

be (a) that certain drugs must be considered as of primary importance and be cultivated irrespective of market conditions; (b) that with adequate encouragement a herb industry could be created that would exclude the importation of many foreign medicinal herbs; and (c) that, with the exception possibly of digitalis and male fern, cultivation is the only method by which this can be ensured.

There is much to be said for the patriotic attitude of the National Herb Federation and for the efforts it is making to establish a home industry on a sound basis.

PROF. H. F. E. JUNGENSEN.

BY the death of Prof. Jungersen, Copenhagen has lost an outstanding citizen—both physically and mentally. Of a commanding figure and fine presence, he was a marked man at scientific gatherings at home and abroad, whilst his genial and courteous bearing, as well as his knowledge of English, made him especially welcome on this side of the North Sea.

Born in 1854, at Dejbjerg, in Jutland, son of Dean Jungersen, Prof. Jungersen received his early education at Odense, thence proceeding to the University of Copenhagen, where he graduated as M.Sc. in 1877, Ph.D. in 1889, and afterwards D.Sc. Throughout his career he was deeply interested in the fauna of Greenland, and he utilised his experiences in drawing up (1886, 1898, and 1904) accounts of the Danish expeditions. Though not a voluminous author, his researches on the Alcyonaria, Antipatharia, and Madreporaria of Greenland and the northern regions are important, and show scrupulous care in references to the literature as well as the synonymy of the subject. His memoir on the structure and evolution of *Pennatula phosphorea* in the *Zeitschrift f. wiss. Zool.* is also a noteworthy contribution; and still more his fascicle on the Pennatulidæ brought home by the *Ingolf* expedition, that of the *Diana* in Iceland and the Farøe Islands, the Norwegian expeditions, and the productive voyages of Dr. Joh. Schmidt in the *Thor*. His wide grasp of the subject and his sound judgment are conspicuous in this careful memoir, which is finely illustrated, and it is of special importance from the extensive sea-territory it comprehended, viz. the polar sea between Europe and Iceland, the sea to the west of Greenland, the northern part of the Atlantic down to 55° lat. N., and to the meridian off Cape Farewell. Another interesting contribution was that on the development of the sexual organs in the Teleosteans, and others on Ichthyotomy.

Prof. Jungersen visited this country several times, and on the occasion of the meeting of the British Association in Dundee in September, 1912, the University of St. Andrews conferred on him the honorary degree of LL.D. He was also a fellow of the Danish Royal Academy, president of the Natural History Society of Copenhagen, professor of

zoology and director of the Zoological Museum in the University of Copenhagen, and a member of other Danish and foreign societies. His latest work was connected with the publication of the results of the *Ingolf* expedition, and his death at the comparatively early age of sixty-three will be regretted by all interested in this task, as well as for the loss to zoology in general.

In conclusion, if one observation of Prof. Jungersen is more important than another, it is his pointing out the difference between the deep-sea faunas north and south of the submarine ridges between Greenland, Iceland, the Farøes, and the Hebrides, a result due to the Danish *Ingolf* expedition. W. C. M.

SIR ARMAND RUFFER, C.M.G.

THE tragic death of Sir Marc Armand Ruffer will awaken, in the minds of many of his contemporaries, memories of the early struggles for the establishment of an Institute of Preventive Medicine in this country. It was largely due to Sir Armand Ruffer's efforts that the British Institute of Preventive Medicine, which has now grown into the Lister Institute, was founded and started in a small way in Great Russell Street in 1893. As its first director, he gave all his energy to its proper establishment on the lines of the Pasteur Institute, where he had previously worked with Pasteur and Metchnikoff, both of whom valued him very highly. In carrying out the first important work done at the new institute, namely, the production of diphtheria antitoxin, he contracted diphtheria and nearly lost his life. His health was so shattered by this very severe attack that he had eventually to relinquish the post of director, and went for a change to Egypt. After a rest he decided to settle in Egypt, and became professor of pathology in the Cairo Medical School. He gathered men around him and reorganised this post, which he gave up in about two years upon being offered the important position of president of the Sanitary, Maritime, and Quarantine Council of Egypt. His knowledge of both the sciences and languages concerned, his tact, and his firmness enabled him to fill this very difficult international post with great distinction up to the time of his death. He again reorganised the whole work of the department; he did himself, and superintended others in doing, a great deal of research work connected with the various diseases which the council had to guard against; he built special pilgrim stations, which are models of what such things should be, at Tor and elsewhere on the pilgrim routes, and with infinite skill managed to bring the difficult and mixed groups of pilgrims under the conditions of proper quarantine, thereby keeping deadly diseases not only out of Egypt, but also out of Europe. At the outbreak of war he became head of the Red Cross in Egypt, and he met his death in returning from Greece, whither he had gone in order to help and advance the Red Cross and sanitary organisation there.

Most of Sir Armand Ruffer's active life was spent in reorganising, making efficient, and putting on a proper scientific basis the various bodies mentioned above, in which he was the ruling spirit; but in addition to this he carried out researches on, and extending over, a number of subjects. As a pupil of Metchnikoff, it was fitting that his earliest research work should have been on phagocytosis, on which he published, in 1890, a paper which is still valuable. He then turned his attention to the still baffling subject of cancer and set himself to try to solve the vexed question of the various cell-inclusions found in the lesions of this disease, which he considered to be of parasitic origin. As a member of the Indian Plague Commission, he did work on plague which was of great use to him later in his administrative and preventive work in Egypt. Besides the bacteriological and serological research, in connection with the quarantine work, which was done in his laboratory, and of which a good deal was new, he published several papers on the pathological lesions found in mummies, of considerable importance with regard to the history and distribution of diseases; and he collected a large quantity of material on this subject which is not yet published.

As a colleague he was ideal, ever ready to help and to advise, and never thinking of himself; and he was one who had the truest, kindest, and most appreciative affection for his many friends.

H. G. P.

NOTES.

THE long-deferred Arctic expedition of Mr. Roald Amundsen seems at last to be taking definite shape. This is the expedition which Amundsen abandoned in 1910, when he sailed instead for the Antarctic on his successful conquest of the South Pole. The plans have been modified in detail, and no longer include the use of Nansen's *Fram*, which has been condemned, but the general scheme probably remains the same. Amundsen's original intention was to enter the Arctic Ocean by Bering Strait, to traverse the unknown Beaufort Sea and force his vessel into the polar pack. He intended to allow his vessel to be frozen in and to drift with the ice across the polar basin, eventually reaching the open sea, in four or five years, between Greenland and Spitsbergen. In this respect the expedition is to be on the lines of Nansen's successful drift in the *Fram*, but by entering the ice further east than Nansen, Amundsen hopes to drift across the middle of the polar basin through quite unknown regions. Research in meteorology, oceanography, and biology will be pursued all the time, and the expedition will be accompanied by several aeroplanes for reconnaissance work. Amundsen has recently returned to Norway from America, where he has been arranging about these machines and receiving instruction in flying. It is announced that the Norwegian Storting has voted 11,000*l.* towards the cost of the expedition. In 1914 a grant of 4000*l.* was promised by the National Geographic Society of Washington.

THE recent debate in the House of Commons on the Air Board vote has done much to explain the precise functions of the Board, and its relation to the aeronautical industry. Major Baird pointed out to those who were dissatisfied with the results of the work of

the Board that it was necessary to proceed cautiously and to avoid rash experiments which might seriously affect the supply of machines to meet the demand at the front. In the debate which followed Major Baird's statement the usual criticisms were levelled at the Government machines which are being supplied to the Services, and it was asked whether more efficient machines could not be obtained in large numbers. The prevailing impression as to the inefficiency of these Government machines is entirely unfounded, and a statement made to the effect that the Air Board will consider the Royal Aircraft Factory and private firms on equal terms as regards the development of new types of machine should satisfy anyone that a firm claiming to produce a better machine than the official type will have a fair hearing before the Board. The formation of a new committee, under Lord Northcliffe, to investigate the possibility of using surplus machines and pilots for commercial purposes after the war should produce some interesting results. It is certainly high time that the possible uses of aircraft when peace returns should be seriously considered. At the conclusion of the war there will be many aircraft factories possessing expensive plant for the production of machines, and this plant may easily be wasted when the demand for military and naval machines becomes smaller. The work of the Air Board has already proved of great value in centralising and controlling the production of war machines, and there seems no reason why equally good work should not be done in peace time to advance the commercial side of aeronautics.

UNDER the title of "Science in Russia" a new reference-book will be published in the present year, composed of two parts: (a) an index of all scientific institutions, societies, and higher schools in Russia; (b) an index of all persons working in these institutions and of private scientific workers. It will thus include in the first part the particulars hitherto supplied (but very incompletely as to Russia) by the "Minerva Jahrbuch"; while the second part will be similar to "Who's Who in Science," but will give, at least for 1916, not so much information about each individual. The difficult task of collecting the necessary material is already well in hand. The undertaking has been brought, through the Russian newspapers, to the knowledge of all those interested, and special forms are being supplied to the institutions and societies, many of which have already been returned with the necessary particulars. The work has been taken in hand by the Academy of Sciences of Petrograd and the scientific periodical *Priroda* (Nature) of Moscow. "Science in Russia" for 1916 will be edited by Prof. V. N. Benešević, and published jointly by the Academy and the journal *Priroda* in the latter part of this year. It will be issued annually. This publication will supply a long-felt need, as up to the present the only work of reference containing any information about the scientific institutions of Russia as a whole has been "Minerva." "Science in Russia" will help towards an exact evaluation of Russian scientific forces and activity, and will constitute an important step towards the promotion of closer scientific relations with the Allied countries.

IN London, and probably at many other places in England, April was colder than any corresponding month for the last sixty years or more. Dr. H. R. Mill contributed some details of the exceptional cold weather to the *Times* of May 3. The mean temperature at Camden Square is given as 43.1°, or 5° below the average; the mean maximum was 52.6°, and the mean minimum, 34.6°. The arithmetical mean of