Societies and Academies.

LONDON.

The Optical Society, Oct. 15.—**F. Twyman** and **A. Harvey**: The validity of the Schwarzschild relation as applied to the use of the logarithmic sector. A direct experimental test is made of the Schwarzschild relation as applied to the logarithmic sector used in conjunction with a quartz spectrograph. The relation is found to hold within the limits of the experiments, from which it follows that the length of a spectral line on the photographic plate is proportional to the logarithm of its intensity.—**F. Twyman**: The 'Spekker' photometer for ultra-violet spectrophotometry. With the original Hilger sector photometer a glass disc was supplied, with its absorption curve in the ultra-violet. This was to enable a calibration of the sector to be made on each photographic plate, and thus to avoid errors due to any assumption concerning the Schwarzschild constant. Although the original rotating sector withstood the criticisms levelled against it on the score of intermittency, there were a number of real objections to its use. The photometer described in the present paper is now made by Adam Hilger, Ltd., under the trade mark 'Spekker'. The risk that the intensity of illumination from the two aspects of the light source may be unequal is overcome by the use of two rhombs.

PARIS.

Academy of Sciences, Sept. 14.—**Serge Bernstein**: The absolute maximum of a trigonometrical summation.—**E. Bataillon** and **Tchou Su**: The experimental dissociation of the male and female kinetic rhythms in the normally impregnated egg of *Bombyx*.—**Depreux**: The resistance of the air behind projectiles.—**P. R. Bohn**: The mechanism of the synthesis of fats at the expense of glucides. A comparative study of the action of *Sterigmatocystis nigra* on cultures containing dextrose and levulose, to see if there is any relation between the presence of the aldehyde and ketonic group and the formation of fat. The proportion of fat in the mycelium is higher as the concentration of the sugar increases: the change in the amount of proteins is sufficient to prevent any positive conclusions being drawn regarding the effect of substituting levulose for dextrose in the cultures.—**Raoul Lecoq**: The production of an osteo-dystrophic syndrome in the guinea-pig by disturbance of the mineral equilibrium.—**H. Quéré**: The oxidation of the alcohols by the acetic ferments, considered as a form of cell respiration. A comparison of the oxidation of ethyl, propyl, isobutyl, and isoamyl alcohols shows that the amounts of oxygen used up are approximately in inverse proportion to the molecular weight of the alcohol. The mechanism of oxidation is analogous with the mechanism of respiration.—**P. Cayrol**: The action of various halogen derivatives on alcoholic fermentation. From a study of the action of a number of halogen compounds on the process of fermentation, the conclusion is drawn that the action of the halogen atom depends on its position in the molecule: the most active halogen derivatives appear to be those which are hydrolysed at the ordinary temperature.—**Paul Wintrebert**: Sketches of *Discoglossus pictus* at the end of the blastula and at the end of the neurula stages.—**P. Delanoë**: The jackal and hedgehog reservoirs of the Moroccan spirochæte *Sp. hispanicum* var. *marocanum*. The following animals have now been proved to be carriers of the Moroccan spirochæte: porcupine, merion, fox, jackal, and hedgehog.

Sept. 21.—**Louis Lapicque**: The measurement of large chronaxies. Remarks on a note by M. Bourguignon. The author states that there is no reason to use different methods for measuring large and small chronaxies.—**Lucien Féraud**: The periodicity conditional to the neighbourhood of a point of stable equilibrium.—**A. Etévé**: Anemogirouttes. A discussion of instruments in use for the automatic control of aeroplanes.—**P. Fourmarier**: Studies of photoelectric cells as depending on the frequency of illumination.—**J. Fallou**: Measurements of the propagation constants of an aerial cable with earth return, as a function of the frequency.—**J. Bougault** and **J. Guillou**: Some reactions of certain barbituric derivatives (veronal, dial, gardenal, etc.). Study of the reaction of bromine and iodine in alkaline solution on some barbituric derivatives in use in medicine.—**P. Fallot**: The marginal inequalities of the limestone chain of the Rif to the north of Oued Lau.

LENINGRAD.

Academy of Sciences—*Comptes rendus*, No. 5, 1931.—**L. Berg**: The Black Sea sprat. A description and discussion of the synonymy of the Black Sea sprat, which is considered to be a subspecies of the Atlantic sprat and named *Spratella sprattus phalerica* (Risso).—**N. Vlodavec**: The extraction of alumina and alkalis from the nephelines and nephelinites of the Chibin Mountains. Discussion of commercial methods based on laboratory experiments.—**S. Kurbatov**: The pyrophyllite from the Tchistaya-Gora deposits in the Southern Ural. A talcum-like rock from the Tchistaya-Gora proved to contain 73·55 per cent of pyrophyllite, 23·63 per cent of quartz, 1·68 per cent of sericite, and 0·62 per cent calcium and magnium carbonates. This is the fifth known bed of pyrophyllite in Russia.

Comptes rendus, No. 6, 1931.—**V. Vernadskij**: (1) Biogeochemical studies of the phenomena of life. (2) The influence of living organisms on the isotopic mixtures of chemical elements. Both papers contain an exposition of general theoretical ideas on the subject.—**V. Vernadskij** and **A. Vinogradov**: Chemical composition of *Lemna* as a specific character. Analysis of four different species of *Lemna* proved that there exist definite and constant differences in chemical composition between species. Thus *L. polyrrhiza* and *L. trisulca* contain more carbon than *L. minor* and *L. gibba*, while *L. trisulca* is richer in manganese than any other species. In all Lemnaceæ the quantity of manganese is higher than that of iron.—**K. Nenadkevic**: An electro-colorimetric method for the determination of small quantities of manganese. The method is based on the electrolytic oxidation of manganese salts by ozone and oxygen *in statu nascendi*.—**V. Barovskij**: The first representative of the genus *Plateros* (Coleoptera, Lycidæ) in the Russian fauna. Description of *Plateros ussuriensis*, sp. n. from the Ussuri region.

Official Publications Received.

BRITISH.

The Edinburgh and East of Scotland College of Agriculture. Calendar for 1931-1932. Pp. 96. (Edinburgh.)

Philosophical Transactions of the Royal Society of London. Series A, Vol. 230, A687: A Research on Faraday's "Steel and Alloys". By Sir Robert Hadfield. Pp. 221-292+plates 4-12. (London: Harrison and Sons, Ltd.) 14*s*. 6*d*.

First Annual Report of the Sugarcane Research Station of Department of Agriculture, Mauritius, for the Year 1930. Pp. 21. (Mauritius.)

Department of Scientific and Industrial Research. Building Science Abstracts. Vol. 4 (New Series), No. 8, August. Abstracts Nos. 1339-1546. Pp. 259-294. (London: H.M. Stationery Office.) 9*d*. net.

FOREIGN.

Annuaire de l'Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique, 1931. 97e année. Pp. 282+6 planches. (Bruxelles: Maurice Lamertin.)