

38 Old Queen Street, S.W.1); for agricultural and veterinary research purposes, the Agricultural Research Council (inquiries to Mr. W. G. Alexander, 6a Dean's Yard, Westminster, S.W.1); for research in other branches of science, and for industrial research, the Department of Scientific and Industrial Research (inquiries to the Secretary of the Department, 24 Rutland Gate, S.W.7). A number of consignments of isotopes have been received under this arrangement, mostly for medical research purposes.

*Availability of Stable Isotopes.* Following discussions last year between the Department of Scientific and Industrial Research, the Medical and Agricultural Research Councils and the Ministry of Supply, the Ministry purchased from the Eastman Kodak Co. at Rochester, N.Y., a quantity of the  $N^{15}$  isotope of nitrogen at 200 dollars per gram of  $N^{15}$  at a concentration of 30 per cent in the ammonium radical of ammonium nitrate. Part of the material obtained has already been allocated to the Medical Research Council and also to one or two investigators sponsored by the Department of Scientific and Industrial Research. The remaining material, amounting to several grams of  $N^{15}$ , is at present held at the Atomic Energy Research Establishment and can be made available for research workers whose research is sponsored by the appropriate body referred to above. A few grams of enriched  $C^{13}$ , in concentration ranging up to 50 per cent, has also been purchased from the United States for medical research purposes in Great Britain.

With regard to production in Britain, it is understood that commercial production of enriched  $N^{15}$  is being undertaken by Genatosan, Ltd., at Loughborough, and that the firm will offer this isotope for sale generally. A plant for the production of enriched  $C^{13}$  by the use of the distillation-exchange process using liquified carbon monoxide is nearing completion at Harwell. This is expected to meet British requirements for some time to come. In addition, a thermal diffusion plant capable of enriching the  $O^{18}$  isotope of oxygen by a factor of 100 is nearing completion, and it is expected that quantities of this material will become available at Harwell in about three months time.

Electromagnetic separation equipment is also being built at Harwell for the production of small quantities of many other separated isotopes for research purposes. Isotopes of the very high purity attained are essential for many research purposes in nuclear physics.

*Mass Spectrometer Facilities.* One of the difficulties attending the use of stable isotopes at present in Great Britain is the lack of facilities for assay; and until the position is relieved by the construction of further mass spectrometers, full use should be made of the instruments which are available. The Medical Research Council has two instruments operating at the National Institute for Medical Research, Hampstead, and is prepared to do assay work and to advise in the preparation of samples from biological material. The Atomic Energy Research Establishment is also prepared to do a limited amount of assay work on gas samples prepared in standard 'break-seal' tubes obtainable from the Establishment.

*Allocation of Isotopes among the various Users.* In order to allocate the available isotopes among the users in various fields of research, an Isotope Allocation Committee has been set up, under the chairmanship of Sir John Cockcroft. The membership of

the committee includes representatives of the Medical Research Council, the Agricultural Research Council and the Department of Scientific and Industrial Research, the latter representing universities and industrial interests. This Committee will decide questions of allocation of isotopes in short supply, taking into account the urgency of the investigation in question and the facilities available for its conduct. It will be necessary for this Committee to be satisfied that adequate precautions are being taken in the handling and disposal of radioactive materials.

This Committee will also decide on priorities and allocation of stable isotopes produced at Harwell while these are in short supply.

Fuller information about facilities at present available can be obtained from the Isotope Information Office, Atomic Energy Research Establishment, Harwell, Nr. Didcot, Berkshire.

<sup>1</sup> Seren, Friedlander and Turkel, *Phys. Rev.*, **72** (10), 888 (Nov. 1947).

<sup>2</sup> See *Rev. Sci. Instr.*, **17** (9), 348 (Sept. 1946); also "Radioisotopes for International Distribution—Catalogue and Price List, Sept. 1947"—Isotope Branch, U.S. Atomic Energy Commission, P.O. Box E, Oakridge, Tennessee.

## UNESCO AND A WORLD SOCIETY

THE United Nations Educational, Scientific and Cultural Organisation was created on November 16, 1945, and now, nearly three years later, comes a Ministry of Education pamphlet reporting on its progress\*. In its constitution the purpose of the Organisation was declared to be "advancing through the educational and scientific and cultural relations of the peoples of the world the objective of peace and of the common welfare of mankind for which the United Nations was established and which its charter proclaims".

Since its inception, the Organisation has been attacked because it has failed to stir the imagination of the people and, in consequence, remained quite unknown to the vast majority. These are criticisms which the Unesco secretariat admits, but insists that they were inevitable during the preparatory stages of the Organisation. For three years the policy has been to build a solid foundation, and the officials have deliberately eschewed the kind of publicity which would make the Organisation appear to be a patent medicine or a political stunt. Now they believe the preparatory work has been done and the time has come to arouse public interest in an agreed programme. The demand for information is rapidly increasing, and the present pamphlet is the beginnings of a campaign in which, by means of literature and speakers, it is hoped to make Unesco a living force and a household name in Britain.

With this pamphlet at least the campaign for popular sympathy and collaboration has made a good start. The origins of Unesco are placed in historical perspective, with the theme emerging that "we are now in process of becoming members of a world society conscious of the singleness of man and of the universe". Nor does this high-sounding phrase mean that the Organisation is dominated by any spirit of complacency. It is frankly recognized that it may not achieve its declared purpose, but it will still have made an effective contribution to the

\* Ministry of Education Pamphlet No. 12: UNESCO and a World Society. Pp. 46. (London: H.M. Stationery Office, 1948.) 1s. net.

growth of a world society as the successor to the International Institute for Intellectual Co-operation and, more immediately, the Conference of Allied Ministers of Education.

"UNESCO and a World Society" shows how the Organisation is constituted, the function of its subdivisions and the range of its activities. All this is clearly set out, as is also the controversy between those who believed that the Organisation should be limited and concentrated for the intellectual few, and those who declared that to help the minority is not the way to save peace and that the Organisation is not for the pedants but for the people. The design of the Organisation shows how these differing opinions have been fairly reconciled.

Unesco has also been criticized for arranging meetings between men of science to discuss 'obscure' topics on the grounds that the sole purpose of the Organisation is to contribute to peace and security; the critics assert that the Organisation should undertake nothing that cannot be demonstrated on the blackboard to contribute directly to peace. Its position is defended in "the belief that everything contributing effectively to human sympathy through intellectual and spiritual forces is U.N.E.S.C.O.'s business". This being the case, one is tempted to ask why the Organisation has not concerned itself with those sports organisations which have already done so much to bring people of different countries together. Through the Anglo-Netherlands Sports Association, for example, contests of all kinds take place throughout the year between representatives of towns like Sheffield and Nijmegen, Hull and Rotterdam, and Rotherham and Amersfoort. During the interchanges much is done, both officially and unofficially, to give the guests a real impression of the educational, industrial, social, economic and civic life of the town they are visiting. Here is a popular educational movement of peoples which is directly contributing to understanding and which Unesco might develop for its own sake. More interest, too, might be shown in the rapidly developing schemes for the exchange of employees between industrial organisations like the members of the British Iron and Steel Federation and similar industries overseas.

The rest of the pamphlet contains details of the various committees, of work already accomplished by the Organisation and a summary of its immediate programme for Britain. It is a record of increasing activity which needs to be more widely known, and shows that the present publicity campaign will not have begun too early.

T. H. HAWKINS

## ANNUAL EXHIBITION OF THE ROYAL PHOTOGRAPHIC SOCIETY

THE ninety-third Annual Exhibition of the Royal Photographic Society is again being held in two parts. The second part, which contains the scientific exhibits, opened on October 9 at the Society's House, 16 Prince's Gate, S.W.7, and closed on October 30. The whole exhibition will be shown at the Museums and Art Gallery, New Walk, Leicester, during the period November 6-December 5.

The section on Nature photography again contains many high-speed flash photographs, taken both by day and by night. The value of the method in studying fast movements is well shown by photographs of birds in flight and of the tongue action of

toads and chameleons. It can also result in pictures displaying surprisingly beautiful designs. There is a photograph, of a robin alighting on a twig, in which the individual wing feathers are spread fanwise in a manner that could not be seen in any other way. (This photograph, with many others from the Exhibition, is reproduced in "The Year's Photography", the September issue of the *Photographic Journal*.) Of special interest are the several instructive series showing the life-histories of various creatures and plants. These are all well annotated; but the descriptions of the life and habits of the Natal *Peripatus* and of the one-day life of the stinkhorn deserve special mention. It is remarkable how much the presence of a caption, even on an individual picture, increases the interest. There is a picture of a young grey seal among many other equally superb pictures which remains in the writer's memory simply because it is the one with a short descriptive caption.

Many of the scientific photographs are liberally provided with descriptive matter, but there are woeful exceptions. Among these are a pair of excellent photomicrographs of the living spermatozoa of a mouse, one taken with phase contrast and the other by ultra-violet light. Others in the same series show the chromosomes in bean-root cells at different stages in mitosis. These are presumably phase-contrast pictures; but it is not clear in the catalogue, and only the catalogue numbers appear on the exhibits. Another pair of pictures illustrates normal and pathological nerve cells (according to the catalogue), but there is no indication of which is which. Information is also entirely lacking in several pictures labelled "Molecular Design". The writer presumes that these were intended for the pictorial part of the Exhibition—they have no scientific implication as shown.

There is an excellent series comparing results obtained with different kinds of microscope—normal optical, phase-contrast, interference and electron. Another exhibit describes a method of recording the colour aberrations of high-power objectives. A straight-line object illuminated by mercury-cadmium light produces an elongated line spectrum on the photographic plate by means of a grating and prism placed behind the eyepiece. The line object is tilted at a small angle to the normal object plane, so that the position of sharp focus of the spectrum lines of different wave-length varies according to the chromatic aberrations of the system.

Two exhibits illustrate a new method of micro-radiography applied to the investigation of complex alloyed steels. Variations in composition give rise to a fine banded structure, and the identification of the elements responsible is possible by selection of the exposing radiation. Another series, illustrating a technique for resolution testing in autoradiography, demonstrates the possibilities of the autoradiography of plant or animal tissue containing radioactive tracers. Pinhole radiographs of the internal surface of the copper anode of a magnetron enables the distribution, direction and speed of the bombarding electrons, about which little is known in detail, to be determined (see *Nature*, 161, 244; Feb. 14, 1948).

Nuclear plate photographs illustrate the natural disintegration of radium and radiothorium, a meson track 400  $\mu$  long and the effects of selective development on nuclear tracks. Lowering the pH of the developer reduces the background relative to the tracks, and addition of bromide restrains the development of alpha tracks before affecting fission tracks.