

ROYAL SOCIETY EMPIRE SCIENTIFIC CONFERENCE

Recommendations

AT the Royal Society Empire Scientific Conference during June 17–July 8, discussions took place on a number of topics, and recommendations representing interpretations of the general views of delegates and guests were framed by the steering groups for each of the discussions. We print the recommendations below.

Outstanding Problems in Agricultural Science in the British Empire

1. A Conference of soil surveyors and pedologists should be set up to consider the development of soil surveys in general and to co-ordinate methods of soil classification.
2. Work is required on the structure of clays, of humus, and of the clay-humus complex, requiring advance of technique in studying finely divided material.
3. Work is required on the ion-water atmosphere surrounding colloidal bodies, including living organisms, root hair, and on the structure and binding force of the water. This should include a study of reaction in interpenetrating atmospheres.
(2 and 3 together should throw much light on the agricultural problems of soil structures, aggregation and stability to alternations of wetting and drying, anti-erosion properties, availability and fixation of plant nutrients and inhibition of uptake of one plant nutrient in the presence of another, for example, Ca : K balance.)
4. Further study is required in the subject of soil microbiology. This should include the relation of soil micro-organisms to soil organic matter, the availability of inorganic plant nutrients and plant pathology as well as such taxonomic work as may be necessary.
5. It is recommended that efforts should be made to evolve both methods and apparatus for studying the nature of the stress-strain relationships in soil in particular relation to cultivations.
6. Special study is required of the developmental and physiological action of the root in relation to its environment. This involves the study of (a) the water relations, (b) the mineral relations of the root as well as root secretions and excretions.
7. Physiological development of plants in relation to environment, especially temperature and light (intensity, duration and quality and therefore artificial and natural 'shade') should be studied.
8. Investigations are required on the following problems: (a) quantitative inheritance; (b) incompatibility and sterility of wide crosses; (c) the induction of polyploids and the possibility of inducing desirable mutations; (d) breeding methods.
9. Investigations are needed on the epidemiology of fungal, insect and virus organisms and on pathogenic species in relation to strain specialization.
10. Further investigation should be made into methods of control of fungal, insect and virus attacks, especially the possibility of breeding for disease resistance and the nature of such resistance.
11. Climatic surveys, both regional and local, are accepted as a pre-requisite to the investigation of agricultural problems. There should be provided throughout the Commonwealth and Empire a series

of meteorological stations measuring daily rainfall, free water surface evaporation, relative humidity, day and night temperature of the shaded and unshaded atmosphere and the quality and intensity of daylight.

12. Both reconnaissance and detailed soil surveys should be available as a basis for ecological and physiological investigations of the field problems and concerning agriculture.

13. Ecological studies of the natural vegetation should form part of regional surveys designed to afford an integrated pattern of climatic and soil relationships. For this reason, vegetational surveys need, whenever possible, to accompany soil surveys.

14. Animal physiology on a general basis and including all the chief domestic animals should be specifically studied. This is the need basic to research on nearly all kinds of practical livestock problems, including those of pathology. The study (biochemical and microbiological) of ruminant digestion is a good example.

15. There is a dearth of men with ample knowledge of domestic animal physiology. Steps should be taken to encourage their training and their subsequent employment.

16. More knowledge is required of metabolism and enzyme systems of spermatozoa and of ova.

All through the session there was insistence on the manifest dependence of agricultural science on further developments in the basic sciences.

Physiological and Psychological Factors Affecting Human Life under Tropical Conditions and in Industry

General. The Conference surveyed certain of the results obtained during the War in the laboratories of the Medical Research Council at Cambridge and London, and in the Department of Physiology, University of Queensland. It was agreed that much of this work had a general application to many countries of the Empire. It was agreed further that facilities for developing this work, both in laboratories in the 'field' and in suitably equipped centres in the United Kingdom and Dominions, were desirable.

Special recommendations. 1. Physiological and psychological research carried out under artificial conditions for war-time purposes needs to be extended to actual conditions in the tropics and to industries in which high temperatures are encountered. This would require the establishment at suitable centres (for example, in Africa and in the Far East) of well-equipped laboratories. These should work in close contact with similar laboratories in the United Kingdom and Australia, in which the more basic research should be carried out.

2. Research on output in industry in the tropics needs to be done as data are practically non-existent. Investigation is required also into the habitability problems of clothing, housing and transport.

3. Attention is directed to the need for improvement of instruments for the study of climatic factors.

4. An authoritative guide on standards for building (domestic and industrial) in the tropics on the lines of the reports of the Building Research Station of the Department of Scientific and Industrial Research is desirable.

5. War-time standards of ventilating practice in the Services need to be reviewed in relation to civilian and industrial conditions in the tropics. A revision of existing scales of warmth and comfort is urgently required.

6. There is a definite need for co-ordination within the Commonwealth. This should take the form of exchange both of workers and of information. It is suggested that a co-ordinating Empire Committee on Human Climatology should be set up. This would include workers in physiology, psychology, industrial hygiene, the related aspects of nutrition and also representatives from the allied field of tropical animal physiology.

7. It is strongly recommended that provision be made for a number of research fellowships for Colonial medical graduates, to enable them to carry out research in climatological laboratories.

8. The participation, by the Commonwealth countries concerned, in a co-operative study of air-conditioning and the consequent engineering developments, is recommended.

Etiology and Control of Infectious and Transmissible Diseases

General. 1. The Conference, having regard to the present state of knowledge of the ecology of infectious diseases, feels that there are grave dangers of spread from one part of the Empire to another and within certain Empire countries. Particular attention was directed to malaria, yellow fever, schistosomiasis, trypanosomiasis, plague and cholera.

2. More knowledge of the ecology of infectious diseases, their arthropod vectors, their reservoir hosts and the reasons for the persistence of infection in localized endemic areas is needed. The attention of universities and other authorities should be invited to the need in many parts of the Empire for ecologists and entomologists, both medical and non-medical.

Special recommendations. 1. That an international organisation should be established under the United Nations Organisation to prevent the spread of diseases from endemic to non-endemic areas. Such an organisation would: (a) control vaccination and inoculation in connexion with diseases to which these or other such precautions may be held to be applicable; (b) ensure the freedom of aeroplanes, aerodromes, ships and other facilities for travel between different countries, from insects and other media of infection; (c) secure uniformity in regulations regarding certificates required by travellers between different countries; (d) devise such methods of administration as would avoid vexations and unnecessary impediments to the movement of travellers or goods.

The Conference notes that existing regulations at airports and other transit centres are unsatisfactory owing to a shortage of trained sanitary inspectors and other medical personnel. It would direct attention to the availability of a substantial pool of junior personnel suitable for recruitment into the required sanitary service, among ex-Service men and women, particularly in India and the Colonies.

2. For the prevention of the spread of certain diseases from endemic to non-endemic areas within particular countries, the Conference urges that local and permanent organisations are required for containing and controlling the diseases in the endemic areas. Particular reference is made to cholera and plague.

The Science of Nutrition with Particular Reference to the Special Problems of the Empire, including the Nutritional Status of the Indigenous Peoples of the Colonies

Preamble. The Conference recognizes that the improvement of the nutritional status of the peoples of the Commonwealth is a part of general social and economic policy in the territories concerned. It urges the necessity for developing at all levels of Colonial government a proper awareness of the nutritional needs of the indigenous peoples.

The Conference strongly supports the need for integrating the efforts of producer, consumer, technical and administrative personnel in effecting improvements in nutrition. In this connexion the suggestion put forward at the first session of the Conference of the Food and Agriculture Organisation for the achievement of such integration is welcomed.

The Conference agreed upon the evidence of malnutrition in the Empire, both as to quantity and quality, and urges that measures should be applied immediately for the improvement of the present position.

Special recommendations. 1. Immediate therapy of vitamin-deficiency diseases, particularly vitamin B₁ for beriberi in Malaya and Hong Kong, iodine in goitrous areas in Nigeria, calcium and vitamin D in areas where rickets occurs in the Gold Coast, iron where anaemia is common, especially in British Guiana.

2. The introduction into the diet of indigenous peoples of nutritional supplements, such as iodine, calcium, iron.

3. Improved methods of storing, processing and distributing foodstuffs, such as better methods of milling wheat and maize, the parboiling of rice, the drying of fish, fruit and vegetables. The Conference urges the need for more food technologists in this connexion.

4. Increased production of the 'protective foods' through: (a) the control of livestock diseases; improved animal husbandry and animal breeding, especially of local strains, with the object both of increasing the productivity of the native pastoralist's herds and of developing dairy types suited for use in native mixed farming areas; (b) increased and improved fishing operations with the following general objectives: (i) fishery exploration and fish catching (fishery engineering); (ii) fish processing and technology; (iii) fishery biology and hydrography; (iv) development of great lake fisheries together with fish culture in fresh and brackish waters.

5. Increased food production generally by: (a) the greater use of fertilizers; (b) the extension of plant breeding. More plant surveys and an increase in the number of trained plant breeders are urgently required for this purpose, particularly in the African Continent.

Modern Methods of Mapping and Exploration by Air

The Conference agreed that the use of radar would much reduce the time required for the making of maps. In view of the importance of completing the topographical mapping of various parts of the Commonwealth for the purpose of economic development, the Conference put forward the following recommendations:

1. Research and development in radar and photographic equipment and techniques in air survey

should be vigorously pursued, if the full scientific and economic advantages of these methods are to be obtained in all parts of the Commonwealth.

2. The appropriate authorities should be approached with the view of increasing the number of persons trained to conduct further research in these subjects.

Scientific Information Services

General. The Conference invites the Royal Society at an early date to convene a conference of the libraries, societies and institutions responsible for abstracting and information services, in order to examine the possibility of improvement in existing methods of collection, indexing and distribution of scientific literature, and for the extension of existing abstracting services. The Conference would pay particular regard to the cost of such services and to the need for funds from Government sources for their support.

In the proposed conference: (1) Representatives of the appropriate authorities in the Dominions, India and the Colonies should be included, together with observers from the United States. (2) The interests of scientific men as users of scientific information should be especially considered. (3) Consideration should be given to the abstracting of Dominion journals locally, for transmission to the main abstracting bodies in the United Kingdom.

Special recommendations. 1. Consideration should be given to the establishment of a network of information services throughout the Dominions. Such a network would provide central focal points and for a two-way transmission of matter (either direct or through existing local centres adapted for the purpose).

2. In view of the need of the scientific worker for possession of individual scientific papers on his own subject, the possibility of the publication, classification and distribution of papers in separate form or as reprints should be considered.

3. The issue of occasional reviews of special branches of science, both for the specialist and for the general scientific reader, is considered desirable as a supplement to other forms of publication.

4. The extended provision of micro-film and other forms of documentary reproduction is considered important for the rapid transfer of information throughout the Commonwealth. An economic service for the purpose requires centres in the United Kingdom and in each of the Dominions.

5. The Conference recognizes that the qualifications of staff in scientific information services and special libraries call for special training and selection, and recommends the provision of facilities for increasing the number of properly trained staff.

Interchange of Scientific Workers throughout the Empire, and the Future of War-time Scientific Liaison Offices

The Conference agrees that interchange of scientific staffs, both of universities and research institutions, is of vital importance to the maintenance and development of scientific research within the Commonwealth and Empire.

1. To promote such interchange the Conference strongly urges upon all the responsible authorities the urgent need for: (i) adequate provision by universities and research institutions to enable the

senior and junior scientific staffs to take periodical leave for overseas visits, both short- and long-term; (ii) the raising of staff complements to a level sufficient to afford individuals adequate time for research and for study or for special leave without thereby placing additional burdens on their colleagues; (iii) provision of the largest practicable number of travelling scholarships for post-graduate work (see also 2 (ii) below); (iv) a system of adequate financial provision for travelling and subsistence allowances to avoid loss to the individual due to differences in living costs in different countries; this is to apply both for members of university staffs and for holders of travelling scholarships; (v) the provision of resources to enable the invitation of scientific workers from overseas for short periods to advise or for collaboration in specific research projects; (vi) the exemption of all travelling scholarships and allowances from income tax either in the country of origin or of reception.

2. To the same ends the Conference further recommends: (i) an official policy for continuance and development of a system of Commonwealth liaison offices as being an essential part of the machinery for facilitating interchange of scientific workers and activities connected therewith, and directs that the attention of the Official Conference be invited to the matter; (ii) urges the need for the central compilation and publication of a list of scholarship facilities existing within the Commonwealth and proposes that the task be entrusted to whatever organisation may be employed for centralizing scientific information services; (iii) invites the attention of the Official Conference to the need for the adoption of a uniform superannuation scheme for the Commonwealth to facilitate transfers without prejudice to such rights; (iv) notes with anxiety the serious handicap to interchange caused by the high cost of sea and air transport, and invites the Royal Society to initiate action with the appropriate organisations to remedy the position.

Empire Co-operation in the Scientific Field with Existing and Projected International Organisations

1. The Conference recommends that the delegations should advise their Governments to adhere to each of the international scientific unions, to the International Council of Scientific Unions and to other recognized international scientific organisations.

2. The Conference recommends that scientific correspondents be appointed in Colonial territories to establish and maintain direct contact in scientific matters with the operational agencies of the United Nations and with other recognized international bodies.

3. The Conference would heartily welcome a policy on the part of the United Nations and its operating agencies to make the utmost use of all scientific bodies which are doing valuable work of an international scientific character and would stress the importance of preserving the independence of such bodies and of leaving the control of their activities to scientific men.

4. The Conference recommends that each delegation should advise its Government and the established scientific institutions of its country to collaborate closely with any organisation of the United Nations concerned with the promotion of science and its applications.

Standards of Measurement

1. (a) It is considered highly desirable that early steps should be taken to eliminate the slight difference in the values of the yard and pound at present in use in the Commonwealth and in the United States of America.

(b) It is recommended that discussions should be pursued with the appropriate authorities in the United States with the view of reaching mutual agreement on this question (as a basis of recommendations to Commonwealth authorities) and that the Director of the National Physical Laboratory, Teddington, should act in this matter on behalf of National Laboratories in the Commonwealth.

The Conference suggests that: (i) the reformed units should be precisely related to the corresponding metric units; (ii) tentative values for conversion factors should be as follows: 1 yard = 0.9144 metre exactly, or 1 inch = 25.4 mm.; 1 lb. = 0.453 592 37 kgm. or 0.453 592 3 kgm.

2. The Conference advocates the adoption of the metric system in all fields of science. Examples of subjects in which an improvement in this respect is desirable are aeronautics and pharmaceutical science.

3. If text-books and scientific data or memoirs are expressed in systems other than the metric, conversion factors or the metric equivalent should be included.

4. The Dominions and India should participate in the organisation of the Convention du Mètre.

5. There should be meetings at suitable intervals of representatives of the Commonwealth National Laboratories to consider: (a) the maintenance of uniformity of standards of measurements; (b) general programmes of research in regard to fundamental scientific standards. The National Physical Laboratory in Great Britain should act as the co-ordinating body. The Conference emphasized the importance of mobility of workers between the various laboratories.

6. Within the Commonwealth there should be organised a service of radio transmissions at standard frequencies which, together with those of the United States, would suffice to meet the needs of the Empire.

7. The United Nations Standards Organisation be asked to give consideration to the question of nomenclature and symbols at the international level, taking into account, so far as is practicable, both scientific and industrial usages.

8. The Conference records its appreciation of the advances which have been made in the international standardization of biological materials and noted with satisfaction that much of this standardization is now brought on to a physical and chemical basis.

Collection of Scientific Records and Material and Risks Involved in the Distribution of Plants, Seeds and Animals

1. Having regard to the limitations of space and scientific man-power, we recommend a policy of rationalization in respect to research collections for taxonomy. To this end the avowed scope and objective should be publicly stated by each institution, especially as to the particular groups for which it accepts responsibility of intensive representation.

2. When new species are described, replicates should, where possible, be provided for major cosmopolitan collections and for those institutions where the group concerned is intensively studied. For unique specimens, microfilms, casts, etc., should be similarly provided.

3. Increased provision be made for the training of taxonomists and that an increased number of taxonomic posts be created.

4. Better facilities be provided for the collection of living material, for its reception when collected, and its subsequent maintenance.

5. To ensure early action and continuing attention for varietal collections of economic species, for genetic and breeding purposes, one organisation in the Commonwealth should be specifically entrusted with the essential central co-ordination.

6. Adequate quarantine measures should be taken respecting new introductions to ensure their supervision before release and competent diagnosticians be available. Such quarantine measures to be supplemented by a good intelligence service.

7. Information regarding the geographical distribution of pests and diseases should be made readily available.

8. Steps should be taken to preserve native breeds of livestock.

Land Utilization and Conservation throughout the Empire

In view of the gravity of the situation caused by the loss of and damage to the soil in many parts of the Commonwealth, the Conference attaches great importance to the carrying out of the following recommendations, with the help of trained agricultural scientists: (a) erosion surveys; (b) soil surveys; (c) investigations relating to the maintenance and improvement of soil fertility.

In addition to the above investigations, the Conference urges the importance of surveys to determine the present pattern of and trends in land use, as a basis for the maintenance of soil fertility.

In view of the similarity existing between problems of soil conservation in different parts of the Commonwealth, the Conference would emphasize the importance of a continuous interchange of information and the need for periodic conferences of specialist officers engaged upon problems of soil fertility, erosion and land utilization.

A Co-ordinated Survey of the Mineral Resources of the Commonwealth

General. The Conference reviewed carefully the position regarding the mineral resources of the Commonwealth in relation to the serious present and threatened further shortage of many important key minerals; and agreed that a much increased Empire effort is required in all aspects of geology, geophysics, mineralogy, process metallurgy and in the compilation of reliable data on which estimates of present and future supplies of minerals may be made.

Special recommendations. 1. That a Commonwealth organisation be established with headquarters in Great Britain to include the following functions, some of which are performed already by the Imperial Institute: (a) To act as a clearing house for information, statistical and general, on the scientific and economic aspects of the mineral resources and mineral production metallurgical industries of the Empire. (b) To institute, in concord with the various Governments of the Commonwealth, standard methods of recording figures of production, trade and resources in mineral and metallurgical products. (c) To promote the exchange of information regarding the estimation of mineral reserves and/or to publish estimates at suitable intervals. (d) To provide an

information service dealing with publications concerning all branches of geology, mineralogy, palaeontology, geochemistry, applied geophysics, ore-dressing and production metallurgy. (e) To refer to suitable specialist institutions for advice or investigation, mineral problems and specimens, for the study of which facilities may not be available at the time in most parts of the United Kingdom, Dominions, or Colonies; and to advise on the extension of existing, or establishment of new, institutions as may from time to time be considered necessary to meet the requirements in these respects of the Commonwealth.

2. That systematic geological survey work being the foundation of all progress in the mineral industries, in future much stronger geological organisations are essential for work in all parts of the Commonwealth.

3. That attention be given to proposals to assist established British journals of geology, mineralogy and palaeontology, etc.

The Conference reviewed with approval the accompanying summary of the essential functions of a geological survey and agreed that anything short of this programme would generally prove to be an uneconomical investment of public funds.

Appendix. Essential Functions of a Geological Survey

Official geological surveys should be maintained in sufficient strength to permit of:

(a) The development of the general geological map, which will become the guide for all prospecting activities, official and private, as well as for operations regarding water supply and engineering projects.

(b) The preparation of a geological map by stratigraphical geologists is not possible without the constant reference of questions to specialists in palaeontology, petrology, mineralogy and geophysics.

(c) For the development of the mineral resources of a country to the best advantage, it is important for a geological survey department to be familiar with the statistics of production, imports and exports. From the figures of such returns the department can advise its Government to direct its policy to the encouragement of industries based on raw mineral supplies, for it is obviously uneconomical to export raw minerals which might be smelted or otherwise processed near their sources, and equally uneconomical to import materials and articles which might be manufactured from minerals of domestic origin.

(d) It is essential to build up at the headquarters of a survey a reference library and a collection of reference specimens. It is equally important to maintain publications in recognized form, through the distribution of which geological officers will get the criticism as well as the appreciation of outside scientific and technical communities.

(e) The activities of a geological survey department should be purely advisory; but as the full list of specialists and equipment required is generally beyond the capacity of smaller States and Colonies to maintain, it is desirable to federate for such advisory functions suitable groups geographically and politically related to one another.

Natural Products of the Empire and the Chemical Industries that are or might be Based on them

In view of the varied nature of the natural products of the Commonwealth, their wide geographical dispersal and the diverse and often inadequate facilities

in staff and equipment which may be available locally for their investigation, the Conference makes the following recommendations:

1. That a standing central committee, including representatives of the United Kingdom, the Dominions, India and the Colonies, should be set up to advise upon policy for the co-ordination of research, both scientific and economic, into the natural products of the Commonwealth. Such advice upon their own particular problems would be made available to all Commonwealth countries with the minimum of delay.

2. The Conference, while recognizing the desirability of centralizing research upon problems common to many parts of the Commonwealth, supports very strongly the view that research upon problems of more local interest should be co-ordinated within regions. It is anticipated that this would lead to increased efficiency and economy in man-power. The Conference regards advice upon the concentration or regionalization of the research in question as an important function of the central committee.

Post-War Needs in Fundamental Research

The Conference wishes to direct the attention of all concerned with the guidance of fundamental scientific research to the Royal Society's "Report on the Needs of Research in Fundamental Science after the War". It would also invite attention to the report on scientific man-power recently issued by the Government of the United Kingdom. The discussion at the Conference, which was of necessity limited in scope, revealed a particular shortage in the Commonwealth of scientific workers in such fields as taxonomy, genetics and microbiology.

1. The Conference is of the opinion that in each country of the Commonwealth the mechanism for guiding long-term research in fundamental science should be reviewed, in order to foster fertile research work in all important subjects. The systems for advice and financial assistance in this connexion should be studied carefully.

2. The needs of the future will require a great increase in the number of scientific workers, and it is considered important that plans for extending fundamental research in any field should be supported by measures designed to increase the number of trained scientific men able to carry out such plans.

3. In order to secure the proper flow of young scientific workers from educational establishments, it is considered of importance that the educational system of each country should be harnessed so far as may be necessary to this particular long-term need.

Africa as a Regional Area for Fundamental Scientific Research

1. The Conference considers that there is a growing need for the development of long-term fundamental research dealing with African problems on a regional, as distinct from a territorial, basis.

2. To meet this need there should be formed at an early date a Commonwealth African Research Committee with the following terms of reference: (a) to examine and put forward proposals for the centralization of fundamental research in African problems on a regional basis; (b) to plan such developments ahead so as to ensure the necessary financial support and the training of the specialist staffs needed; (c) to advise the Governments con-

cerned through the appropriate authorities on matters of regional development and co-operation in fundamental research.

3. The field of the Committee would in the main cover activities south of the Sahara, and foreign States with territories in this portion of Africa should be invited to be represented as observers.

Cosmic Rays

The Conference recommends that the following investigations of cosmic radiation would be of great scientific value and are also likely to have important meteorological applications.

1. Further measurements of the variation with time of the cosmic ray intensity at selected stations at sea-level and on mountains. Measurements in the southern hemisphere are of particular importance.

2. Further measurements of the variation of cosmic ray intensity with latitude and longitude by experiments in aircraft over a wide range of height.

The Conference recommends that the necessary organisation to carry out the work should be set up in the first instance on an Empire basis, but that the question of extending the organisation be raised at the next meeting of the International Union of Physics.

The Village Pond in the Rural Economy of India

The oceanographic and fisheries scientists present as delegates to the Royal Society Empire Scientific Conference request its Steering Committee to arrange that if possible a meeting be called during the period of the British Commonwealth Scientific Conference of these delegates, and other specialists available in Great Britain, to discuss methods for co-operation and co-ordination of fisheries and oceanographical research within the Commonwealth, and similar matters of common interest.

The above delegates also would appreciate any facilities which could be given for a tour to centres of fisheries research in the United Kingdom following the termination of the Official Conference.

[Action on the above recommendation was taken immediately.]

Geochemistry

Delegates attending this discussion endorse the recommendation contained in the Royal Society's Report on the needs of research in fundamental science after the War "that substantial provision should be made for quantitative spectrographic analysis of rocks, minerals and natural waters"; and further, recommend that adequate facilities in one or more institutions should be provided for like investigations (both fundamental and applied) on material which might be submitted from centres (including Colonial geological surveys and other geological organisations) within the British Empire.

Hormones

In view of the steady increase in the demand for insulin, the Conference urges that a strong recommendation be made to all the countries of the Commonwealth that every effort be made to collect, process and preserve all available pancreas. Purified insulin, which can be stored for long periods without loss of potency, will be needed on an increasing scale for the treatment of diabetes.

Fish Culture and Malaria Control

In view of the great possibilities of utilizing ponds for fish culture in various countries of the Commonwealth where malaria is prevalent, the Conference proposes that the attention of governments of countries so situated should be directed to the urgent need of integrating fish culture practice with measures for malaria control.

281

FORTHCOMING EVENTS

(Meeting marked with an asterisk * is open to the public)

Tuesday, July 30

BRITISH FEDERATION OF UNIVERSITY WOMEN (at Chatham House, St. James's Square, London, S.W.1), at 8 p.m.—Prof. Lise Meitner: "Atomic Energy".*

APPOINTMENTS VACANT

APPLICATIONS are invited for the following appointments on or before the dates mentioned:

PSYCHOLOGIST (part-time) for the Child Guidance Clinic at High Wycombe—The School Medical Officer, County Health Department, County Offices, Aylesbury (August 3).

PHYSICIAN (2) to carry out research work on instruments, electronics and automatic control—The Personnel Officer, British Iron and Steel Research Association, 11 Park Lane, London, W.1 (August 3).

DIRECTOR OF HORTICULTURAL STUDIES—The Registrar, University College, Nottingham (August 7).

LECTURER IN INVERTEBRATE ZOOLOGY—The Head of the Department of Zoology, Imperial College of Science and Technology, Prince Consort Road, London, S.W.7 (August 9).

LECTURER IN MECHANICAL ENGINEERING—The Registrar, The University, Sheffield (August 10).

DEMONSTRATOR IN ZOOLOGY—The Registrar, The University, Leeds 2 (August 10).

SENIOR ENGINEERING ASSISTANT to the Coventry Water Department—The Water Engineer and Manager, Spon House, 21 Allesey Old Road, Coventry (August 10).

HEAD OF THE NATIONAL COLLEGE OF HOROLOGY which is being established at Northampton Polytechnic, London—The Secretary of the Board of Governors, National College of Horology, at the Northampton Polytechnic, St. John Street, London, E.C.1 (August 10).

LECTURER IN ORTHOPAEDIC SURGERY—The Secretary, The University, Aberdeen (August 10).

DEMONSTRATOR IN BOTANY—The Registrar, The University, Leeds 2 (August 10).

SENIOR ASSISTANTS IN THE DEPARTMENTS OF PHYSICS, TELECOMMUNICATIONS, CHEMISTRY, CIVIL AND MECHANICAL ENGINEERING, and ELECTRICAL ENGINEERING—The Clerk to the Governors, Woolwich Polytechnic, Woolwich, London, S.E.18 (August 12).

LECTURERS IN THE DEPARTMENTS OF PHYSICS, TELECOMMUNICATIONS, CHEMISTRY, ELECTRICAL ENGINEERING, MATHEMATICS, and CIVIL AND MECHANICAL ENGINEERING—The Clerk to the Governors, Woolwich Polytechnic, Woolwich, London, S.E.18 (August 12).

PSYCHOLOGIST AND EDUCATIONAL ADVISER—The Secretary, County Buildings, Shrewsbury (August 12).

SENIOR SCIENTIFIC ASSISTANTS (2), and a JUNIOR SCIENTIFIC ASSISTANT, in the Agricultural Advisory Department—The Registrar, The University, Manchester (August 12).

FUEL TECHNOLOGIST to take charge of the Fuel Technology Division, Government Chemical Laboratories, Department of Mines, Perth—The Agent-General for Western Australia, Savoy House, 115 Strand, London, W.C.2 (August 15).

DEMONSTRATOR IN CHEMISTRY—The Registrar, Queen Mary College, Mile End Road, London, E.1 (August 15).

OFFICER-IN-CHARGE of a Section of Fisheries Exploration now being formed within the Division of Fisheries of the Council for Scientific and Industrial Research, Australia—The Secretary, Australian Scientific Research Liaison, Australia House, Strand, London, W.C.2 (August 17).

TEACHER (full-time) OF CHEMISTRY AND METALLURGY at the South-East London Technical Institute, Lewisham Way, London, S.E.4—The Education Officer (T.1), County Hall, London, S.E.1 (August 17).

SENIOR RESEARCH OFFICER at the University Institute of Colonial Studies—The Registrar of the University, Clarendon Building, Oxford (August 24).

G. F. GRANT CHAIR OF CHEMISTRY—The Registrar, University College, Hull (August 24).

HEAD OF THE PHYSIOLOGY DEPARTMENT—The Secretary, Rowett Research Institute, Bucksburn, Aberdeenshire (August 31).

LECTURER IN ANATOMY—The Secretary, The University, Aberdeen (August 31).

MARINE ZOOLOGIST—The Secretary, Marine Biological Association, The Laboratory, Citadel Hill, Plymouth (August 31).

REGISTRAR—The Registrar, University College, Leicester (August 31).

LECTURERS (2) IN EXPERIMENTAL PHYSICS—The Registrar, The University, Manchester 13 (August 31).

LECTURER (ungraded) IN PHARMACOLOGY—The Registrar, The University, Liverpool (September 7).