SCIENTIFIC JOURNALS.

AMERICAN CHEMICAL JOURNAL, JANUARY.

On Parabromdimetanitrotoluol and some of its derivatives: By C. L. JACKSON and M. H. ITTNER. This work was undertaken to study the behavior of a bromine atom, in the ortho position to two nitro groups, but not exposed to a third negative group in the para position. The substances studied were the benzene and toluene bromdinitro compounds. The toluene compound was found to be poorly suited for the research on account of its stability. Several of its derivatives were made and studied; but in some cases the methyl group seemed to exert a protective action, preventing the formation of compounds whose analogues in the benzene series were easily formed. The bromdinitrobenzoic acid was found to be more reactive than the toluic acid. A number of related acids and their salts were made, and attempts were made to greatly increase the complexity of the molecules; but it was found that the substances lost their tendency to crystallize as the complexity increased, and pure substances could not be obtained.

Aluminum Ethylate: By N. H. HILLYER and O. E. CROOKER. In preparing amalgamated aluminum for reduction in neutral solution the authors found that contact with the air was injurious, and they therefore attempted to prepare it in alcohol without allowing it to come in contact with the air. To their surprise, and contrary to the statements of others who had worked on these substances, quite a reaction took place between the amalgamated aluminum and absolute alcohol, the final product being a white solid. This product was distilled, and a mixture of aluminum ethylate and aluminum chloride was obtained.

On the conditions affecting the Volumetric Determination of Starch by means of a solution of Iodine: By F. T. LITTLETON. The author has studied the accuracy of volumetric determinations depending upon the starch iodide reaction. She found that not only was the reaction affected by the temperature, but that starch from different sources gave different results. She reached the same conclusion that has been reached by others, namely, that the so-called iodide of starch is probably not a definite chemical compound and that it is very easily dissociated.

Silver Hydride: By E. J. BARTLETT and W. F. RICE. The authors succeeded in preparing silver hydride by precipitating a dilute solution of silver nitrate with dilute hypophosphorus acid. The product is filtered off rapidly and washed. It forms black spongy flakes and is not decomposed by water.

On the Volatility of Ferric Chloride: By H. P. TALBOT. Conflicting reports are found as to the volatility of ferric chloride, and the author undertook this investigation to determine the accuracy of these statements. He found that ferric chloride is not volatilized by boiling its solutions, and that no loss ensues on heating the dried residue to 130°. In the presence of aqua regia or when overheated with ammonium chloride there is, however, a slight loss.

Concerning properties belonging to the Alcohol-soluble Proteid of Wheat and of certain other Cereal Grains: By G. L. TELLER. The author found that the method of separation of the gluten and non-gluten compounds in wheat, by means of dilute salt solutions, was inaccurate, on account of the fact that the same nitrogen compounds were soluble both in the dilute salt solutions and in 75 per cent. alcohol. He separated the part precipitated by the salt solution, and then added a solution of phosphotungstic acid to the filtrate. By this process he separated the amides from the proteids soluble in salt solution. The part precipitated by the salt solution consisted of edestin and leucosin, and the sum of the nitrogen in these substances and that in the amides subtracted from the total nitrogen gives that in the alcohol-soluble proteid, which is gliadin.

Silicide of Chromium: By G. DE CHALMOT. This investigation shows that not only does chromium form a silicide of the formula $SiCr_2$, the compound obtained by Moissan; but also a compound Si_2Cr, formed by heating chromium sesquioxide, charcoal and silica in an electric arc furnace.

Paraisobutylphenoxyacetic Acid: By W. P. BRADLEY and F. KNIFFEN. This acid was prepared by the same methods used in the formation of its homologue phenoxyacetic acid. A number of its salts were prepared and studied.

On a simple automatic Sprengel Pump: By B. B. Boltwood. The author describes a form of pump which can be easily made and which he recommends as very satisfactory.

The following books are reviewed in this number of the *Journal:* The Practical Methods of Organic Chemistry, L. Gattemann (translated by W. B. Shober); Notes on Qualitative Analysis, W. P. Mason; Chemistry for Beginners, E. Hart; Manual of Determinative Mineralogy, Geo. J. Brush; Chemistry in Daily Life, Dr. Lassar-Cohn; Handbook for the Bio-Chemical Laboratory, J. A. Mandel.

J. Elliott Gilpin.

SOCIETIES AND ACADEMIES.

NEBRASKA ACADEMY OF SCIENCES, DECEMBER 30, 1896.

The seventh annual meeting of the Nebraska Academy of Sciences was held December 29th at Lincoln and the following papers were presented:

Annual address of the retiring President, Prof. E. H. Barbour, on the 'Economic and Educational Value of Academies;' a comparison of the methods of various academies, with recommendations for the betterment of our own.

'A new Plankton Pump,' Prof. H. B. Ward and Prof. Chas. Fordyce, a device for collecting aquatic organisms by pumping from any desired depth; followed by remarks by Prof. Ward on the importance of continued biological observations.

'Report of Progress in the Study of the Fauna of the State,' Prof. L. Bruner, showing how few species have been reported from Nebraska in most groups, although our number of species is undoubtedly very large.

'Some Methods of Collecting, Preserving and Studying Fossils,' Miss Carrie Barbour, illustrating the fact that forms apparently hopelessly disintegrated may be collected and preserved.

'Nomenclature of Nebraska Forest Trees,' Dr. Chas. E. Bessey, giving the history of changes in names of our trees with the names now adopted.

'Reflections on the Genus *Ribes*,' Prof. F. W. Card, urging the validity of species developed by cultivation as well as those found wild whose genealogy is not known.

'Chalcedony-lime Nuts of the Genus *Hickora* from the Bad Lands of Nebraska,' Prof. E. H. Barbour.

'Comparison of Nebraska Diatomaceous Earth from Nebraska and adjacent States,' C. J. Elmore.

'What is Mathematics?' Dr. E. W. Davis, showing how mathematics is designed to coordinate other sciences.

'A Family of Quartic Surfaces,' the sum of the distances of whose locus from two given surfaces is constant, Prof. R. Moritz.

'A Form of Weir Notch,' the flow of water through which varies directly as the head instead of following the more complicated law of the ordinary notch, Prof. O. V. P. Stout.

'An Observation upon annual Rings in Tree Growth,' Prof. F. W. Card, in which complete defoliation did not cause the formation of a second annual ring.

'Internal Temperature of Trees,' R. A. Emerson. Temperatures as high as 110° reached at a depth of one-half inch below the bark of trunks exposed to the sunshine; daily fluctuations greater in dead limbs than in live ones.

Owing to the late hour the following papers were read by title only: 'Notice of two Important Books on Systematic Botany,' Chas. E. Bessey; 'The Barites of Eastern Nebraska and the Bad Lands,' Erwin H. Barbour; 'Some Data as to Wind distribution of Seeds,' Ed. M. Hussong; 'Parasites of Nebraska Dogs,' Henry B. Ward; 'Discovery of the first Meteorite in Nebraska,' Erwin H. Barbour; 'Notes on Phyllopod Crustacea,' H. A. Lafler and A. S. Pearse; 'The Study of Botany in the School for the Blind,' Dr. C. E. Bessey.

The following officers for the ensuing year were elected: President, Dr. A. S. von Mansfelde; Vice-President, Dr. E. H. Barbour; Secretary and Treasurer, Prof. G. D. Swezey; Custodian, Prof. Lawrence Bruner; Directors, Dr. H. B. Ward, Prof. H. B. Duncanson, Mr. C. J. Elmore and Dr. H. Hapeman.

The next annual meeting will be held on the day following Thanksgiving. The volume of proceedings for 1894–95 is just issued. Price, 50 cents.

G. D. Swezey,
Secretary.