

criticisms, and it is probable that a careful consideration of them will enable Mr. Edwards still further to improve his, in many respects, excellent treatise. The remaining short contributions are a note on resultants, by Prof. Haskell; and collineation as a mode of motion, by Dr. Bôcher (originally delivered as a lecture before N. Y. M. Society (pp. 225-231). The usual notes, new publications, and index close the first volume of this new mathematical venture.

In the *Botanical Gazette* for June, Mr. A. F. Foerste has an interesting paper, illustrated, on the Identification of trees in winter.—Mr. Charles Robertson continues his notes on the mode of pollination of American plants.—Mr. A. P. Morgan describes two new genera of fungi belonging to the Hyphomycetes, *Cylindrocladium* and *Synthetospora*.

In the *Journal of Botany* for July, M. G. Masee describes and figures a new marine lichen from the coast of Scotland, *Verrucaria latevivens*, and continues his description of new species of fungi from the West Indies.—Mr. W. H. Beeby argues in favour of the occurrence of natural hybrids among plants. In the number for August, Rev. E. S. Marshall supports the claim of *Cochlearia granlandica*, and the editor that of *Sagina Boydii*, to be considered as British plants; both are figured. In the continuation of his Notes on *Potamogetons*, Mr. Arthur Bennett describes two new species, *P. Delavayi* from China, and *P. tricarinatus* from Australia.

THE articles in the *Nuovo Giornale Botanico Italiano* for July are all geographical. Among them Dr. A. N. Berlese and Signor V. Pegliore give a monograph of the Micromycetes of Tuscany, 293 in number. The list includes several new species, and one new genus, *Phaeopeltosphaeria*, belonging to the Sphaeriaceae.—Signor S. Sommier commences a very interesting description of the physical features of the lower valley of the Obi in Siberia, with some account of its botany.

IN Nos. 5 and 6 of the *Bullettino della Soc. Bot. Italiana*, most of the articles are also of local interest. Signor A. Jatta describes a new genus of lichens, *Siphulastrum*, from Tierra del Fuego.—Signor E. Baroni gives a full description of the anatomy of the fruit and seeds of *Eugenia myrtilifolia*.—Signor L. Re contributes an account of the spherites found in *Agave mexicana* and other Amaryllidaceæ.

SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, August 22.—M. Duchartre in the chair.—Heat of combustion of some chlorine compounds, by MM. Berthelot and Matignon. The method of the calorimetric shell was employed for determining the heat of combustion of certain acid bodies. Monochloroacetic acid, $C_2H_3ClO_2$, gave + 174.2 calories at constant volume, and + 173.9 at constant pressure, as the result of two combustions with camphor in presence of arsenious acid. The values obtained for trichloroacetic acid, $C_2HCl_3O_2$, were + 106.3 at constant volume, and 105.4 at constant pressure. Trimethylene chloride, $C_3H_4Cl_2$, burnt in the presence of an equal quantity of camphor, gave a mean of 3900 calories per gramme of the substance.—On glyoxylic or dioxyacetic acid, by the same.—M. Pasteur, in presenting to the Academy a work by Dr. Daremberg on Cholera, its Causes, and Means of Guarding against it, called attention to the following points: "Dr. Daremberg, in one of the principal chapters of his book, protests with great force against the pollution of the water-courses by drain-waters, and equally against the pollution of the soil by the distribution of these waters on the land under cultivation. He thinks that the germs of cholera, in the form of the bacillus which produces it, can remain living and virulent in the soil for several years, and eventually lead to the spread of the disease. Thus the cholera in the environs of Paris would have originated in cholera germs preserved since the last epidemic in 1884."—Thermo-chemical study of certain organic bodies with mixed functions, by M. Léo Vignon.—Quantitative determination of peptone, by precipitation in the state of peptonate of mercury, by M. L. A. Hallopeau. This method is claimed to be superior to the polarimetric, the calorimetric, and the absolute alcohol methods as being a complete precipitation admitting of more trustworthy measurements than the first, and less difficult than the second. A solution of peptone, which must be neutral or very slightly acid, is precipitated by a large excess of mercuric nitrate.

The precipitate of mercuric peptonate, white, flocculent, and bulky, falls almost immediately to the bottom of the vessel. It is allowed to settle, and then poured on to a filter of known weight, washing with cold water until no precipitate is produced by sulphuretted hydrogen. The increase in the weight of the filter, dried at 100° to 108°, represents the weight of the peptonate of mercury; multiplying this by 0.666 gives the amount of peptone present. The mercuric nitrate is readily obtained from the "pure" commercial nitrate. Since this contains an excess of free nitric acid, which partially redissolves the peptonate of mercury, the acid must be removed by heating the nitrate with ten times its weight of water for fifteen or twenty minutes, filtering and heating to near boiling in a porcelain capsule. Then stir and add a few drops of carbonate of soda until the precipitate of oxide of mercury is no longer redissolved.—Etiology of an enzootic disease of the sheep, called Carceag in Roumania, by M. V. Babes. In the very fertile and often submerged islands of the Danube, where the shepherds from Roumania and Transylvania congregate, and where there are always hundreds of thousands of sheep, a disease occurs among them, especially in May and June, to which often a fifth of the herd will succumb, especially if it should have been brought thither from a distant pasture. It is an acute malady of a febrile nature, combined with hæmorrhage and œdema, and always with hæmorrhagic and sometimes necrotic inflammation of the rectum. In the red corpuscles of the blood are found round, immovable cocci, often undergoing subdivision. They are very similar to those observed in the corresponding cow-disease known in America as the Texas fever.—On a new chemical function of the comma-bacillus of Asiatic cholera, by M. J. Ferran. The growth of this microbe is always rapid and luxurious in the ordinary culture solutions; if they contain milk-sugar, it is incomparably more so; but the growth ceases entirely as soon as the solution becomes acid by the development of lactic acid, and the vitality of the microbe is extinguished. It seems reasonable to employ lactic acid in lemonade against cholera, and to aid its action by the anæxosmotic power which morphin offers us; this substance would perhaps hinder the absorption of the toxic substances, and would prolong the action of the lactic acid by opposing its rapid elimination.

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