrobenzol: By C. LORING JACKSON and W. R. LAMAR. The results of an investigation of the behavior of various reagents with tribromdinitrobenzol have been published in this JOURNAL. In the present paper the author compares those results with the ones obtained when trichlordinitrobenzol is used. With aniline the reaction in both cases is similar, the product formed being trianilidodinitrobenzol. When sodic ethylate is used, the replacement of two bromine or two chlorine atoms leads to the formation of similar compounds; but the replacement of the third does not follow the same rule, nor is the reaction with malonic acid ester similar in the two cases.

Camphoric Acid: By W. A. NOYES. Results obtained by this author have led him to reject the formula proposed for camphor by Bredt, which is the one most generally accepted, and that proposed recently by Tiemann. The evidence against the latter is found in the fact that the rate of esterification of two compounds, which should according to the view of Tiemann be the same, is very different. He has also subjected Armstrong's formula to a synthetic test and finds that his formula for camphor is not true. One of the products obtained in the course of this investigation, dihydro-cis-campholytic acid, has been studied by E. B. HARRIS, and the results are incorporated in this article.

On Diacid Anilides: By H. L. WHEELER. Diacid anilides may be divided into two classes, the first consisting of those which have identical acid groups, and the second of those with unlike acid groups. The second class have not been obtained by the same methods as the first; but the author of this paper has devised a method for their formation, which consists in treating silver or mercury acid anilides with an aliphatic acid chloride, when the action is similar to the one in which benzoylchloride is used. A number of these mixed diacid anilides

were prepared and studied. When silver and mercury salts of the amides were used, imidoethers were formed and not diacidamides, as was expected.

Iodometric Determination of Selenious and Selenic Acids: By J. F. NORRIS and H. FAY. This method depends on the reaction between sodium thiosulphate and selenious acid in the presence of hydrochloric acid. If the selenious acid in the presence of hydrochloric acid is treated with an excess of sodium thiosulphate, and then titrated back with iodine, very satisfactory results can be obtained. The complete reaction which takes place here is as yet unknown. Selenic acid must be reduced by boiling with hydrochloric acid before the selenium can be determined. Mixtures of the two can be easily analyzed by first determining the selenious acid and then the total after reduction of the selenic acid.

J. ELLIOTT GILPIN.

NEW BOOKS.

An American Text-Book of Physiology. Edited by WILLIAM H. HOWELL. Philadelphia, W. B. Saunders. 1896. Pp. 1052.

Die Bedingungen der Fortpflanzung bei einigen Algen und Pilzen. GEORG KLEBS. Jena, Gustav Fischer. 1896. Pp. xviii+543.

Die Morphologie und Physiologie des pflanzlichen Zellkernes. A. ZIMMERMANN. Jena, Gustav Fischer. 1896. Pp. viii+188.

On Certain Problems of Vertebrate Embryology. JOHN BEARD. Jena, Gustav Fischer. 1896. Pp. vi+77. M. 2.

Evolution of the Art of Music. C. HUBERT PARRY. New York, D. Appleton & Co. 1896. Pp. x+342.

Alterations of Personality. ALFRED BINET. Translated by HELEN GREEN BALDWIN. New York, D. Appleton & Co. Pp. vii+356.

Number and its Algebra. ARTHUR LEFEVRE. Boston, D. C. Heath & Co. 1896. Pp. 230.

The Coming Ice Age. C. A. M. TABER. Boston, Geo. H. Ellis. 1896. Pp. 94.

Genius and Degeneration. WILLIAM HIRSCH. Translated from the second edition of the German work. New York, D. Appleton & Co. 1896. Pp. vi+333.