are rare. . . . The learning and scientific intercourse among the medical men in the Danish capital are supported by two medical societies. In their general methods of cure the Danish medical men do not commonly use but rather shun heroic remedies: as true sons of Hippocrates they follow his maxims in studying Nature and in endeavouring in all their treatment to obey it and to sustain the *vires medicatrices* not disturbing them by too active medicine".

The Siamese Twins

The British and Foreign Medical Review for July 1836 gives the following account of this interesting pair, who were then in Paris: "The connecting band united them at first face to face, but constant traction has so changed its direction that they are now side by side. Its length above is two inches, below nearly four; from above downwards it measures three inches, and its greatest thickness is one and a half inch. . . . The band is formed superiorly by the xiphoid appendix and by some of the cartilages of the ribs, and presents inferiorly the cicatrix of the umbilicus: the cavities of the two chests do not communicate, but the abdominal cavities do. . . .

It has been proposed to divide the band, but, if this description be correct, any incision would open the peritoneum; such a proposal is very disagreeable to the twins, who have often said they have never seen any single individual so happy as they are united. Their names are Eng and Chang, and they were born in May 1811 in a small village on the coast of Siam, twenty leagues from Bankok, of Chinese parents. They have the Chinese features; the internal angles of the eyes slightly drawn down, skin yellow and hair very black; they are extraordinarily alike, only Eng is a little larger and stronger, and Chang appears to rest more willingly on his brother. They are five feet in height, well proportioned and of great muscular strength; they are very agile, they walk and run rapidly, and can swim as well as a single person. Their intellectual faculties are well developed. They understand English and speak it perfectly, but they have forgotten their native tongue, which is not to be wondered at, as they never speak to each other except sometimes asking a question. They have both an equal knowledge of English. Two persons have endeavoured to converse separately with each at the same time, but both turn invariably to one speaker, and converse alone with him. They suffered from ague in America; the attack commenced at the same time in both, and the stages of the disease exactly corresponded, so that they experienced rigors, heat and sweating at the same moment. Chang also had pain in his side, during which his brother was uncomfortable, and when Chang was being bled, Eng felt indisposed.

Their taste for food, for persons and things is similar, what pleases one, pleases the other; they both experience hunger and thirst, go to sleep and wake at the same instant; one is never awake while the other sleeps, and to wake them it is only necessary to touch one. During sleep they often change their position by one rolling over the other without waking. There is the utmost uniformity in their motions, as if both were influenced by one will. They have never been known to be angry with each other; the one who wishes to perform any act, makes no sign to the other, who, notwithstanding, concurs without the slightest hesitation".

Societies and Academies

Edinburgh

Royal Society, July 6.

B. G. SHAPIRO and H. ZWARENSTEIN: Relation of the pituitary gland to muscle creatine. The creatine content of the thigh muscles of *Xenopus lævis* is about 400 mgm. per 100 gm., the extreme limits for normal animals, male or female, being 40 mgm. above or below this figure. Six months after total removal of the pituitary gland, the muscle creatine content is found to be about 320 mgm. per 100 gm. The same result follows the removal of the anterior lobe alone. The drop does not follow immediately after operation, and is still comparatively slight after three months have elapsed. Injection of anterior lobe extract into normal toads of the same species raises the muscle creatine level by thirty per cent. This effect is tissue specific.

EDITH A. T. NICOL: The fauna of the brackish water lochs of North Uist. These lochs lie at different levels and show all conditions between lochs entered by every tide with a salinity of more than thirty per mille and those entered by only the highest tides with a salinity of about two per mille. The *p*H varies between 7·8 and 9·9 in spite of the low *p*H of the fresh-water and the alkali reserve is often below 0·0010 *N*. The fauna is unusually rich owing to the varied conditions of salinity and substratum, and consists of 59 marine, 24 fresh- and 25 brackish-water species, as well as 5 euryhaline forms. *Sphaeroma hookeri* is recorded for the first time in Scotland.

P. C. KOLLER: The chromosomes of the male grey squirrel. The diploid chromosome number of the grey squirrel (*Sciurus carolinensis leucotus* Gapper) is 28. The sex chromosomes exhibit very little difference in size. The sex bivalent during meiotic metaphase is invariably asymmetrical, which indicates an obligatory pre-reduction. A deviation of metaphase chiasma frequencies, found in different individuals, is brought about by a different degree of terminalization of diplotene chiasmata. The ultimate cause of the deviation is either genetical or environmental.

F. WALKER and C. F. DAVIDSON: A contribution to the geology of the Faeroes. The eighteen islands of the Faeroes archipelago, 540 square miles in area, are formed of a great sequence of Tertiary basalts and tuffs, 14,000 feet thick. Small volcanic vents, sills and dykes are present, and thin seams of sediments, including lignite, are intercalated with the basalts. Traverses show that the lowest exposed horizons of the plateau, the base of which is not seen, are formed of tholeiitic basalts. These are succeeded by olivine-basalts, and in turn by a vast thickness of porphyritic feldspathic and tholeiitic basalts, capped by ankaramites and olivine-rich lavas at the highest levels. Composite flows, dyke-feeders to lavas, and other phenomena are described, and an extensive bibliography is given. Seven 'superior' chemical analyses of Faeroes rocks are now available.

F. A. E. CREW and P. C. KOLLER: Genetical and cytological studies of the intergeneric hybrid of *Cairina moschata* and *Anas platyrhyncha platyrhyncha*. The two genera are fertile *inter se*, but the hybrid is infecund. The characterization of the hybrid differs according to which way the cross is made. The male hybrid ex *Anas* (male) × *Cairina* (female) is normally equipped sexually but infecund; the female has a

rudimentary ovary, infantile oviduct, exhibits no sex behaviour and in size equals the male. The male hybrid out of the reciprocal cross is infecund and much larger than the female, which has a functional ovary, an oviduct and normal sex behaviour. She lays small eggs which are infertile. The chromosome number of the two genera is probably the same and the larger chromosomes are morphologically alike. In the male hybrid no viable gametes are to be found. Spermatocytes undergo dedifferentiation and nuclear condensation. Multinucleate giant cells in which vacuoles develop and nuclei degenerate are plentiful. The spindle is normal. The sterility of the hybrid would seem to be due to the action of complementary genetic factors which do not affect chromosome pairing but which disturb the relationship of this with spindle development.

HAROLD JEFFREYS : Note on fracture : a note on Dr. E. M. Anderson's paper "The Dynamics of the Formation of Cone-Sheets, Ring-Dykes, and Caldron-Subsidences".

Paris

Academy of Sciences, June 15 (*C.R.*, **202**, 1953–2020).

VITO VOLTERRA : The equations of biological fluctuations and the calculus of variations.

HENRI DEVAUX : The determination of the thickness of the albumen membrane formed between water and benzene, and the properties of this membrane. The interfacial membranes of albumen between water and benzene are monomolecular.

HUGO STEINHAUS : The curve of Peano and independent functions.

M. KAC : Some remarks on independent functions.

R. DE MISÈS : The energy of acceleration of a solid.

PIERRE E. MERCIER : Oscillatory phenomena in suspensions.

LOUIS COUFFIGNAL : The use of binary numeration in calculating machines and nomomechanical instruments.

JEAN LAGRULA : The method of simultaneous pupillary regions. Application of Charles Fabry's method of stellate photometry. Taking four exposures on each plate, by successive rotations of a right angle, relative magnitudes have been determined with an accuracy of 0·005–0·01 magnitude.

L. CHADENSON : A functional space of quantic mechanics.

GABRIEL DUCH : Some relations between the functions of the cohesion forces of liquids and their chemical function at the boiling point under constant pressure.

J. SERPE : The K-radiation of boron. Boron prepared by Moissan's method gives a K-radiation which has at high temperatures three conductivity electrons per atom. The maximum kinetic energy of these electrons is $20 \pm 2{\cdot}5$ v.

JEAN ROIG and JEAN THOUVENIN : The variation of the optical density of photographic plates with the dryness conditions. A photographic plate, uniformly exposed, never gives uniform darkening. One of the causes of this variation is moisture variation, and results of a quantitative study of this effect is given.

MLLE. ARLETTE TOURNAIRE and ETIENNE VASSY : The influence of the wave-length of the light on the evolution of the latent image. The evolution of the latent image, in plates in which it occurs, is shown to be a function of the wave-length of the incident light.

RENÉ DELAPLACE : Atomic hydrogen and the disappearance of hydrogen in discharge tubes. If the discharge tube is freed from traces of water vapour by cooling with liquid nitrogen for twenty-four hours, the hydrogen does not undergo irreversible contraction, and traces of methane and carbon monoxide are no longer produced by prolonged discharge.

PIERRE SPACU : An argento-mercuric compound. From an X-ray study it is shown that Wöhler's substance $Hg(CN)_2.AgNO_3.2H_2O$ is a definite compound and not a mixture.

ETIENNE CANALS, MAX MOUSSERON, LOUIS SOUCHE and PIERRE PEYROT : The Raman spectra of some substituted epoxycyclopentanes.

PIERRE BRAUMAN : A new type of vanadylsalicylate.

PAUL COUTURIER : The action of mixed organomagnesium compounds on the aromatic N-diethylamides with phenolic function.

RENÉ TRUCHET : Heavy chloroform, $CDCl_3$. This was prepared by the action of heavy water on a suspension of quicklime in chloral, and contained only a small proportion of ordinary chloroform, shown by the Raman spectrum.

GEORGES DENIGÈS : The constant formation of carbonyl derivatives (aldehydes and ketones) of the same condensation in the explosive decomposition of nitric esters.

V. AGAFONOFF : The soil types of Tunis.

JEAN MARÇAIS : The geological constitution of the region to the north of Taza and of Guercif (Eastern Morocco).

MAURICE ROQUES : The cristallophyllian series of the Lespinouse massif, in the neighbourhood of Lacaune.

WACLAW MOYCHO : The independence of the production of proteases and the development of the cell in *Bacterium prodigiosum*. By varying either the *p*H or the amount of phosphate, the development of the bacterium and the production of proteases can be influenced differently. The two processes, at least in this organism, appear to be independent.

RENÉ SOUÈGES : The embryogeny of the Campanulaceæ. The development of the embryo in *Campanula patula*.

MLLE. MARIE LOUISE VERRIER : The purple and visual cells of the fovea of the nocturnal birds and of other vertebrates.

PAUL CHABANAUD : The interbranchial opening of the unsymmetrical teleosteans.

GEORGES BROOKS : Researches on the fluorescence of the skin of the frog, *Rana esculenta*. Study of the mineral substances. The mineral fluorescent substance of the skin of the frog is composed of a complex mixture of mineral salts containing manganese and zinc.

CONSTANTIN LEVADITI and PEREZ HABER : The affinity of the virus of bird plague for the neoplasic (epithelioma) cells of mice.

Cape Town

Royal Society of South Africa, April 15.

F. G. CAWSTON : Some observations on *Opuntia* used as a larvicide. The mucilage of *Opuntia maxima* was tested in various concentrations, and the effect studied on four different anophelines and *Culex*. The majority of the larvæ rapidly succumbed, but the

mucilage had little effect on those which had reached the pupal stage. There was also an arrest of development of those which were afterwards removed to clean water. The effect of the juice is largely mechanical, and a preservative is needed to prevent decomposition.

VIVIEN ELLENBERGER: History of the Ba-ga-Malete of Ramoutsa. The traditional and historical movements of the Malete tribe, Bechuanaland Protectorate, collected from native tribal sources and from official records. Notes on the social structure, regimental system, national praises and the tribal territory are included.

I. SCHAPERA: Acculturation among the BaKxatla.

FLORENCE RICH: Some diatoms from the Victoria Falls. An account of diatoms contained in the washings of a collection of Dicraea (Podostemaceæ) made just above the Falls, on the rocks at the east side, where these plants are covered by rapid-flowing water in the rainy season. About sixty different species have been identified, most of which proved to have been previously recorded from South or Central Africa. One new species and several new varieties are described and figured.

W. S. S. LADELL: Use of serum as an accessory medium in tissue culture.

H. ZWARENSTEIN: A revised simple technique for the frog test.

V. SCHRIRE and H. ZWARENSTEIN: The pancreas and blood inorganic phosphorus. The normal plasma inorganic phosphorus content of *Xenopus* is 7·1 mgm. per 100 ml. (average of 58 estimations). Temperature has no effect. Pancreatectomy caused a 30 per cent increase six hours after operation. Injection of insulin into normal animals caused a 50 per cent drop four hours after injection.

Cracow

Polish Academy of Science and Letters, April 6.

W. ORLICZ: The L^M spaces.

K. ŠTEINS: The technique of astronomical calculations according to an international inquiry. Some conclusions based on a questionnaire sent out to twenty-two countries relating to various points in astronomical calculations.

S. PIOTROWSKI: A star, probably new, in Gemini.

K. GUMINSKI: The luminescence of barrier anodes of aluminium. A study of the influence of the nature of the electrolyte, of the anode and the electrical conditions on the light emission of the anodes. The results are discussed from the point of view of the current theories of this luminescence.

I. ZLOTOWSKI: The structure and properties of the insulating layers formed on aluminium electrodes during anodic polarization.

K. DZIEWONSKI and J. MOSZEW: The reactions of methyl-*m*-xylyl ketone with compounds of the thiocarbanilide type.

A. KOCWA: The reactions of the alkyl-arylpyrazolones and their derivatives of the anil type with carbanil and thiocarbanil.

MLLE. J. BURTAN: The stratigraphy of the Silesian Beskide.

J. CUNGE: The cyto-architectonic of the cerebral cortex in Japanese waltzing mice.

T. VETULANI: The forest tarpan recently introduced into the forest of Bialowieza.

Official Publications Received

Great Britain and Ireland

Air Ministry: Aeronautical Research Committee: Reports and Memoranda. No. 1602 (T. 3503): Influence of a Uniform Jet on the Lift of an Aerofoil. By H. Glauert. Pp. 14+3 plates. 1*s*. net. No. 1679 (1835): Stability of a Monocoque in Compression. By Dr. J. L. Taylor. Pp. 9. 6*d*. net. No. 1681 (1810): Experiments on a Small-Chord Flap on a Clark YH Aerofoil in the Compressed Air Tunnel. By D. H. Williams and A. F. Brown. Pp. 14+8 plates. 1*s*. net. No. 1683 (1926): Cooling of Aircraft Engines, with Special Reference to Ethylene Glycol Radiators enclosed in Ducts. By F. W. Meredith. Pp. 13. 9*d*. net. No. 1684 (2094): Two-Dimensional Flow of Compressible Fluids at Sub-Sonic Speeds past Elliptic Cylinders. By Dr. S. G. Hooker. Pp. 16+4 plates. 1*s*. net. No. 1686 (2038B): Flutter Experiments on a Model Wing fitted with a Dead-Centre Aileron Control. By V. M. Falkner, W. P. Jones and C. Scruton. Pp. 10+7 plates. 1*s*. net. No. 1694 (2018): A Routine Method of Stressing for Three-Ply Covered Fuselages, with Special Reference to some Mechanical Tests on a Particular Fuselage. By H. Davis. Pp. 4+3 plates. 6*d*. net. (London: H.M. Stationery Office.) [306

Report on the Phenological Observations in the British Isles from December 1934 to November 1935. By Ivan D. Margary. (No. 45.) Pp. 299–358. (London: Royal Meteorological Society.) 3*s*. [77

London Shellac Research Bureau. Technical Paper No. 9: Plasticising Lac Films, Part 1. By Dr. Lal C. Verman and Dr. R. Bhattacharya. Pp. 29. (London: London Shellac Research Bureau.) [87

Other Countries

U.S. Department of the Interior: Office of Education. Vocational Education Bulletin No. 182 (Home Economic Series No. 19): Consumer-Buying in the Educational Program for Homemaking; Suggestions for Teachers of Homemaking in Secondary School and Adult Classes. Pp. xiii+205. (Washington, D.C.: Government Printing Office.) 20 cents. [246

U.S. Department of Agriculture. Circular No. 386: The Wax Moth and its Control. By Warren Whitcome, Jr. Pp. 14. (Washington, D.C.: Government Printing Office.) 5 cents. [246

Proceedings of the Academy of Natural Sciences of Philadelphia, Vol. 88. The Occurrence of Flints and Extinct Animals in Pluvial Deposits near Clovis, New Mexico. Part 3: Geology and Vertebrate Palæontology of the Late Quaternary near Clovis, New Mexico. By Chester Stock and Francis D. Bode. Pp. 219–241. (Philadelphia, Pa.: Academy of Natural Sciences of Philadelphia.) [246

Suomen Geodeettisen Laitoksen Julkaisuja: Veröffentlichungen des Finnischen Geodätischen Institutes. No. 22: Beobachtungsergebnisse; Winkelmessungen in den Jahren 1932–1935. Pp. iii+148. (Helsinki: Suomen Geodeettisen Laitoksen Julkaisuja.) [296

Report on the Zoological Survey of India for the Years 1932–1935. Pp. iii+lx. (Delhi: Manager of Publications.) 1.2 rupees; 2*s*. [296

Memoirs of the Indian Museum. Vol. 11, No. 3: Studies on Indian Jassidæ (Homoptera). Part 3: Descriptions of some New Genera and Species, with first Records of some known Species from India. By Dr. Hem Singh Pruthi. Pp. 101–131+plates 8–9. (Calcutta: Zoological Survey of India.) 1.10 rupees; 2*s*. 9*d*. [296

Allahabad University Studies. Vol. 12 (Arts and Science). Edited by the Vice-Chancellor and the Heads of Departments. Pp. v+188+5 plates. (Allahabad: Senate House.) 7.8 rupees. [296

Memoirs of the Geological Survey of India. Palæontologia Indica, New Series. Vol. 21, Memoir No. 4: Fossil Algæ from the Uppermost Cretaceous Beds (The Niniyur Group) of the Trichinopoly District, S. India. By L. Rama Rao and Dr. Julius Pia. Pp. v+49+6 plates. (Calcutta: Geological Survey of India.) 4.10 rupees; 7*s*. 9*d*. [296

Indian Forest Records, New Series. Vol. 1, No. 3: The Distribution of Sesquioxides, Silica and Organic Matter in Forest Soil Profiles of the Kulu Hill Area. By R. C. Hoon. Pp. ii+347–365. (Delhi: Manager of Publications.) 12 annas; 1*s*. 3*d*. [296

Smithsonian Miscellaneous Collections. Vol. 95, No. 12: The Dependence of Terrestrial Temperatures on the Variations of the Sun's Radiation. By C. G. Abbot. (Publication 3392.) Pp. ii+15. (Washington, D.C.: Smithsonian Institution.) [296

Studies from the Connaught Laboratories, University of Toronto. Vol. 7, 1935. Pp. v+46 papers. (Toronto: University of Toronto Press.) [286

Commonwealth of Australia: Bureau of Meteorology. Results of Rainfall Observations made in Tasmania, including all available Annual Rainfall Totals from 356 Stations for all Years of Record up to 1934, with Maps and Diagrams, and Record of Severe Floods. Published under the direction of W. S. Watt. Pp. 143+4 plates. (Melbourne: Government Printer.) [296

Advisory Department of the Imperial College of Tropical Agriculture. Report of the Agricultural Department, Dominica, 1935. Pp. vi+19. (Trinidad: Imperial College of Tropical Agriculture.) 6*d*. [306

Nyasaland Protectorate: Geological Survey Department. Colonial Development: Water Supply Investigation: Progress Report (No. 5) for the Year 1935. Pp. 20+5 plates. (Zomba: Government Printer.) 2*s*. 6*d*. [306

Catalogues

The Gardener's Library: a Comprehensive List of Books on all Branches of Modern Horticulture and a Selection of the Early Literature. (New Series, No. 39.) Pp. 44. The Gardener's Library, 1936 Supplement. Pp. 8. Books, Periodicals and Pamphlets on Geology, including Palæontology, Mineralogy and Mining, with a Supplement of Recently Published Books. (New Series, No. 40.) Pp. 44. Books and Periodicals on Zoology and Botany, including Publications of the British Museum and Works on and by Linnæus. (New Series, No. 41.) Pp. 58. Cryptogamic Botany. (New Series, No. 42.) Pp. 36. Books on Ornithology. (New Series, No. 43.) Pp. 50. (London: Wheldon and Wesley, Ltd.)