

Jane Donald. Many of the Palæozoic shells referred to Murchisonia do not agree with the type, and there are at least two separate groups distinguished by the outer lip. The typical group has a slit, the other merely a sinus. From the material at present available, in the British Isles as well as in America and the Baltic provinces, elongated forms with a sinus precede those with a slit. So far, no light is thrown on the question as to whether Murchisonia and Pleurotomaria were derived from the same stock, nor has the author yet met with any specimens showing a transition from sinus to slit.

PARIS.

Academy of Sciences, March 17.—M. Bouquet de la Grye in the chair.—Some remarks on the periods of double integrals and the transformation of algebraic surfaces, by M. Emile Picard.—Studies on vegetable earth, by M. Th. Schloesing. The earth is separated by a process of levigation into fractions, which are analysed separately. The most striking fact obtained by this method of working is the rapid change in the proportions of iron and phosphoric acid in the fractions. The ratio of iron to phosphorus, however, remained practically constant.—On the culture of the fodder beet, by M. P. P. Dehérain. The method of cultivation of the beet, which aims only at producing roots of the largest size, is faulty, as analyses of such roots show that they contain an undue amount of water and nitrates. By planting out so that smaller beets are obtained, it was found that although the gross weight per hectare was somewhat less in the latter case, the weight of dry material was greater and the loss of nitrates was reduced.—M. Yermoloff was elected a correspondent in the Section of Rural Economy in the place of the late Sir J. B. Lawes.—On regular groups of finite order, by M. Léon Autonne.—On the theory of algebraic functions of finite order, by M. Beppo Levi.—On the conservation of refractive energy in mixtures of alcohol and water, by M. A. Leduc. The refractive indices of mixtures of alcohol and water can be calculated from the refractive indices of the two constituents within the limits of experimental error, allowance being made for the contraction which takes place on mixing the two liquids.—On the mobility of the ions in gases, by M. P. Langevin.—Research on a unit for measuring the force of penetration of the X-rays and for their quantity, by M. G. Contremoulins. The principle adopted for these measurements is the comparison of the intensity of illumination of a fluorescent platinumcyanide screen with a screen artificially illuminated with a light of known intensity.—The heat of reaction between bodies in the solid and gaseous state, by M. Ponsot.—The heats of solution of solid and liquid ammonia taken at about -75°C ., and on the latent heat of fusion of solid ammonia, by M. G. Massol. The method adopted was to dissolve first liquid ammonia and then solid ammonia, both as near -75°C . as possible, in water in a calorimeter; the latent heat of fusion was thus obtained as the difference between these two results. The value thus found for the latent heat of fusion for a gram-molecule of solid ammonia was -1.838 , approximating to that of water, -1.43 .—The volumetric estimation of thallium, by M. V. Thomas. The author has modified the iodometric method of Feit, in such a manner as to avoid the conversion into the sulphate. Test analyses are given showing the accuracy of the method as modified.—Acid and basic sulphates of neodidymium and praseodidymium, by M. Camille Matignon. Four new sulphates are indicated, their properties determined, and their thermochemical relations examined.—A method for the alkalimetric estimation of disodium-methylarsenate or arrhenal, by M. A. Astruc. The method suggested is based on the fact that in the presence of rosolic acid one molecule of this substance requires one molecule of a monobasic acid for neutralisation.—On some derivatives of arabinose, by M. G. Chavanne. The exact conditions are given for the production of a pure substance in the interaction of arabinose with acetyl chloride and bromide. The preparation and properties of the phenylhydrazone of arabinose are also described.—On the supposed binaphthalene-glycol, by M. R. Fosse. It is shown that the body described as binaphthalene-glycol is in reality dinaphthoxanthidrol, and that the derivatives of the supposed glycol are similarly constituted.—On the pseudo-acids, by M. P. Th. Muller. For a true acid the difference of the molecular refractions of the acid and its sodium salt should be equal to the difference of the molecular refractions of sodium hydrate and water, and for a large number of acids of the order of acetic this has been found to be the case, the value of this constant difference being about 1.55. Any marked variation from this value would indicate that the constitution

of the acid was different from its neutral salt. This the author has found to be the case for a certain number of isonitroso-compounds of the fatty series.—On the classification of the Cercomonadines, by M. Louis Léger.—The use of organic arsenic and phosphorus compounds in the treatment of tuberculosis, by M. A. Mouneyrat. Sodium methylarsenate taken alone has no effect in preventing the excessive elimination of phosphorus in tuberculosis. But by the administration of this salt, together with an easily assimilable phosphorus compound, such as nucleinic acid, the desired result was obtained. A marked improvement was noticed in less than a month, with gain in weight, increase in appetite, disappearance of the nocturnal sweats, and of fever. At the end of a month or six weeks the sputum became normal, losing its purulent character and, in the majority of cases, with the disappearance of the tubercle bacillus.—The action of temperature on the mineral absorption in etiolated plants, by M. G. André. It was found that the quantity of ash in 100 parts of the dried material is always greater in the normal plant than in the plant etiolated at 15°C .; the reverse was the case in an etiolated plant growing at 30°C ., the difference being entirely represented by silica.—On the assimilation of carbon by a green alga, by M. P. G. Charpentier.—A bacteriological study of the *massif* of Mont Blanc, by M. Jean Binot. The number of germs in the air at the summit of Mont Blanc is extremely small, varying between four and eleven per cubic metre, and increases as the valley is approached. The ice, snow and water on the mountain were made the subject of a separate study. A virulent pyocyanic bacillus was isolated from the ice at the summit, and an exceedingly pure water taken near the Montanvert showed twelve colonies of a virulent *Bacterium coli* per cc.—Experimental researches on the mental life of a xiphopage, by MM. N. Vaschide and H. Piéron.

DIARY OF SOCIETIES.

WEDNESDAY, APRIL 2.
SOCIETY OF PUBLIC ANALYSTS, at 8.
THURSDAY, APRIL 3.
RÖNTGEN SOCIETY, at 8.30.—X-ray Diagnosis of Renal Calculus: Dr. Ch. Leonard.
LINNEAN SOCIETY, at 8.—On the Composite Flora of Africa: W. Spencer Moore.—A Halonial Branch of *Lepidophytos fuliginosus*: Prof. F. E. Weiss.
FRIDAY, APRIL 4.
GEOLOGISTS' ASSOCIATION, at 8.—Klondike, its Geology and Mining: Prof. H. A. Miers.

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