

bias to such studies and especially the study of the British Commonwealth of Nations, as an example of a new kind of political association between free and independent peoples, based on principles which are universally and permanently valid.

#### Beneficial Employment and Vocational Guidance

LOCAL education authorities will, next year, be called upon to consider applications for exemption from compulsory school attendance of children between fourteen and fifteen years of age and to determine in each case whether the employment proposed will be "beneficial" to the child. The Board of Education has suggested to local authorities, among other measures for qualifying themselves for determining these difficult questions, the requirement of a school report indicating the child's good, average and weak subjects and information regarding manual or domestic training received, and a medical report expressing the doctor's opinion as to the types of occupation unsuitable for the child—hence a widespread stimulation of interest in the principles and practice of vocational guidance, a subject in which there has been a large amount of research in America. The United States Office of Education, with the assistance of the National Occupational Conference, has prepared bibliographies of current literature in this field and recently published a "Guidance Bibliography" (Bulletin No. 37. Washington, D.C.: Supt. of Documents. 10 cents), an annotated list of 442 books, pamphlets and periodical references classified under the headings: elementary schools, secondary schools, colleges, adult and out-of-school youth, and techniques and procedures. Information as to careers is published monthly by the National Occupational Conference in an "Occupational Index".

#### The English Sprat Fishery

THE Ministry of Agriculture and Fisheries paper by Mr. J. Armitage Robertson on "The Sprat and the Sprat Fishery of England" (Fisheries Investigations. Series 2, 16, No. 2) deals with the economic importance of the sprat, the location of the fishery, behaviour and geographical distribution, life-history, age, sex-ratio and food. Even the health of the sprat is treated in a section devoted to 'parasites and disease', from which the sprat seems tolerably immune. The fishery is a localized inshore winter one, confined to the south coast and East Anglian seaboard, and is prosecuted in a variety of ways: by drift nets, stownets, trawls and seine nets. The possibility that the shoals are 'driven' shoreward by the incursion during the winter months into the Southern Bight of the North Sea of water of a higher salinity (greater than 35 per mille) than that to which they are accustomed is discussed, but Mr. Robertson is insufficiently convinced by the available data on this point and considers "that these hydrographical conditions and the circumstances of the fishery do not bear the relation of cause and effect, but are merely due to some general and common cause such as 'Winter Conditions' ". In spite of a Norwegian authority's

statement that English sprats are "tough, coarse and unpalatable", Mr. Robertson finds nothing to support this, and recommends as beneficial both to the fishery and to the country the development of the already existing small sprat-canning industry in Great Britain. English prices vary between 3s. and 16s. per cwt., whereas the average cost of imported canned brisling, mostly from Norway, is £6 13s. per cwt., so that the industry should have an ample working margin.

#### Radio Interference by Electro-Medical Apparatus

IN a recent article in NATURE (May 21, p. 941), attention was directed to the widespread interference caused to radio reception by various classes of electrical apparatus. One of the sources of such interference and also one of the most difficult to mitigate is a certain type of electro-medical apparatus used for diathermy treatment. With the view of securing an amelioration of conditions in this field, the Postmaster-General has asked the Minister of Health to direct the attention of local authorities to this matter. Accordingly a circular letter has been issued by the Ministry of Health to all local councils, including welfare and local education authorities (Circular 1695). With this circular was enclosed a memorandum prepared by the Radio Branch of the Post Office on the prevention of interference with radio reception from certain types of electro-medical apparatus. This memorandum has been reprinted from *The Hospital*, the official organ of the British Hospitals Association. It is to be noted that modern valve-rectified X-ray apparatus is not likely to cause interference; and the memorandum is primarily concerned with certain diathermy installations working on medium waves, short waves, and ultra-short waves which can only be prevented from causing interference by the addition of an electrical screen or Faraday cage capable of enclosing not only the apparatus but also the patient and the operator. Since no other effective method of prevention has yet been discovered, it seems desirable that, for new hospital buildings or extensions of existing hospitals or other new buildings in which these forms of apparatus are likely to be used, the inclusion of screened rooms should be considered. Attention is directed to the fact that the Radio Branch of the Post Office is prepared to advise on any problem arising and also on the prevention of interference from existing plant.

#### The Cheshunt Research Station

THE annual report for 1937 of the Experimental and Research Station at Turner's Hill, Cheshunt, Herts, announces a new auxiliary venture. It was recognized that the control of virus diseases of cucumbers and tomatoes could only be accomplished by the use of seed from disease-free plants. A Seed Growers' Association is therefore to be formed to carry on this commercial side of the Station's activity. A capital of £3,000 has been subscribed, and will enable the venture to start. Many experimental trials which have been prosecuted in previous years are continued to give conclusive results. Such

are the effect of restricted rooting upon early fruiting of the tomato, the use of electric light to hasten growth of cucumber seedlings, the use of soil heating for several crops, and the use of a surface rooting medium for tomatoes. Entomological investigations have included studies of rose thrips and onion thrips, and the use of a species of *Scolothrips* as a predatory control of red spider mite. Extensive mycological researches include the record, for the first time in Great Britain, of a leaf-spot of marguerite caused by the fungus *Ramularia bellunensis*. Physiological estimations of tomato seedlings have also been accomplished, and more general problems of soil nutrition have been studied.

#### Lighting and Speed of Seeing

A RECENT article (*Brit. Eng. Export J.*, September) describes practical advances that have recently taken place in lighting. An interesting experiment is described which shows a relation between illumination and the speed of vision. The apparatus used was a heavy pendulum on which a test object was exposed to view when swinging between two screens. The speed of movement of the object was directly proportional to its distance from the pivot. At high illuminations, the test object could be seen when it was placed at the lowest point of the pendulum. At intensities not exceeding two foot candles, it was only visible when it was placed at a distance not exceeding a quarter of the way down, when its speed is only a quarter of what it is at the lowest point. After an increase to five foot candles the speed of seeing was increased by about 60 per cent.

#### Model Chinese Junks

A COLLECTION of large-scale models of Chinese junks, which is said to be unique, has been presented to the nation by Sir Frederick Maze, inspector-general of Chinese customs, for exhibition in the Science Museum, South Kensington. The models, ten in number, were built in Hong-Kong or Shanghai by Chinese craftsmen, and are accurate replicas of these sailing craft in every detail, down to the shrines and household gods. They include examples with the magical eye on the prow. These boats, which are now giving place to steam in Chinese waters, and have also suffered many casualties during the present warfare, are of two main types, a northern and a southern. Except for details of rigging, they have not altered in principle over a prolonged period—at least a thousand years, and some authorities would hold for perhaps twice as long before that. Of these types, one has bluff bows and a flat bottom adapted for sailing in shallow waters. The other type has a sharp bow, with sheer lines and a deeper draught. Details of construction and rig in use among Chinese sailors at an early date are shown in these models, which did not appear in Western ships until a very much later period. Such, for example, are the water-tight compartment, the battened sail used in yacht racing, lee boards of the keel and rudder types, and multiple sheets for independent handling of the upper and lower parts of the sails.

#### Sternberg Astronomical Institute

ACCORDING to "Russia Today" Press Service, buildings for the Sternberg Astronomical Institute of Moscow will be commenced early next year in the vicinity of Butovo Station, one of the highest points on the outskirts of Moscow. The observatory, laboratory, mechanical workshops and blocks of flats to house the staff of the Institute will occupy a site of 14½ acres. The main part of the Institute's building will contain accommodation for research workers, lecture rooms, a library for 100,000 volumes and a storehouse for the 60,000 photographic negatives taken by the Observatory and by the Southern Astronomical Station in Tajikistan. Underground in the same block will be situated the time service with its astronomical clocks, and a gravimetric laboratory. A tower, to be erected over the main body of the building, is to be used for solar work. The removal of the Institute from Moscow is necessitated by the increasing vibration caused by traffic and the reflection of the city's electric lights in the sky, which interfere with astronomical observations.

#### Centenary of the Greek Archæological Society

CELEBRATION of the centenary of the Greek Archæological Society began at Athens on October 23. The proceedings were opened in the Parthenon by the King of Greece, president of the Society, who delivered an address of welcome to the delegates and representatives of Greek and foreign universities and learned societies. Great Britain was represented by Mr. William Miller, of the British Academy, Mr. R. D. Barnett, of the Society for Hellenic Studies, and Mr. Gerald Mackworth Young, who was present on behalf of the Society of Antiquaries of London and the British School of Archaeology at Athens. The programme of the celebration, it is reported in *The Times* of October 24, includes excursions to Delphi, Eleusis and Epidaurus, the conferring of academic honours on distinguished archæologists, the laying of wreaths on the Cenotaph and the statue of the late King Constantine, a former president of the Society, the performance of the *Electra* of Sophocles and *King Lear*, an official banquet given by the Government, and a number of receptions.

#### The Night Sky in November

THE moon is full on November 7 at 22·4<sup>h</sup> and new on November 22 at 0·1<sup>h</sup> U.T. On November 7, there will occur a total eclipse of the moon under favourable conditions—given fine weather—for observation in Great Britain. Contact of the umbra with the moon's limb at position angle 94° from the north point, measured towards the east, occurs at 20<sup>h</sup> 41<sup>m</sup>; total eclipse begins at 21<sup>h</sup> 45<sup>m</sup> and ends at 23<sup>h</sup> 8<sup>m</sup>; the moon leaves the umbra at 0<sup>h</sup> 12<sup>m</sup> November 8, the position angle of the last contact being 243°. Lunar conjunctions with the planets occur on November 1<sup>d</sup> 19<sup>h</sup> (Jupiter): 5<sup>d</sup> 18<sup>h</sup> (Saturn) 18<sup>d</sup> 18<sup>h</sup> (Mars): 23<sup>d</sup> 21<sup>h</sup> (Mercury) and 29<sup>d</sup> 8<sup>h</sup> (Jupiter). There is a conjunction of Mercury and Venus on November 8, but both planets set very shortly after the sun. As the sky darkens, Jupiter is