

duties on vegetables, fruits, and flowers. One of the effects of this order will be to keep out luxury products, and will give gardeners an opportunity of capturing a market which has hitherto been beyond their reach. There is now to be a duty of eight shillings per cwt. on all foreign lettuce from Jan. 1 until April 30. It is easy to compute the exact cost of the electric installation required; and where electricity is cheap, much can be said in its favour.

#### International Industrial Agreements

In a general report on the economic aspects of international industrial agreements recently prepared for the Economic Committee of the League of Nations, it is concluded that international agreements constitute an important attempt to remedy certain disadvantages of the present economic evolution. They are not a panacea and do not apply to all products; they may mitigate but not abolish economic crises. Like other human institutions, they are liable to error and even abuse, but experience has shown that they quickly pay for any mistaken policy, and a false step may even imperil their existence. When of long duration, their interest definitely coincides with the general interest, for example, in stabilising at moderate prices, eliminating dumping, stabilisation of customs duties, and of employment, and in minimising the fall of wages in periods of depression. The advantages of lower costs to producers are secured in various ways, such as regular production, diminution and standardisation of stocks, elimination of unnecessary transport, economies and increased efficiency in research and other technical matters, patents, marketing, sales organisation. The advantages of greater equilibrium between production and consumption and of relative stability in prices are equally beneficial to producer and consumer. Agreements do not eliminate competition, but the limitations they impose on competition are beneficial, as avoiding waste or destruction of capital. The existence of international agreements did not create the present crisis; on the contrary, the seriousness of the crisis intensified the movement for such agreements to mitigate its consequences. They are accordingly considered to constitute a valuable guarantee of the economic and political stability of the nations.

#### North American Oyster Fisheries

MR. H. P. SHERWOOD who, during 1930, was sent by the English Ministry of Agriculture and Fisheries to investigate the American methods of oyster culture, in his paper "The Oyster Industry in North America: a Record of a Brief Tour of some of the Centres on the Atlantic and Pacific Coasts, and of a Summer in Canada" (*J. Conseil*, vol. 6, No. 3, Dec. 1931), gives an interesting account of the industry in North America and the various beds visited. He spent a summer in Canada, working on oyster investigations in Malpeque Bay, Prince Edward Island, and also visited most of the oyster-raising areas on both coasts of the United States. Recent figures put the annual yield of the oyster industry in North America at about 73,000 tons of food, valued at more than

14,000,000 dollars. The oysters belong to large and small companies and individual owners of oyster schooners, or oystermen, who fish in shallow reserved portions of the public beds. The natural beds of *Ostrea virginica* on the Atlantic coast at one time flourished from Maine to Mexico, but have greatly dwindled, and on the Pacific coast the industry is now practically confined to inlets in the State of Washington. Cultivation lies chiefly in providing in the summer clean shell culch on the beds for attachment of the larvæ, culling or separating and sorting oysters from clusters in the clutch, and planting spat and half-grown oysters, together with measures for destroying pests. There is a demand for a greatly increased supply of seed oysters in many of the oyster-growing areas, although natural falls may in some seasons be very prolific. A few years ago this stimulated renewed interest in the problem of raising spat artificially, but more recently research has been directed to extending the possibilities of securing good sets of natural spat and to destroying pests, rather than to developing hatchery methods.

#### The Gulf Stream

THE results of investigations on the behaviour of the Gulf Stream were communicated to a recent meeting of the American Geographical Union at Washington by Mr. P. E. Church. According to Science Service, Mr. Church discovered many irregularities in width and temperature but no clear seasonal fluctuations. The data were obtained by recording instruments installed on commercial vessels crossing the triangle of waters between Halifax, Bermuda, and the Georgian coast. Inshore water extends to about the hundred-fathom line, beyond which is a wide area of cool water, ending in a narrow band of cold water believed to be due to upwelling from the depths. The Gulf Stream lies beyond, and was found to be 50 miles wide off Cape Hatteras and not more than 70 miles wide south of Nova Scotia. Outside the Gulf Stream to the south-east lies a broad area of warm water reaching towards mid ocean. During the winter months, and occasionally at other seasons, the Gulf Stream flows as a double stream, with a tongue of cold water between, which may pinch off the northern stream and push the main stream considerably southward. Mr. Church does not explain this deviation, but doubts if wind action is the cause. South of Halifax the northern edge of the Gulf Stream averages a distance of 290 miles offshore but varies between 230 and 420 miles.

#### Science and the Empire

THE July number of *Discovery* is devoted, in view of the Ottawa Conference, to the subject of science and the Empire. Sir Stephen Tallents manages to give in a very few pages a vivid picture of the varied scientific activities which, on the confines of the Empire, become particularly associated with agriculture, the mainstay of dominions and colonies alike. The close contact maintained between scientific work at different centres is emphasised in this review and

illustrated by specific examples, and this practice is commended to the statesmen now gathered at Ottawa. The Right Hon. Lord Lugard explains the plan of the African Institute, with the financial support of the Rockefeller Foundation, to make a detailed study over a five-year period of the results of the impact of European civilisation upon the tribal system. Dr. H. V. Taylor, Commissioner of Horticulture to the Ministry of Agriculture, writes upon science and Empire fruit growing. The keynote of this article is that variation of climate, in the vast area covered by the Empire, prevents standardisation of methods, so that the grower is thrown into the hands of the research worker. Wool research in New Zealand and Empire air routes are other topics akin to the main theme which are also discussed.

#### Acquisitions of the Natural History Museum

A SERIES of microscope preparations showing all the early stages in the life history of the graptolite *Climacograptus* has been presented to the Department of Geology of the Natural History Museum by the Sedgwick Museum, Cambridge. The preparations were made by Mr. Ian Cox from material which he collected from rocks of Ordovician age in Akpatok Island, Ungava Bay, Northern Territory, Canada. Graptolites occur in the oldest fossiliferous rocks, and are organisms of unknown relationships, but generally supposed zoologically to resemble the living sea-firs, or sertularians—minute colonies of polyps encased in a horny skeleton. In the material from Akpatok Island, the original horny skeleton is preserved in a matrix of limestone, which can be dissolved and the skeleton extracted entire. The minutest structure and ornament of the early chambers, or thecae, are visible, and the order and manner of budding of new thecae can be clearly determined. Miss K. B. Macvicar has presented the extensive herbarium of her brother, Dr. Symers M. Macvicar, to the Department of Botany. Dr. Macvicar was the recognised British authority on Hepaticæ and was the author of the standard systematic account of them, "The Student's Handbook of British Hepatics". The herbarium is very rich in British and Continental species, and these are the more valuable because they are the basis of the descriptions and comparisons in the "Handbook". Dr. Macvicar was a medical man whose home was at Acharacle, Argyll, and in his travels in western Scotland accumulated an unrivalled representation of the flora, particularly of the less frequented parts of Argyll and Inverness. The herbarium contains about 18,000 specimens (that is, labels) and, as well as hepatics and flowering plants, contains mosses, seaweeds, and lichens. Mr. A. H. G. Alston, assistant keeper in the department, has just returned from western Greek Macedonia, where, in company with Mr. N. Y. Sandwith, of the Kew Herbarium, he spent six weeks. He collected about 1200 specimens, chiefly flowering plants. These are of interest because the area along the Albanian frontier has been visited previously only by a Czechoslovakian collector; moreover, the districts visited overlap to some extent those from which some plants were obtained by the department during the War.

#### Protection of the Fauna and Flora of Poland

IF one may judge by the size and quality of *Ochrona Przyrody* for 1931, the publication of the National Council for the Protection of Nature in Poland, a very vital interest is taken there in the preservation of natural amenities. The articles contain proposals for the formation of reserves for the primitive flora of the Dniester valley and elsewhere; but, perhaps because the position of some of the animals is more precarious, we turned to find out what measures were being discussed for their behoof. The opinion is held unanimously that the chase of the red deer of the Carpathians during the period of rut is harmful to the species and is responsible for the annual degeneration noticeable in the herds. But agreement is not reached as to the best means of meeting the difficulty. The majority hold as a distant ideal the desirability of suspending all hunting during the period of the rut, but since the custom is old-established and widespread, a gradual approach to the desirable end is suggested. An interesting paper by Wladyslaw Burzynski, the chief forester, discusses the position of the bear in the eastern Carpathians. The War was responsible for the slaughter of much of the breeding stock, so that even now the number probably does not exceed three hundred in an area of about 300,000 hectares. A third paper describes a visit to the workings and lodges of two colonies of beavers, one on the Szczara, the other on the Niemen.

#### Research and the Wheat Quota

SIR ALBERT HUMPHRIES, chairman of the National Institute of Agricultural Botany, in the course of his address to the annual meeting of the Institute's fellows at Cambridge on July 21 showed how agricultural research helps the farmer to make good use of the wheat quota. The quantity of wheat grown in Great Britain has been steadily diminishing and the proportion used for poultry has increased, so that in the past season home-grown wheat represented only some seven per cent of the national grist. The wheat quota is likely to raise this figure considerably, and the quality of English wheat for bread-making may come into its own again. The Cambridge Plant Breeding Institute has produced, and the National Institute of Agricultural Botany is now testing, a variety of which the quality is markedly superior even to Yeoman. Yielding capacity is, however, of first importance, and there are often differences of up to 20 per cent between varieties. The Institute in 1930-1931 tested, by methods which can detect much smaller differences, some hundred varieties, of which twenty are new ones not yet on the market. Sir Albert Humphries urged that facts of this sort show the Institute to be working directly for the improvement of the farmer's financial position.

#### Courtauld Institute of Biochemistry

THE Courtauld Institute of Biochemistry of the Middlesex Hospital Medical School was given by Mr. S. A. Courtauld because the services of this department to the Hospital had increased so greatly that it was impossible to house it in the Institute of