

Societies and Academies.

LONDON.

Society of Public Analysts, Dec. 4.—A. P. Laurie: The methods of examining pictures. An outline was given of the composition of the different pigments used for old illuminated MSS. and oil paintings, and methods of sampling by means of a micro-borer and examination by means of a microscope polariscope were described; a summary of micro-chemical tests for the various classes of pigments was given. The use of X-ray photography and ultra-violet rays was discussed, and it was shown how an examination of the brush strokes in an oil painting, considered in conjunction with the chemical and optical properties of the pigments, enabled a judgment to be formed as to whether the whole work had been produced in one studio and at the same period.—S. Glasstone and J. C. Speakman: The quantitative analysis of mixtures of nickel and cobalt. Electrometric titrations of nickel and cobalt solutions with potassium cyanide, with nickel and cobalt indicator-electrodes, respectively, have established the soundness of the theoretical basis of the Rupp and Pfennig method of determining these metals. A modified iodimetric method has also been developed for determining small amounts of cobalt in the presence of nickel.—J. C. Baird and J. H. Prentice: The changes with age of the hydrogen ion concentration of egg white and egg yolk. Determinations of hydrogen ion concentration by means of a quinhydrone electrode indicated that the normal pH value of fresh egg white is approximately 8.6, and that there is a rapid rise in the course of the first week of storage to a level of about pH 9.0, at which figure the reaction remains fairly constant. The fresh yolk has a reaction of approximately pH 6.0, which in the course of ten weeks rises to about 6.2. The refractive index of the egg white is constant at about 1.360.

PARIS.

Academy of Sciences, Nov. 12.—Pierre Weiss, R. Forrer, and F. Birch: The magnetisation to saturation of the nickel-cobalt alloys and the atomic moments of nickel and cobalt.—de Sparre: The necessity of taking into account the contraction on setting in the calculation of the work in armoured concrete.—N. Lusin and W. Sierpinski: The classes of the constituents of an analytical complementary.—Georges Bouligand: The successive fronts of an ensemble of points.—A. Magnan and A. Sainte-Lagué: New experiments on the resistance to the progress of fish in water. The experiments were carried out on 22 species of dead fish loaded so as to fall in water under the action of gravity: the motion was followed with a kinematograph. For most fishes the resistance was found to be constant, but with one, the ray, the resistance increased with the velocity.—René Audubert: The influence of the nature of the electrolyte on the potential of inversion of the photovoltaic effect.—Mme. Ramart-Lucas: The comparative stability of isomers according to their absorption spectra. The relation between the absorption in the ultra-violet and structure of the diaryl derivatives of ethylene and ethane. The ultra-violet absorption curves differentiate the structures of isomers with more certainty than any other physical property.—G. Baeckeroot: The presence of fossils of Aquitanian age in the scattered quartzite grits at the surface of the Moselle plateau.—F. Labrousse and J. Sarejanni: Changes of reaction and phenomena of oxido-reduction observed in the course of the development of some fungi. The increasing alkalinity of the culture medium shown by certain fungi is not due to the formation of ammonia.

No. 3138, Vol. 124]

As regards the reducing power, all the fungi studied except one (*Thielavia basicola*) decolorise cresyl blue.—Sébastien Sabetay: The presence of β -ionone in a natural product. Commercial essential oil of *Boronia megastigma* contains a good proportion of β -ionone.—A. Babes: The thymus and growth.

CRACOW.

Polish Academy of Science and Letters, Oct. 7.—Lad. Natanson: The theorem of the Eiconnel and Fermat's principle.—K. Kordylewski: The variable star YY Sagittarii. The elements are calculated from 436 observations taken during 1925–29.—J. Pagaczewski: The variable star 259.1928 Cassiopeæ. The provisional elements calculated from 118 observations on 32 nights during 1928–29.—J. Mergentaler: The variable star XX Cephei. The provisional elements deduced from 147 observations during 1929.—Wlad. Gorczyński: The high values and energy losses of the solar radiation observed in desert regions and on tropical mountains.—L. Chrobak: Contribution to the technique of the X-ray examination of easily deformable crystals.—Mlle. A. Dorabalska: The application of the adiabatic microcalorimeter to measurements of the quantities of heat emitted by uranium, thorium, and radioactive minerals. The instrument used was capable of measuring thermal effects of the order of 10^{-4} to 10^{-5} calories per hour, and was applied to measuring the radiation of U_3O_8 , ThO_2 , and pitchblende.—K. Dziewonski and T. Waszkowski: Researches on α -methyl-naphthalene.—Mme. T. Cyge: Anatomical and ecological studies on the leaves of indigenous orchids.—K. Mielczarek and W. Brykalski: The pollen analysis of Iwiec peat bog.—Mlle. I. Toruwska: Studies on the life of the iron bacteria.—L. Ejsmont: The two genera of Schistosomatides of birds.—Z. Szantoch: The histogenesis of the nerve ganglia of the heart.—B. Dybowski: Contribution to our knowledge of the Siberian seal.—B. Dybowski: The Polychaetes of Lake Baikal.

LENINGRAD.

Academy of Sciences (*Comptes rendus*, No. 17).—D. Beliankin: Chemical degeneration of dinas. Analyses of a dinas brick subjected more than 600 times to the action of a furnace showed a considerable increase in Fe_2O_3 , Fe_2O_5 , and MnO , apparently received from the gases in the furnace.—L. Lozina-Lozinskij: The phenomena of chemotaxis in connexion with the choice of food by infusoria. The chemotactic reactions and the reactions of ingesting food particles have apparently a common physiological basis. Chemical properties of the substance used in the experiment have the same effect on the reactions of locomotion, digestion, and even of division, namely, either increasing or decreasing the rate of all these functions.—A. Tsvetkov: Changes in the coloration of apatites submitted to heating. If apatites are heated to $1700^\circ C$., regular changes in colour are observed, there being a definite colour corresponding to each stage of temperature. This is an irreversible process.—S. F. Tsarevskij: Contribution to the classification and distribution of the lizards of the genus *Phrynocephalus*. A study of the cranial characters permitted the author to evaluate them from the point of view of systematics, which so far have been based on external features only. *Ph. ludovici* Mocq. is regarded as identical with *Ph. axillaris*, and *Ph. erythrurus* Zugm. identical with *Ph. lidskii* Berd. J. Argentinovskij: A new cinnabar ore deposit in the Urals. The new deposit has been discovered 118 km. north-west of Sverdlovsk (Ekaterinburg). The veins of the ore are included in quartz porphyryite. This is the third known deposit of cinnabar in the Ural mountains.

ROME.

Royal National Academy of the Lincei: Communications received during the vacation.—A. Angeli and Z. Jolles: Reduction of normal diazo-hydrates. The formation of hydrocarbons from the corresponding normal diazo-hydrates by the action of weak reducing agents indicates that an unstable compound, such as phenyldi-imide, is formed as an intermediate step in the change. That this is actually the case is shown by the formation of *s. benzoylphenylhydrazine* when the reduction is effected in presence of benzaldehyde. Various other reactions are explainable similarly. The transformation of the normal diazo-hydrate into the compound $C_6H_5 \cdot N : NH$ by reduction renders it probable that the hydrate has the structure, $NH : NO \cdot C_6H_5$. It is possible to remove, not only the oxygen atom, but also, by the action of nitroxyl, the iminic residue from the diazo-hydrate.—D. Th. Egoroff: *W* congruences with regulated focals.—M. Kourensky: The method of integration of the equation to the partial derivatives of the second order with a single unknown function and two independent variables.—A. M. Bedarida: The theory of ideals of a finite algebraic body (3).—B. Colombo: Bianchi's problem regarding Lamé families.—B. de Finetti: Functions with aleatory increment.—E. Raimondi: A new phenomenon of aerodynamics.—C. Cannata: The ballistic hypothesis and the verification of the law of areas in the orbits of telescopic double stars. Any possibility of verifying the ballistic principle on the basis of observations on telescopic doublets is out of the question.—M. Tenani: Theoretical-experimental considerations on the course of the tides in the Adriatic (2). Experimental verification has been attained, in the case of the Adriatic Sea, of deductions previously drawn from theoretical considerations. This result, together with the calculation, of considerable practical importance, of the longitudinal displacements of the water during the day through the Straits of Otranto, confirms the possibility of extending analogous considerations and calculations to other seas.—B. Rossi and G. Bernardini: The photographic action of low-speed electrons. Using oiled Eastman plates, Kenneth Cole and other observers have found that low-speed electrons with velocity lower than that corresponding with 25 volts have no detectable effect on the photographic plate. By means of a special arrangement, the authors are able to photograph electrons with velocity 17.5 volts with ultra-sensitive Cappelli plates. Since the energy possessed by these electrons still greatly exceeds that necessary to affect a silver bromide granule, it is not improbable that this limiting voltage is capable of further reduction.—F. de Carli: Viscosity isotherms of binary mixtures (3): the system nitrobenzene-stannic chloride. Thermal analysis of this system confirms the formation of only one complex compound, $C_6H_5NO_2 \cdot SnCl_4$, melting at about $-11^\circ C$. The density isotherm for 15° reveals a sensible increase in volume, which denotes a dissociating action, probably due to the nitrobenzene. The viscosity isotherms for 15° and 25° exhibit distinct maxima, but the greatest divergences from the calculated values are shown by solutions containing about 50 per cent of nitrobenzene, whereas the compound formed contains 31.18 per cent. Thus, the maximum of viscosity is displaced towards the more viscous component, a phenomenon which is manifested by liquids in which the complex is highly dissociated. It may be, however, that molecules of the composition $2C_6H_5NO_2 \cdot SnCl_4$ exist in a stable form in the liquid state but decompose on solidification.—G. Charrier: Condensation of 1-amino-2-

phenylazonaphthalene-4-sulphonic acid. Dehydrogenation of this acid, suspended in nitrobenzene, by means of an acetic acid solution of chromic anhydride, yields a sulphur-containing condensation product exhibiting the characters of a polycondensed dinitrazole derivative. To this is attributed provisionally a constitution analogous to that of naphthylene dioxide, from which it may be theoretically derived by replacing the two oxygen atoms by two SO_2 groups and attaching the 2-*N*-phenylated triazole nuclei, in the 1- and 3-positions of the triazole nucleus, in the 1- and 2-positions of the two naphthyls.—E. Pace: Organo-aromatic derivatives of boron. Descriptions are given of the methods of preparation and properties of: borophenyl chloride, $C_6H_5BCl_2$; phenylborine or boroniline, $C_6H_5BH_2$, which readily oxidises in the air, giving monophenylboric acid; and borobenzene, $C_6H_5 \cdot B : B \cdot C_6H_5$, which decomposes in the air to form a pasty mass, probably borooxybenzene.—G. Sani: The reducing activity of roots of the Gramineæ (3): reduction of calcium nitrate. The reduction of calcium nitrate by maize roots is inhibited by the presence of small proportions of potassium hydroxide, chloroform, or formaldehyde, and also by heat or desiccation. In small quantity citric acid enhances the effect, but sulphurous acid is without influence. During the reduction the reaction of the medium changes from acid to alkaline, the alkaline product or products probably being the active agent in arresting the change.—M. Anelli: Covering phenomena in the Emilian Apennines.—R. Savelli and N. Soster: Sudden variations in the leaf form of *Cannabis sativa* L. Hemp exhibits two distinct variations of leaf shape, characterised by the replacement of the normal palmate type by a single margin, one being pinnatifid (lobed) and the other entire (simple leaf). The former represents a stable mutation, recessive with respect to normal, whereas the second must be regarded as a non-fixable sport, which affects whole plants or parts of plants and arises as a reaction to abnormal stimuli, with no necessary relationship to the pinnatifid form.—Giulio Cotronei and Aldo Spirito: Zoological constitution and grafting (1): Experiments with Anura and Urodela.—Aldo Spirito: Processes of regeneration and of regulation in the encephalic region of the embryos of Urodela (3). With *Triton cristatus*, at the stage of primary optical vesicle not yet introflexed, it is possible, by means of a technique outlined, to realise the regeneration of a more or less marked, entire prosencephalic wall. Such regeneration is followed by regulation phenomena which induce the formation of parts comparable with cerebral hemispheres, but neither with Anura nor with Urodela do the dimensions of the regenerated parts reach those of the corresponding normal parts.—P. Pasquini and A. della Monica: Regeneration of the crystalline in the larvæ of Anura. The faculty of regeneration possessed in the eye of Urodela, by the cells of the iris for developing a crystalline, is extended to Anura (*Rana* and *Bufo*), in the eye of which analogous phenomena are exhibited as a result of the removal of the normal crystalline: mainly the proliferation and consequent spreading of the leaflets of the iris, which lead to the metaplastic formation of a new lens. The latter is at first continuous with the iris, usually with the upper edge, but exceptionally also with the lower edge, but later becomes independent.—M. Curzi: A pseudo-rotting of the caryopsis of wheat. A sample of Arditi wheat, which had undergone auto-heating in the ear after reaping, was found to be attacked by *Acremonia thermophila* n. sp., which is capable of developing between 30° and $52^\circ C$.

SYDNEY.

Linnean Society of New South Wales, Oct. 30.—
 A. Jefferis Turner: Revision of Australian Oenochromidæ (Lepidoptera) (1). The Oenochromidæ display considerable variation in structure and, being the most primitive Geometrites, they throw much light on the phylogeny, not only of the group as a whole, but also of the constituent families. In this first part of the revision, sixty-four species belonging to ten genera are dealt with, two genera and ten species being described as new.—Rev. H. M. R. Rupp: Variations in certain orchids. Attention is directed to frequent variations of *Dendrobium speciosum* Sm., and a form approaching *D. gracilicaule* F. v. M. is described as a new variety. Points of distinction are given between the northern form of *Prasophyllum intricatum* Stuart, and the typical form of the southern States. A red-flowering form of *Pterostylis ophioglossa* R. Br., confined to high gullies in stony hills, is described as a new variety.—Frederick H. S. Roberts: A list of the Australian Bombyliidæ of the subfamilies Exoprosopinæ, Anthracinæ, and Bombyliinæ in the German Entomological Museum, Berlin. The subfamily Exoprosopinæ is represented by the genera *Hyperalonia* Rond. (7 species), *Exoprosopa* Macq. (1 species), *Villa* Lioy (4 species), and *Pseudopenthes* Roberts (the genotype). The genus *Anthrax* of the Anthracinæ is included, two species being represented. Of the Bombyliinæ, *Bombylius* Linn. has two species, *Systoechus* Loew two species, and *Sisyromyia* White two damaged specimens.—A. M. Lea: Descriptions of new species of Australian Coleoptera (20). Forty-seven new species of the families Mordellidæ and Curculionidæ.—J. R. Malloch: Notes on Australian Diptera (22). Notes on members of the genera *Celeator*, *Dasyortalis*, *Duomyia*, *Euprosopia*, *Pterogenia*, *Naupoda* and *Lamprogaster* of the family Ortalidæ. A new subgenus of *Duomyia* and a new species of *Lamprogaster* are described.

VIENNA.

Academy of Sciences, Oct. 17.—F. Heritsch: The tectonic position of the Hochwipfel- and Nassfeld-facies in the carboniferous of the Carnic Alps.—A. Stock and W. Zimmermann: The vapour pressure of mercury at low temperatures.—F. Hernier: The three isomeric nitro- and amino-phenyl-1-dimethyl-3, 5-triazoles-1, 2, 4, and some of their salts.—L. Kober: Structural elements of the east and south Carpathians.—F. Blank and F. Urbach: Sols in crystals. To elucidate the formation of crystal-sols the solubility of gold in molten alkali halides was explored.—O. Abel: Explanation of the crawling tracks in the sandstone of Greifenstein near Kierling in the Wienerwald. Observations on the seashore of the South African coast in Algoa Bay near Port Elizabeth and in False Bay near Muizenberg in August and September of this year have led to complete explanations. The ebb-tide leaves a fine hard sand on which *Bullia* snail-shells leave their tracks.—A. Thiel: Sensitiveness and resistance to alkalis in phthaleins and sulphophthaleins.—H. v. Euler and B. Jansson: Catalytic hydrogen peroxide decompositions by metallic compounds.—G. Bredig, S. R. Carter, and M. Enderli: The equilibrium of carbon dioxide evolution from formic acid and its potential.—C. Neuberg and Max Scheuer: Detection and isolation of methyl-glyoxal formed biochemically as oxime.—E. Berl and H. H. Saenger: The system $N_2O_5-HNO_3$.

Oct. 24.—H. V. Graber: Geological and petrographical researches on the Upper Austrian and Bavarian primitive rocks.—H. V. Graber: Mixed rocks from the Upper Austrian and Bavarian primi-

tive rocks.—A. Dadiou and K. W. F. Kohlrausch: Studies on the Raman effect (5). The Raman spectrum of organic substances, C=O and C=C double-linkages, halogen derivatives; 27 substances were examined. An attempt was made to connect frequency with molecular structure.—S. Loewe and H. E. Voss: Preparation, properties, and testing of a male sexual hormone. A search for a male counterpart of the female thelykinin. The active substance is possibly soluble in water and weak acids as a colloid, freely soluble in alcohol, ether, and oil. Stable in aqueous solution for twenty-four hours, in organic solvents for at least some weeks. Not species-specific, preparations from testicles of ox and guinea-pig acting on mouse like mouse-products. The aqueous preparations lead to fatal general poisoning. The publication made now is a transcript of a communication deposited until seal in 1927, but now announced because others are publishing the effects of testis extract injection.—R. Singer: Progress and result of a botanical expedition to the Caucasus in 1929. The south-west region was explored: Gultschj, Kunjum, Schariwzek, Zuzchurtu, Taurari. The primitive forest finds its limit at 2000-2400 metres. A provincial museum at Sugdidi and a botanical garden near Batum proved helpful.—A. Steinböck: Hydrobiological work in the Tyrol alps. Alpine lakes were explored at and above 2000 metres. The fauna included Turbellaria and trout.—M. Beier: Results of a zoological expedition to the Ionian Islands and the Peloponnesus (1) and (2).

Oct. 31.—M. Beier and F. Silvestri: Results of a zoological expedition to the Ionian Islands and the Peloponnesus (3). Thysanura.—R. Kloimwieder: The tubular cells of Fumariaceae, especially those of the genus *Dicentra*. These cells contain poisonous alkaloids. The plants seldom suffer from grazing or from fungus parasites. Feeding experiments on snails gave confirmatory results.—M. Blau and E. Rona: Communication of the Radium Institute (241). Further contributions to ionisation by H-particles.—K. Zentner: The efficiency of sand-blasts.

Official Publications Received.

BRITISH.

- Ceylon Journal of Science. Section D: Medical Science. Vol. 2, Part 3: The Identification of the Land Snakes of Ceylon. By Dr. Lucius Nicholls. Pp. 91-157. (Colombo: Bacteriological Institute; London: Dulau and Co., Ltd.) 3 rupees.
- Air Ministry: Aeronautical Research Committee. Reports and Memoranda. No. 1199 (Ae. 360): Skin Friction and the Drag of Streamline Bodies. By Prof. B. M. Jones. (T. 2709 and (a) and (b).) Pp. 12+8 plates. (London: H.M. Stationery Office.) 9d. net.
- Modern Mining Explosives. Presidential Address delivered October 17th, 1929, by Dr. William Cullen. Pp. 36. (London: The Institution of Mining and Metallurgy.)
- Proceedings of the South London Entomological and Natural History Society, 1928-29. Pp. xx+98+13+3 plates. (London.) 10s. 6d.
- Sale of Food and Drugs Acts. Extracts from the Annual Report of the Ministry of Health for 1928-1929 and Abstract of Reports of Public Analysts for the Year 1928. Pp. 15. (London: H.M. Stationery Office.) 1s. 6d. net.
- Society of Chemical Industry: Chemical Engineering Group. Proceedings, Vol. 10, 1928. Pp. 132. (London.) 10s. 6d.
- London School of Hygiene and Tropical Medicine. Report on the Work of the School for the Year ended July 31st, 1929. Pp. 36. (London.)
- British Photographic Research Association. Report for the Year 1928-29. Pp. 15. (London.)
- International Federation of University Women. Bulletin No. 11: Report of the Fifth Conference, Geneva, August 7 to August 14, 1929. Pp. 155. (London.)
- Man and his World in the Light of Emergent Evolution: a Synopsis of the Course of Lectures delivered by Members of the University of St. Andrews under the Adult Education Scheme for Fife and Stirlingshire in 1929-1930. Pp. ii+57. (St. Andrews.)
- Canada. Department of Mines: Mines Branch. Investigations in Ceramics and Road Materials (Testing and Research Laboratories) 1927. (No. 697.) Pp. ii+80. (Ottawa: F. A. Acland.)
- Journal of the Chemical Society. November. Pp. iv+2425-2661+ xii. (London.)
- Transactions of the Institute of Marine Engineers, Incorporated. Session 1929. Vol. 41, November. Pp. 687-751. (London.)