

- 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 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.)