

## Societies and Academies.

## PARIS.

Academy of Sciences, Sept. 15.—Paul Helbronner: The observation of a polar aurora. Observed Sept. 3, between parallels  $65^{\circ} 10'$  and  $64^{\circ} 40'$ , on the occasion of the meeting of the International Congress of Geodesy and Geophysics at Stockholm.—V. Romanovsky: The discrete chains of Markoff.—J. Rey Pastor: A method of convergence by means.—L. Bert and M. Raynaud: A synthesis of propenyl benzene. The reaction between  $\omega$ -chlorallyl benzene and sodium gave unexpected results, propenyl benzene,  $C_6H_5.CH=CH.CH_3$ , being the main product. The yield is sufficient to make this a good method of preparation of this hydrocarbon.—Jean Piveteau: The structural peculiarities of a new type of fossil fish from the Permo-Triassic formations of the north of Madagascar. This fossil has been previously described by Priem, and considered by him as belonging to the genus *Pristisomus*; the author does not agree with this view, and suggests the name of *Australosomus* as the name of a new genus.—J. Vellard and Jarbas Penteado: The action of ultra-violet rays on venoms. Experiments were made on venoms from *Lachesis atrox*, *L. jararaca*, *Crotalus terrificus*, *Naja tripudians*, and *Bufo marinus*. An account of the changes in physical and chemical properties is given. The physiological action was found to be considerably reduced by exposure to ultra-violet light. With large doses of venoms irradiated for 45 minutes, the authors have been able to protect guinea-pigs and goats against the action of a subsequent injection of fatal doses of fresh venom.

## CAPE TOWN.

Royal Society of South Africa, Aug. 20.—T. Stewart: Steenbras rainfall. The yield of the catchment area for the wet months might be put at 6000 million gallons. This is the capacity of the reservoir which has recently been constructed. In 1922 observations for a period of seven years were available. These showed that the average amount of rainfall in the main valley for the period was 40.7 inches. The observations taken since, that is, over a period of fourteen years, give 39.3 inches for the main valley. This does not apply to the whole catchment.—K. H. Barnard: The Cape alder-flies (Megaloptera). Third report on the fauna of the mountains of the Cape Province. Five species are admitted, comprised in four genera. The egg, larva, and pupa of one species, and the larva and pupa of another, have been discovered.—H. Zwarenstein: A note on Bridge's genic balance theory of sex determination. The following modification is suggested: the female determining genes are located not only on chromosome X but also on chromosome IV. The male determining genes are in chromosomes II and III. Assigning arbitrary values to the efficiency of these two interacting components, a series of sex indices is derived.—L. T. Hogben: Spinal transection and the chromatic functions in *Xenopus laevis*. Section of the optic nerves has the same effect as removal of the eyes. Section of the entire peripheral nerve supply of the leg has no effect on colour response. Both the black and white background response can be elicited in toads after section of the cord in front of the first pair of spinal nerves or at any lower level.—Enid Hogben: The total oxygen consumption of hypophysectomised toads. The ratio of dermal (Winkler method) to pulmonary (Haldane method) respiration has been determined, and the variation of total respiratory rate with temperature, body weight,

and sex has been determined. Removal of the pituitary gland is accompanied by a profound diminution in the oxygen consumption.—J. Hewitt: Discoveries in a bushman cave at Tafelberg Hall.

## LENINGRAD.

Academy of Sciences (*Comptes rendus*, No. 3, 1930).—V. Ambarzumian and D. Ivanenko: A note on the problem of the unified theory of the electromagnetic and the gravitational field from the point of view of the quantum mechanics.—A. Mordvilko: *Pemphigus bursarius* Tullgren (*pyriformis* Licht.) and its anolycyclic forms. The alate forms of *P. bursarius* migrate from the galls on poplars to roots of grasses, where they give rise to exules which have been described under different names. Galls of *P. bursarius* do not occur on poplars (*P. sauveolens* and *P. maximoviczii*) in eastern Siberia, though the root-forms are present; it is possible that *P. nigra* existed there in the pre-glacial times.—D. Smirnov: Systematics of *Diaptomus fischeri* Rylov and *Diaptomus acutulus* Brian. The two species are extremely close, but differ by a number of characters, which are enumerated and analysed.—J. Medvedev: The relation of a diastase to the substratum in a system of carboxylase and pyruvic acid.

*Comptes rendus*, No. 4, 1930.—V. Ipatjev and A. Frost: Chemical equilibrium between phosphine, phosphorus, and hydrogen.—J. Kourbatov, N. Karzhavina, and N. Samoil: Description of a method for the preparation of a solution serving for the determination of ionium in the dispersed masses of Tuia-Mouiu.—S. Smirnov: (1) A new species of *Phyllopoda anostraca* from the Ussuri region. Description of *Pristicephalus longicornis* sp. n.—(2) A new species of the genus *Diaptomus* Westw. from the Amur region. A description of *D. rylovi* sp. n., closely allied to some North American species of the genus.—V. Gromova: Preliminary communication on the *Bos primigenius* Boj. in Russia. A series of thirteen skulls of *B. primigenius* was studied and great individual variability established; this throws some doubt on the validity of a number of species described by other authors, and only two of these may be retained, namely, *Bos trochoceros* Meyer of the glacial period and the post-glacial *B. primigenius* Boj.—G. Alderberg: Preliminary synopsis of Russian and Mongolian wild boars. Only one species of *Sus* is recognised, with five subspecies, namely, *S. scrofa scrofa* L. (Germany), *S. s. attila* Thomas (Transylvania, Russia, Caucasus), *S. s. nigripes* Blanford (Turkestan, Tian-Shan), *S. s. raddeanus* subsp. n. (N. Mongolia), and *S. s. continentalis* Nehring (Amur and Ussuri basins).

## SYDNEY.

Royal Society of New South Wales, Aug. 6.—A. R. Penfold, C. B. Radcliffe, and F. W. Short: The essential oil of *Eucalyptus rariflora* (Bailey). The air-dried leaves yielded 2.5 per cent of oil, the principal constituents of which have so far been identified are the terpenes  $\Delta$ -4 carene, B. phellandrene, l-a-pinene, B. pinene, cymene with cineol (about 10 per cent), sesquiterpenes (principally aromadendrene), sesquiterpene alcohols, with small quantities of the aromatic aldehydes (cuminal, phellandral, and cryptal), alkali soluble bodies (unidentified phenols) and dehydroangustione (B. diketone).

## VIENNA.

Academy of Sciences, June 26.—E. Beutel and A. Kutzelnigg: The catalytic action of light on the disintegration of certain salts.—W. J. Müller: The theory

of passivity phenomena (12). The passage of a current through anodes which are covered with an insoluble surface layer. A formula is suggested based on assumptions as to the division of the current between the surface-layer and its pores.—J. Zellner and E. Zikmunda: The chemistry of halophytes.—J. Zellner and E. Zikmunda: The chemistry of higher fungi (21). *Polyporus sulfureus* and *Lentinus squamosus*.—N. Fröschl, J. Zellner and E. Zikmunda: The comparative chemistry of plants, chemistry of barks (7). *Morus nigra* and *Alnus incana*.—E. Gebauer-Fülnegg and H. Jarsch: Condensation products from aryl-dithio-glycolic acids.—E. Riess: Organic sulphur-nitrogen linkage.—H. Huber and K. Brunner: The action of ferric chloride on the acyl esters of phenol.—F. Perktold: Para-azobenzol-sulphonic acid and paramononitro-para-azobenzol-sulphonic acid.—F. Raaz: The space-unit of gehlenite. Pure synthetic material was prepared in the Kaiser Wilhelm Institute for silicate research at Berlin-Dahlem and submitted to X-ray analysis in Leipzig. The elementary unit is a tetragonal prism with two molecules of the compound  $\text{Ca}_2\text{Al}_2\text{SiO}_7$ .—J. Kissler and A. Sesser: Biological researches on dwarf trees (1). The structural relations of the high moor forms of *Picea excelsa*. Trees fifty years old were only 60 cm. high and 2 cm. in diameter. The leaves show a diminution in the number of cells rather than in the size of cells.—W. Laves: Histological researches with buffered stain solutions on the post-mortem breakdown of the nuclear chromatin and of the plasma of liver cells.—O. Taussky: The metrics of groups.—E. Bersa: Culture and nutrient physiology of the genus *Pilobolus*. The favourable and unfavourable nitrogen and carbon sources were determined.—A. Himmelbauer: The crystalline form of cadmium antimonide. Form rhombic, formula  $\text{CdSb}$ .—H. Gerhart: Alterations of crystalline form in double sulphates. Crystals were obtained from solutions containing additions deliberately introduced. Magnesium, cadmium, and manganese double salts cause deformations of copper, nickel and zinc double salts.—L. Goebel: Radioactive disintegration phenomena in the fluorite of Wölsendorf. Haloes are formed and these have been examined with the ultramicroscope. An explanation of the colours of fluor spar is offered in terms of the size of colloid particles of calcium.—R. Steinmaurer: Observations on the variations of the Hessian cosmic ultra-radiation on the Hohen Sonnblick (3100 metres) in July 1929. Registering apparatus was used, both in half-open and in a completely enclosed 7 cm. thick iron-clad electro-scope. The measurements were arranged according to sidereal time. There was also a small barometric effect, and other unexplained irregularities.—T. Pinter: Little known and unknown tapeworms.—A. Zinke and R. Wenger: Perylene and its derivatives (29). The decomposition of perylene to benzanthron.—A. Zinke and O. Benndorf: Perylene (30).—A. Pongratz: Perylene (31).—F. Halla and E. Mehl: The space-lattice of natrolite. The unit contains eight molecules of  $\text{Na}_2\text{Al}_2\text{Si}_3\text{O}_{10}$ ,  $2\text{H}_2\text{O}$ .—A. Brukl: The hetero-poly acids of germanium. Molybdenum and tungsten unite with germanium to form acids.—K. Vanek: Division properties of curves connected in detail.—Communications of the Radium Research Institute.—(No. 258) B. Karlik: The scintillation faculty of calcium tungstate.—(No. 259) M. Blau: Quantitative research on the photographic action of  $\alpha$ - and  $\text{H}$ -particles.—(No. 260) F. Urbach: The breadth of bands and the dependence of emission bands on temperature in alkali-halide phosphorescence.—(No. 261) F. Urbach: The luminescence of alkali halides. Preface and visual observations (1).—(No. 262) F. Urbach: Luminescence of alkali halides (2).—R. Holzappel: Chief results of radiation measurements on the Stolzalp

in the period November, 1928 to October, 1929.—O. Beran: Conductivities and counter voltages in ion-conducting crystals.—M. Beier: Zoological expedition to the Ionian Islands and the Peloponnesus (13). *Hymenoptera parasitica* by C. Ferrière.—L. Waagen: The geological structure of the highlands between Frohnleiten, Übelbach and Deutsch-Feistritz in Styria.

### Official Publications Received.

#### BRITISH.

- The Edinburgh and East of Scotland College of Agriculture. Calendar for 1930-1931. Pp. 96. (Edinburgh.)  
 Annual Report for the Year 1929 of the South African Institute for Medical Research, Johannesburg. Pp. 84+2 plates. (Johannesburg.)  
 Observations made at the Royal Observatory, Greenwich, in the Year 1928 in Astronomy, Magnetism and Meteorology, under the direction of Sir Frank Dyson. Pp. viii + A106 + B4 + C141 + D62 + E46 + 17. (London: H.M. Stationery Office.) 37s. 6d. net.  
 The Scientific Proceedings of the Royal Dublin Society. Vol. 19 (N.S.), No. 43: The Raised Beaches of the East Coast of Ireland. By C. P. Martin. (Dublin: Hodges, Figgis and Co.; London: Williams and Norgate, Ltd.)  
 Eleventh Annual Report of the Ministry of Health, 1929-1930. (Cmd. 3667.) Pp. xiv + 277. (London: H.M. Stationery Office.) 4s. 6d. net.  
 Interdepartmental Committee on Crabs and Lobsters. Report on Crabs: Being an Interim Report of the Interdepartmental Committee appointed by the Minister of Agriculture and Fisheries and the Secretary of State for Scotland to enquire into the Crab and Lobster Fisheries. Pp. 94. (London: H.M. Stationery Office.) 1s. 6d. net.  
 Aeronautical Research Committee. Report for the Year 1929-30. Pp. 82+5 plates. (London: H.M. Stationery Office.) 1s. 6d. net.  
 Department of Scientific and Industrial Research. Index to the Literature of Food Investigation. Vol. 2, No. 1, March. Compiled by Agnes Elisabeth Glennie. Pp. iv + 108. (London: H.M. Stationery Office.) 2s. net.  
 Tanganyika Territory: Department of Tssetso Research. Co-ordination Report No. 3, 1st September 1929 to 30th September 1930. Pp. 15. (Dar es Salaam: Government Printer.)  
 Journal of the Marine Biological Association of the United Kingdom. New Series, Vol. 17, No. 1, September. Pp. 275. (Plymouth.) 12s. 6d. net.  
 The Year's Photography, 1930-1931. Pp. 20 + lii + 88 plates. (London: Royal Photographic Society.) 2s. 6d. net.  
 Commonwealth of Australia: Bureau of Meteorology, Melbourne. Paper 1, Extract from Bulletin No. 17: Some Periods in Australian Weather. By Dr. Edward Kitson. Pp. 33. (Melbourne: H. J. Green.)  
 First Annual Report of the Executive Council of the Imperial Agricultural Bureaux. Pp. 15. (London.)  
 Report for 1929 on the Lancashire Sea-Fisheries Laboratory at the University of Liverpool. Edited by Prof. James Johnstone and Dr. R. J. Daniel. (No. 38.) Pp. 109. (Liverpool.)  
 Transactions of the Institute of Marine Engineers, Incorporated. Session 1930, Vol. 42, September. Pp. 567-662 + xlii. (London.)

#### FOREIGN.

- Meddelanden från Statens Meteorologisk-Hydrografiska Anstalt. Band 5, No. 6: Sveriges Vattenkrafttillgångar, Sammanfattning av resultatet i "Förteckning över Sveriges Vattenfall" för Norrlands älvar och Dalälven, jämte preliminär beräkning av Vattenkraften i hela landet. Av Ragnar Melin. Pp. 27 + 12 planscher. (Stockholm.) 5.00 kr.  
 Abisko Naturvetenskapliga Station. Observations météorologiques à Abisko en 1929. Rédigées par Bruno Rolf. Pp. iv + 72. (Stockholm.)  
 Statens Meteorologisk-Hydrografiska Anstalt. Nr. 279: Climate of Sweden. By Axel Wallén. Pp. 65. (Stockholm.) 2.00 kr.  
 Estados Unidos Mexicanos: Secretaria de Agricultura y Fomento. Estudios de la Oficina Federal para la Defensa Agrícola, Num. 3: El Arsenico, y sus derivados, como insecticidas. Por Pablo Hope y Hope y Manuel de la Lama. Pp. 63. (Tacubaya, D.F.: Secretaria de Agricultura y Fomento.)  
 Scientific Papers of the Institute of Physical and Chemical Research. No. 265: A Method for the Extension of Balmer Series in Laboratory. By Toshio Takamine and Taro Suga. Pp. 117-122 + plate 21. (Tōkyō: Iwanami Shoten.) 15 sen.  
 Science Reports of the Tokyo Bunrika Daigaku, Section A. No. 1: On the Vapour Pressure of Liquid Part 1: On the Vapour Pressure, Heat of Vaporization and Chemical Constant of Pure Liquid Substance. By Keichi Watanabe. Pp. 13. (Tokyo: Maruzen Co., Ltd.) 25 sen.  
 The Science Reports of the Tohoku Imperial University, Sendai, Japan. Second Series (Geology), Vol. 13, No. 3. Pp. 35-114 + plates 11-40. (Tōkyō and Sendai: Maruzen Co., Ltd.)  
 State of Arkansas: Arkansas Geological Survey. Bulletin 3: Geology of the Arkansas Paleozoic Area, with Especial Reference to Oil and Gas Possibilities. By Carey Croneis. Pp. xx + 457 + 45 plates. (Little Rock, Ark.)  
 Technical Books of 1929: a Selection. Compiled by Donald Hendry. Twenty-second Issue. Pp. 28. (Brooklyn, N.Y.: Pratt Institute Free Library.)  
 Ministry of Agriculture, Egypt: Technical and Scientific Service. Bulletin No. 92: On a Severe Infection of Dogs in Cairo simulating Rabies. Preliminary Note by Prof. Dr. Matteo Carpano. Translated from the Italian by E. Talarewitch. Pp. 19 + 2 plates. 5 P.T. Bulletin No. 96: Ratoon Cotton in relation to Insect Pests. By Ibrahim Bishara. Pp. ii + 68 + 24 plates. 5 P.T. (Cairo: Government Press.)

#### CATALOGUE.

Collections and Apparatus required for the Study of Geology. Pp. 24. (London: Thomas Murby and Co.)