

Societies and Academies

London

Royal Society, December 10.

A. G. MACGREGOR: Preliminary report on the geology of Montserrat. Montserrat, in the Leeward Islands, is a small member of the series of islands that form the volcanic arc of the Lesser Antilles or Caribbees. The island consists of six mountain masses and hills, each of which represents an old volcano modified by erosion. Active soufrières, emitting hydrogen sulphide gas and steam, have, however, persisted on the flanks of the Soufrière Hills, the youngest volcano, until the present day. Temperatures at the soufrières have remained low from a volcanological point of view during the abnormal gas-emission that accompanied the recent earthquakes. The eruptions of the Soufrière Hills volcano were of the Peléan explosive type, characterized by incandescent avalanches of gases, rock fragments and dust. Part of a large crater with a central "dome" and andesite can still be recognized. True lava flows are found only in the south of the island, where they were emitted from a volcano somewhat older than that of the Soufrière Hills.

C. F. POWELL: Preliminary report on seismic observations in Montserrat. An account is given of the results obtained with the Wiechert seismograph and Jagger shock recorders installed in Montserrat in April 1936 by the Royal Society Expedition. The general seismic intensity during this year has been appreciably less than in 1934 and 1935. The monthly number of observed tremors shows a succession of pronounced maxima at roughly six-monthly intervals, the times of greatest activity being May and November-December. The shocks were highly local in origin, most of the foci lying under the island. By comparing the amplitudes of the shocks recorded on the Jagger shock recorders maintained at different points in the island, the epicentres were found to lie in a broad belt running across the middle of the island. This belt also embraces the active soufrières, but the epicentres are not confined exclusively to the immediate neighbourhood of the active soufrières. A considerable number of shocks originated at a comparatively few "active" foci. Many twin earthquakes, originating at the same focus, were observed. A number of temperature measurements were made, together with observations on the concentration of the hydrogen sulphide and sulphur dioxide.

Paris

Academy of Sciences, November 23 (*C.R.*, 203, 1037-1104).

LOUIS BLARINGHEM: A new case of mosaic in a hybrid of wallflower, *Cheiranthus Cheiri* × *Erysimum cheirantoides*.

MARCEL GODCHOT and MLE. GERMAINE CAUQUIL: The action of hydrocyanic acid upon active 3-methyl-cyclohexanone.

GEORGE ALBERT BOULENGER: The genus *Herperhodos* (Rosaceae).

J. NEYMAN: Verification of the hypothesis concerning the law of probability of contingent variable.

GEORGES KUREPA: Souslin's problem and abstract spaces.

GEORGES BOULIGAND: Partial differential equations of the first order.

VICTOR VALCOVICI: The relative movement of a solid in a viscous fluid.

JEAN MARIANI: The universe interval in relativist wave mechanics.

ARCADIUS PIEKARA and BRUNO PIEKARA: Electrical saturation and the critical point of solution.

MLE. SUZANNE VEIL: The systematic construction of batteries with two liquids on gelatine.

RAYMOND HOCART and MAURICE FALLOT: The structure and magnetic properties of manganese boride, MnB. Results of X-ray studies on the crystals and behaviour in the magnetic field.

JEAN J. TRILLAT and SHIGUÉO OKETANI: Studies on the transformations produced in certain metals by heating in a vacuum or in air. The changes in structure produced in thin films of gold and silver by heating to 500° C. have been studied by electron diffraction.

LOUIS GUITTON: Application of potentiometric methods to the prediction of corrosion in ferrous alloys.

PIERRE DONZELOT: Structure of methyl and ethyl selenides. Deductions made from Raman and infra-red spectra.

GUY EMSCHWILLER: An optimum of chemical reactivity of gases adsorbed at their critical temperature.

MLE. YVONNE GARREAU: Oxidation of hydroquinone by air in the presence of monomethylammonium sulphite. Oxidation of hydroquinone monosulphonic acid in the presence of methylamine.

MAXENCE MEYER: Some ethylenic α -ethoxyacids.

JEAN DÉCOMBE: Condensation of ketones with formaldehyde in alkaline medium.

JEAN GOGUEL: The Cevennes border.

PIERRE AUGER, PAUL EHRENFEST, JUN., and ANDRÉ FRÉON: Studies on the cosmic 'showers' at high altitudes.

JEAN PIVETEAU: The origin and morphological evolution of tailless amphibians.

FRÉDÉRIC MARIE BERGOUNIOUX: Origin of the group of the Trionychoïdes.

MME. PANCA EFTIMU HEIM: Presence and evolution of the micro-nucleolus in the Cucurbitaceae.

MLE. MARIE THÉRÈSE GERTRUDE: Action of the aquatic medium on the nitrogen nutrition and phosphorus nutrition of a herbaceous plant.

ROBERT LAMI: Value and variations of the salinity and alkalinity of the water contained in the cavity of *Codium Bursa*.

HENRI GESLIN: The evaporating power of the air and the humidity of the soil.

JEAN SERVY: A new index characterizing the dryness factor in agronomy.

PIERRE MENARD: Suppression of the causes of errors in measurements of arterial pressures.

MAURICE DOLADLHE and CHARLES MOREL: Contribution to the study of the influence exercised by alexin on the dispersion of a colloidal complex by a blood serum.

Moscow

Academy of Sciences (*C.R.*, 3, No. 6, 1936).

L. B. ROBINSON: A functional equation satisfied by a lacunary function.

M. KRAVČUK and C. LATYŠEVA: Application of the method of moments to the approximate solution of linear differential equations with unitary coefficients.

S. JANČEVSKIJ : Complex equation of Fredholm.
B. V. NUMEROV : Compiling a fundamental catalogue of faint stars.

B. V. NUMEROV and D. ČHRAMOV : Determination of the shape of the geoid by gravity measurements.

B. V. NUMEROV : Principles of the method for the determination of the geoid on the basis of gravimetric and astronomical-geodetical observations.

S. I. VAVILOV : Productivity and duration of fluorescence.

S. I. VAVILOV and A. N. SEVČENKO : Extinction of fluorescence by the solvent.

P. BAŽULIN : Absorption of ultra-sonic waves by acetic acid.

N. DOBROTIN : Absorption of neutrons in silver, cadmium and boron (2).

L. A. DREMLJUG : Morphology and cytology of the hybrid of *Nicotiana paniculata* × *N. langsdorfii*.

K. V. KOSSIKOV : A new duplication in the X-chromosome of *Drosophila melanogaster* and its evolutionary significance.

V. M. KATUNSKIJ : Short periodical illumination as a method of controlling the development of plant organisms.

P. J. SCHMIDT, G. P. PLATONOV and S. A. PERSON : Anabiosis of fish in super-cooled water (see NATURE, Dec. 5, p. 977).

Washington, D.C.

National Academy of Sciences (*Proc.*, 22, 567-619, Oct. 15).

CLAUDE E. ZOBELL and HELEN M. MATHEWS : A qualitative study of the bacterial flora of sea and land breezes. Wind is an important factor in the exchange of land and sea bacteria. Although many marine forms may survive in the soil, and few terrestrial bacteria survive in the sea, yet exposure of culture plates showed the presence of marine bacteria 30 miles inland, and terrestrial forms 130 miles at sea during relatively calm weather. Bacterial content may aid in indicating the origin and course of large air masses.

L. J. STADLER and G. F. SPRAGUE : Genetic effects of ultra-violet radiation in maize. (1) Unfiltered radiation. Irradiation of pollen greatly increased the frequency of both entire and fractional endosperm deficiencies, and point mutations affecting seed and seedling characters were induced; but no increase in frequency of translocation was observed. (2) Filtered radiation. Radiation of wave-length λ 3130 and longer is relatively ineffective, while λ 3022 and shorter wave-lengths are effective in inducing deficiencies. (3) Effects of nearly monochromatic λ 2537, and comparison of effects of X-ray and ultra-violet treatment. With radiation from a quartz mercury discharge tube, the relative frequency of induced deficiency is about the same as that for longer wave-lengths, but the maximum dose tolerated is much lower. X-rays (1333 r.) produced deficiencies most of which affected the whole endosperm, while a large proportion of deficiencies produced by filtered ultra-violet light affect approximately half the endosperm. The frequency of germless seeds produced by pollen irradiated with X-rays was very much higher than for pollen treated with filtered ultra-violet light.

B. P. KAUFMANN : A terminal inversion in *Drosophila ananassæ*.

TZE-TUAN CHEN : Observations on mitosis in Opalinids (Protozoa, Ciliata). (1) The behaviour and individuality of chromosomes and their significance.

In *Zelleriella intermedia*, from the rectum of a toad, there are two identical nuclei, each with 24 chromosomes arranged in twelve pairs; the chromosomes are recognizable by constant differences of size, structural peculiarities and position of point of fibre attachment. The behaviour of the chromosomes in cell division is fundamentally the same as that of chromosomes of higher animals and plants. (2) The association of chromosomes and nucleoli. Nucleoli, four, six or more number according to the race of *Z. intermedia* under investigation, are found, each pair occupying a definite non-terminal position on a specific pair of chromosomes. Unlike the nucleoli of higher organisms, they maintain their relation with the chromosomes during cell-division, dividing with the chromosomes. The nucleolar material is considered not to be identifiable with the macrochromatin of the macronuclei of other ciliates.

H. BATEMAN : Progressive waves of finite amplitude and some steady motions of an elastic fluid. A theoretical discussion.

Official Publications Received

Great Britain and Ireland

Croydon Natural History and Scientific Society. Regional Survey Atlas of Croydon and District. Pp. 19+12 plates+Locator template. (Croydon: Koffey and Clark, Ltd.; London: Thomas Murby and Co.) 12s. 6d. [212]

P. E. P. (Political and Economic Planning). Report on the Supply of Electricity in Great Britain: a Survey of Present-day Problems of the Industry with Proposals for Reorganisation of Electricity Distribution. Pp. vi+171. (London: P. E. P.) 6s. net. [412]

Twenty-seventh Report of the Commissioners of His Majesty's Customs and Excise for the Year ended 31st March 1936. Being the 80th Report relating to the Customs and the 79th Report relating to the Excise. (Cmd. 5296.) Pp. 219. (London: H.M. Stationery Office.) 3s. 6d. net. [412]

The Teaching of General Science: Science Masters' Association Interim Report of the Sub-Committee appointed in 1935, adopted by the General Committee in 1936. Pp. v+49. (London: John Murray.) 2s. 6d. net. [712]

Electricity (Supply) Acts, 1882 to 1936: Sixteenth Annual Report of the Electricity Commissioners, 1st April 1935 to 31st March 1936. Pp. 195. (London: H.M. Stationery Office.) 3s. net. [812]

Technical Publications of the International Tin Research and Development Council. Series A, No. 47: The Preparation of Tin and Tin Alloys for Microscopic Examination. By H. J. Taffs. Pp. 9+5 plates. (London: International Tin Research and Development Council.) Free. [912]

Rubber Growers' Association. Rubber and Agriculture Series, Bulletin No. 5: The Uses of Rubber in Stable Management. By Alexander Hay. Pp. ii+16. (London: Rubber Growers' Association.) Free. [912]

Other Countries

Les bases de l'influence des phénomènes solaires en météorologie. Par Henri Mémery. Pp. 32. (Talence: Observatoire de Physique solaire et Météorologie.) [112]

Astrophysica Norvegica. Vol. 2, No. 1: On the Trajectories of Electric Particles in the Field of a Magnetic Dipole with Applications to the Theory of Cosmic Radiation. By Carl Størmer. Pp. 124+20 plates. (Oslo: Jacob Dybwad.) [112]

A Compendium of Minerals and Stones used in Chinese Medicine from the Pen Ts'ao Kang Mu, Li Shih Chen, 1597 A.D. Compiled by B. E. Read and C. Pak. (Published by the Peking Natural History Bulletin.) Second edition. Pp. viii+98. (Peiping: The French Bookstore.) 1.50 Chinese dollars. [412]

II Internationalen Kongress für Krebsforschung und Krebsbekämpfung (IInd International Congress of Scientific and Social Campaign against Cancer). Vol. 1: Referate (Reports). Pp. xvi+503. (Bruxelles: Comité National d'Organisation.) [412]

U.S. Department of Agriculture. Circular No. 401: Control of the Japanese Beetle and its Grub in Home Yards. By W. E. Fleming and F. W. Metzger. Pp. 15. 5 cents. Circular No. 410: Results from Breeding Rabbits that are Suckling Young. By Chas. E. Kellogg. Pp. 8. 5 cents. (Washington, D.C.: Government Printing Office.) [712]

Report on the Administration of the Meteorological Department of the Government of India in 1935-36. Pp. ii+37+2 plates. (Delhi: Manager of Publications.) 14 annas; 1s. 6d. [712]

Catalogues, etc.

Second-hand Books in many Departments of Literature, together with a Selection of Reminders. (Catalogue 400.) Pp. 74. (Oxford: B. H. Blackwell, Ltd.)

Calendar for 1937. (Newcastle-on-Tyne: C. A. Parsons and Co., Ltd.)