

pioneers of the algal flush of growth so that control without any secondary ill-effect is secured.

American experiments indicate that the concentration of copper sulphate necessary to control some algae (for example, 5.0–10.0 p.p.m. for *Scenedesmus*) may greatly exceed the limits tolerated by fish. Trout, for example, in River Itchin water containing 1 p.p.m. of copper sulphate were killed within 24 hr. Chlorine has similar disadvantages, but rosin amine compounds and 2:3-dichloronaphthoquinone both have promise as algicides.

Zoological Nomenclature

THE International Commission on Zoological Nomenclature gives notice that, as from December 6, it will start voting on the following cases involving the possible use of its plenary powers for the purpose specified against each entry. Full details of these cases were published on June 6 in the *Bulletin of Zoological Nomenclature* (16, Part 2): (1) *Mysis* Latreille [1802–1803], designation of type species for, and validation of neotype for species (*Cancer oculatus* Fabricius, 1780) so designated (Cl. Crustacea, Order Mysidacea); (2) *Dactyloceras* Hyatt, 1867, designation of type species for (Cl. Cephalopoda, Order Ammonoidea: Jurassic); (3) *gemmascens* Esper [1794] (*Madrepora*), validation of (Cl. Hydrozoa, Order Stylasterina). Comments should be sent as soon as possible in duplicate to R. V. Melville, assistant secretary to the Commission, 28 Park Village East, Regent's Park, London, N.W.1.

A Kerr Cell Electro-Optical Shutter

AN exposure time of 0.01 μ sec. is claimed for the Kerr cell electro-optical shutter and improved pulse-generator circuit devised by Avco Manufacturing Corporation's Research and Advanced Development Division (Lawrence, Massachusetts). The cell is of 2 in. square cross-section, and the electric field needed to produce phase rotation of the electromagnetic vector as it passes through a cell filled with nitrobenzene is 10–15 kV./cm., so that for a 5-cm. aperture the pulse generator must deliver a pulse of 50–75 kV. to the Kerr cell plates. The generator consists of a coaxial cable and a spark gap, and the cell is connected directly across the load resistor on the transmission line. Exposure time can be varied accurately from 0.01 to 0.1 μ sec. by changing the length of the transmission line. The form of the exposure characteristic is approximately square-wave. The selective absorption polarizing material used for the polarizer and analyser on the cell does not provide a completely opaque shutter in the 'off' position, but a transmission ratio of about 20,000 to 1 is obtained with ordinary stock material. The angle of incident light must be limited to 10 deg. or less from the normal, providing a limiting aperture of about $f/2.5$ and an effective aperture of about $f/10$ in operation of the shutter.

Geochemistry

CERTAIN aspects of migration of the chemical elements in the Earth's crust during geological times are discussed by A. A. Saukov (*Priroda*, 2, 10; 1958). While the majority of migration processes may be considered to be of a non-directional character, certain processes may give rise to directional types of migration. Thus, the gradual diminution of the quantities of radioactive elements in the Earth and a consequent diminution of the thermal energy of radioactive source may have affected the intensity of

metamorphism and magmatism during the geological history. Also, one may consider that the emergence and development of the biosphere has greatly affected the nature and the intensity of migration of the elements, which not only determine the 'directed' accumulation of such organogenic deposits as, for example, coal, bitumen and limestone, but also lead to the accumulation of free oxygen in the atmosphere. This, in its turn, may have affected the behaviour of iron compounds present in the hydrosphere, by a widespread precipitation of the oxidized ferric forms, so prevalent in the widespread iron ore deposits formed in the Pre-Cambrian metamorphic rocks.

National Science Foundation Grants for Science

THE National Science Foundation awarded 246 grants totalling 4,720,545 dollars during the quarter ending March 31, 1958, for the support of basic research in the sciences, for conferences in support of science, for exchange of scientific information, for short-term research by medical students, and for training of science teachers. This is the third group of awards to be made during the current fiscal year. During the first two quarters, awards totalled almost 20.5 million dollars. The research fields included are astronomy, chemistry, biology, physics, earth sciences, engineering sciences, mathematical sciences and social sciences.

Society for Applied Bacteriology

AT the recent annual meeting and summer conference of the Society for Applied Bacteriology, held in Bristol, the following officers of the Society were elected: *President*, Mr. D. A. McKenzie; *Hon. Secretary*, Mr. G. Sykes (Boots Pure Drug Co., Ltd., Microbiology Division, Standards Department, Nottingham); *Hon. Treasurer*, Mr. G. Ellis Jones; *Editor-in-Chief*, Dr. S. E. Jacobs; *Editor*, Dr. C. A. E. Briggs; *Hon. Publications Manager*, Mr. A. H. Walters; *Hon. Advertising Manager*, Mr. E. J. Mann; *Committee*, Dr. Eve Billing, Mr. N. J. Butler, Prof. E. L. Crossley, Dr. J. G. Davis, Dr. N. R. Knowles, Dr. Jane Meiklejohn, Mr. C. A. Scarlett, and Dr. M. Woodbine.

Darwinism and the Study of Society

TO mark the centenary of "The Origin of Species", a conference, organized by the Social Sciences Research Centre of the University of Edinburgh, will be held in Adam House, Edinburgh, during April 8–10, 1959. The proceedings will be divided into six sessions, as follows: (1) "Darwin's Place in the History of Thought", Prof. B. Willey (Cambridge), "The Intellectual Background during Darwin's Student Years in Edinburgh", Mr. G. A. Shepperson (Edinburgh); (2) "Darwinism and Human Society in Retrospect", Prof. Lancelot Hogben (Birmingham), "Natural and Social Selection", Dr. W. Stark (Manchester); (3) "Genetic Determinants of Human Behaviour", Prof. C. H. Waddington (Edinburgh); (4) "Social Evolution", Prof. Morris Ginsberg (London); (5) "Communication in Animal and Human Societies", Mr. S. A. Barnett (Glasgow); (6) an appraisal of the conference by Dr. J. Bronowski (director of the Coal Research Establishment) and Prof. Asa Briggs (Leeds). Further particulars may be obtained from Dr. M. P. Banton, 39 George Square, Edinburgh 8. Limited accommodation for visitors will be available in one of the University halls of residence; early application is advised.