

### Jersey Meeting of the British Empire Naturalists' Association

THE decision of the council of the British Empire Naturalists' Association to hold a summer holiday meeting at Jersey in the latter half of June is an interesting tribute to the natural history interests of the Channel Islands, where so many Continental and North African plants reach the northern limit of their distribution, and certain reptiles and birds unknown in England may be studied. In its flora, Jersey holds most interest to the British naturalist for the very mild winters permitting up to forty species to flower in late December, thus producing a Continental rather than British flora. The most interesting species on the island not found in the rest of the British Isles are the Jersey bugloss; the Jersey toadflax, one of the rarest of European flowers blooming at the end of May; the Jersey star thistle; and the loose-flowered orchid. The region of St. Ouen's Bay is considered the richest botanically, for there are few woods on the island, though such rare flowers elsewhere in Britain as the wild daffodil flourish on the cliffs, maiden hair fern in certain rocks, wild wallflower on the walls of Mont Orgueil Castle, yellow horn poppy, golden samphire, sea-lavender and sea kale on the coast. *Scirpus americanus*, found at St. Ouen's Ponds, is a very rare rush of the Jersey flora, while the Jersey fern (*Gymnogramme leptophylla*, Des.), a North African species, is equally interesting.

FROM the point of view of marine zoology, Jersey offers invaluable opportunities to the visitor. Frequent storms have revealed the stumps of submerged oak and alder forests in St. Ouen's Bay, the Museum of the Société Jersiaise possessing a photograph of some five hundred stumps visible on one occasion. Of bird-life, the island is rich in sea-birds, and a young herring-gull ringed by the London Natural History Society at the colony at Point Grosnez on June 24, 1934, was recovered at St. Nazair (Loire Inf.), France, on November 1. The beautifully marked wall lizard is found on the island, though it does not occur in Britain except as an escaped pet. Similarly, the insect fauna is rich in Continental forms, particularly butterflies, seldom reaching England. Geologically, Jersey resembles France, though in parts it may be likened to South Ireland, Devon and Cornwall. The rocks are mostly granitic. Jersey has the most varied rocks of the Channel Islands, presenting a mixture of metamorphic rocks, conglomerates, and sandstones with syenites and quartzites, while shale and blown sand are also prevalent. Archaeologically, the island is noteworthy, and its cromlechs have caused wide interest, especially the large one at Mount Orgueil. The president of the British Empire Naturalists' Association is Mr. Douglas English. The arrangements of the Jersey meeting are in the hands of the honorary secretary of the Jersey branch of the Association, Mr. E. R. Casimir, Font Hill, Woodville Avenue, Jersey.

### Rationalisation in Industry and Technical Education

IN his presidential address to the Association of Technical Institutions at the annual general meeting

on February 22 and 23, Brig.-General Sir Harold Hartley discussed the question of how far the present trend of industrial development, and particularly the increasing size of industrial units, presents new problems in technical education. Following the rapid progress of both pure and applied science under which co-operative research has been initiated and the processes of the older industries subjected to scientific scrutiny, in addition to the development of entirely new industries, had come the beginnings of rationalisation. The tendency to increase the size of industrial units and to operate on the principles of mass production involves scientific research for the analysis and control of each process. While the disturbance produced by the War was a prime cause of the failure of these methods to raise the standard of living, misuse of opportunities afforded by research could intensify our difficulties. The modern method of production creates a new series of problems involving the co-operation of a team of specialists, and this team work is the characteristic feature of large-scale management. The smooth running of a large-scale unit depends on each of the components engaging intelligently in its task and performing this in proper co-ordination with the rest.

SIR HAROLD HARTLEY suggested that technical institutions can do something to assist those entering industry to understand their functions in relation to others, and in selecting individuals best suited for the various tasks. The extent to which it is possible to give the student a general picture of the industry which he is to enter, its organisation and management, and its relation to other industries requires careful consideration. The relation between the technical and commercial departments and the assistance which statistics afford to management are highly significant to-day, and Sir Harold Hartley urged greater emphasis on cost as opposed to efficiency in the discussion of processes and plant. Finally, he emphasised the importance of a dynamic conception of industry and of co-operation both inside an industry in isolating and solving a problem, and between education and research. The understanding between them must become closer and closer if we are to utilise fully the resources of Nature.

### The Droitwich Broadcasting Station

IN a paper read to the Institution of Electrical Engineers on April 11 by N. Ashbridge, H. Bishop and B. N. MacLarty, a description is given of the new radio broadcasting station at Droitwich in Worcestershire. The station contains two transmitters each performing a separate function. One transmitter works on a 'long' broadcasting wavelength in the band 1250-1875 metres and the other on a medium wave-length between 200 and 545 metres. The long-wave transmitter has replaced Daventry 5XX, which worked with a power of about 25 kilowatts. This station was the first broadcasting station in Europe to employ a power in excess of five kilowatts. The other transmitter replaces Daventry 5GB, which was first erected as an experimental transmitter, but afterwards gave the

regional programme service to the Midlands. The present aim of the British Broadcasting Corporation is to supply every potential listener with a service of two distinct programmes. The distribution scheme which is now approaching completion will make one programme available to 98 per cent of the population and the other programme available to 85 per cent. By virtue of the length of the wave on which it works, and its aerial power of 150 kilowatts, the new long-wave transmitter at Droitwich gives vastly greater possibilities of 'coverage' than any of the other transmitters in the country, all of which work on medium waves. The other Droitwich transmitter covers the densely populated districts in the Midlands. The Droitwich site was found to fulfil the requirements for a station of this type. The subsoil in the immediate neighbourhood is favourable to the propagation of radio waves. Short high-grade telephone circuits connect it with the nearest studio headquarters. It is suitable for building work, and there is plenty of space for the aerial system. Lastly there is a trustworthy and ample water supply.

#### Value of Criticism

PROF. ERWIN SCHRÖDINGER, in an article entitled "Science, Art and Play" (*Philosopher*, 13, No. 1), maintains that the present-day spirit which challenges all authority and allows nothing to be immune from criticism, manifests itself in the 'crisis' now existing in most of the sciences. Science, at any rate research work, together with art and play, provides an outlet for that surplus store of energy which men usually have to spare after satisfying their primary needs. It might be argued that science gives far greater practical benefits than art or play, or that the intellectual joy of the research worker is as nothing to the material value of the results obtained. But the advances of applied science, as exemplified in greater facilities for travel and communication, give not only material benefits but also pleasure for their own sake. Prof. Schrödinger admits that science can rarely give direct joy to the community, but what matters is that the greatest possible number of people should have the opportunity of approach to intellectual pleasures. It is not accidental that at the present moment the sciences are being forced to a complete reassessment of values, for the ideas forming the background of the individual sciences are connected with the ideas of the age, and the dominant spirit will accept nothing on authority. This should not be feared, for what is worth preserving preserves itself, and requires no protection.

#### The Citrus Industry in Jaffa

An article in the *Fruit, Flower and Vegetable Trades' Journal* of February 16 describes "The Jaffa Citrus Industry". Oranges were introduced to Jaffa in the tenth century; they delighted the eyes of the Crusaders and their opponents. An Egyptian devastated the town and the surrounding country in the fourteenth century, and the orange groves were not re-established until the eighteenth century. Palestine exported nearly 1½ million boxes of oranges

before the War; her export trade disappeared during the conflict, but now it has returned and increased. Jaffa is the chief exporter of grape fruit, and second only to Spain in export of oranges. Forty-five per cent of the exportable crop is at present controlled by Jews and the rest by Arabs, but when present plantings mature, the Jews will control 65 per cent. The development of overseas markets is difficult, owing to the imposition of tariffs, and to the fact that Palestine is a mandated territory and can demand no reciprocity of trade. The Government of Palestine has instituted an inspection service, has established a research station and has created a fund for propaganda. Difficulties of transport from Jaffa to the port have still to be overcome; production promises to be increased threefold by 1938. The industry is launching a large scheme of advertisement, in an attempt to cope with this increase in output, and already the consumption of Jaffa oranges in England has increased considerably since the scheme was initiated.

#### Land Utilisation Survey

THE fourth annual report, for 1934, of this Survey shows that great progress has been made. Of the field work, only about ten per cent of the total area of Great Britain has still to be done. The uncompleted areas are mainly in Sutherland, part of the Southern Uplands, the northern and eastern parts of the West Riding, central and southern Wales, and parts of Wiltshire and Cornwall. In preparation of the six-inch sheets for publication, which entails reduction to a one-inch scale, much progress has also been made. Twelve sheets have been published, seven others are in the press and twenty more have been reduced. Further progress has been delayed solely by lack of funds. For many of the sheets published or in process of publication grants, guarantees or advance orders have been obtained, and the Survey is anxious to obtain further help of this kind. The Survey is planning a series of handbooks to accompany the published sheets.

#### Cultivation of Tomatoes

THE imposition of duties on imported tomatoes has naturally stimulated the production of this fruit in Great Britain, although the industry had already assumed large proportions. The home production under glass is estimated at more than 1,140,000 cwt., but even so, this only accounts for less than one third of the total home consumption, imports for 1932 amounting to as much as 2,442,000 cwt. Very considerable knowledge with regard to tomato growing has been obtained at the Cheshunt Research Station, and at the invitation of the Ministry of Agriculture, the director, Dr. Bewley, has prepared a bulletin on the subject which provides growers with a wealth of valuable information (Bull. No. 77, Tomatoes: Cultivation, Diseases and Pests. H.M. Stationery Office. 1s. 6d. net). Soil treatment before planting, manuring, optimum soil and air temperature during growth are among the aspects of the subject discussed in detail, while recommendations as to the