

Societies and Academies.

CAMBRIDGE.

Philosophical Society, July 20.—Sir J. J. Thomson: The structure of light.—A. S. Eddington: Internal constitution of the stars.—H. Nagaoka: The transmutation of mercury into gold.—W. Burnside: On groups of linear substitutions which contain irreducible meta-cyclical subgroups.—S. Pollard: On Hausdorff's proof of the extended Riesz-Fischer theorem.—M. H. A. Newman: On the theorem of Pappus.—C. G. Darwin: Notes on optical constants.—R. de L. Kronig: The theory of the influence of magnetic fields on the stopping power of gases for α -particles.—J. T. Saunders: The trichocysts of paramoecium.—V. Nath: Spermatogenesis of *Lithobius forficatus*.—H. Munro Fox: The effect of light on the vertical movement of aquatic organisms.—E. C. Francis: (1) On differentiation with respect to a function. (2) The Lebesgue-Stieltjes integral.—D. H. Black: The β -ray spectrum of the natural *L*-radiation from radium B.

PARIS.

Academy of Sciences, August 24.—C. Sauvageau: The presence of free iodine in *Polysiphonia Doubletii*. A definite proof is given that iodine in the free state is present in this plant.—L. Escande: Similitude extended to high velocities. Supplementary researches on the similitude of viscous fluids.—R. de Malleman: The calculation of the rotatory power of a tetrahedral molecule. It is concluded that the existence of rotatory power, in an asymmetric molecule, is not incompatible with optical isotropy of the atoms.—Agafonoff and Mlle. Malichef: Some considerations on the lower loess of the neighbourhood of Paris.—J. Cabannes and J. Dufay: Measurement of the height of the ozone layer in the atmosphere. The assumption is made that the ozone layer is so high that the sunlight is first filtered by the ozone and then diffused by the lower layers of the atmosphere. The heights deduced are about 50 kilometres.—Bordas, François-Dainville, and Roussel: The elimination of benzoic acid and the benzoates in the body economy. In six out of seven cases, the complete elimination of benzoic acid took three days, and it is concluded that the continuous administration of benzoates, as when used as a food preservative, might, owing to accumulation in the body, give rise to serious troubles.—Paillet: The *grasserie* of the silkworm. This disease causes the most serious losses in the silkworm industry, and has been more prevalent in 1925 than in the preceding years. There is no certain cure for the disease, but some precautions are detailed which reduce the chances of infection.

August 31.—André Blondel: A modification of Lord Rayleigh's photometric method, rendering possible the use of a diffusing comparison surface in photometry.—Michel Akimoff: Confluent hypergeometric functions.—Nicola Obrechhoff: The summation of Fourier's series of analytical functions.—Kolossof: General solutions.—Carl A. Garabedian: Solution of the problem of the thick rectangular plate having two opposite sides supported and two sides free, and carrying a load uniformly distributed or concentrated at its centre.—Hoegelen: Circular arcs of uniform thickness. Application to arched barrages.—D. Foucher and E. Rouget: Contribution to the study of the mistral. The acceleration. An experimental study in the Rhone Valley shows that the velocity of the wind is the resultant of two velocities, one determined by the barometric gradient, the other caused by local conditions (orographic velocity).—Jules Amar: The mode of walking known as "*sur la pointe des pieds*." The mode of walking

described by the author (with MM. d'Arsonval and Gautiez) has been misunderstood: details of the correct method are given.—Fernand Wyss: The biochemical estimation of insulin. A method of testing the strength of insulin *in vitro* is given, based on the retardation of the oxidation of resorcinol by hydrogen peroxide in the presence of insulin.

CAPE TOWN.

Royal Society of South Africa, August 19.—S. H. Haughton: On some new mollusca from tertiary beds in the west of the Cape Province. The following new mollusca are described from a deposit at Doornbaai on the Van Rhyndorp coast, south of the Olifants River mouth: *Mytilus tomlini*, sp. nov. *Donax (Iphigenia) rogersi* sp. nov. and *Chamelea Krigei* sp. nov. The beds from which the shells were obtained average about 10 feet in thickness and form the upper portion of marine cliffs, which attain a height of 50 to 60 feet above sea-level.—R. S. Adamson: On the anatomy of some shrubby Iridaceæ. In the S.W. Cape region there are five species of the Iridaceæ which form woody stems with secondary growth. The main features of the structure of these plants were described. While the general type of secondary growth is the same as that occurring in other Monocotyledons with secondary thickening, there are many differences in detail. The secondary tissues are much more compact and in some of the plants show a definite arrangement into concentric growth zones.—V. A. Wager: The breeding habits and life-histories of some of the Transvaal Amphibia. In this paper the author describes the life-histories and habits of two species of Transvaal batrachia, *Chiromantis xerampelina* and *Rappia marmorata*; both are tree-living, the terminal phalanges being provided with adhesive discs. In the first-named species the eggs are laid in the form of a large white glutinous mass on branches overhanging water. The tadpoles drop from the egg-mass into the water where they complete their metamorphosis. The fore-limbs, before breaking through the operculum, are already provided with phalangeal discs. The tadpole does not increase in size during metamorphosis, and when the tail disappears the young frog leaves the water for an arboreal existence. In *Rappia marmorata* the eggs are laid in a jelly-like mass under water. A peculiarity of the tadpole is the absence of horny jaws, comb-teeth, or papillæ of the mouth, which bears a superficial resemblance to that of the tadpole of *Xenopus laevis*, but from which it can be readily distinguished by the absence of the two tentacles at the sides of the mouth. From this it is concluded that the tadpole feeds on micro-organisms in water drawn through the unusually large spiracle, and this is borne out by an examination of the intestinal contents, which includes amongst other organisms *Euglena*, *Volvox*, and a few minute annulates.—B. F. J. Schönland: Cathode ray scattering. Preliminary measurements of the scattering of fast cathode rays through 90° have been made under conditions which ensure "single" scattering. Values for the nuclear charges of gold and aluminium are derived from these results which lie within 12 per cent. (the experimental error) of the true values. They support the addition of the relativity correction to the orbit of a β -particle, this correction having the high value of 2.40 in the present case.—C. W. Kops: Marriage and mortality rates of the population of the Union of South Africa according to the conjugal condition of the population. The paper is a preliminary investigation into the marriage rates among widowed persons and never-married persons, and the death rates among widowed, never-married, and married persons.