

State Help for Gliding

REPLYING to a question in the House of Commons on June 27, Sir Philip Sassoon, Under-Secretary of State for Air, stated that the Government has reached the conclusion that some measure of financial assistance to the gliding movement from the Air Votes is justified. This will probably take the form of assistance towards the formation and maintenance of a properly organised central gliding school, which is regarded as essential to the sound development of gliding, coupled with a small capitation grant to approved clubs in respect of each certificate taken out by their members. Details are not yet known, but will be worked out in conjunction with the various interests concerned. The proposal is that a sum of not more than £5,000 annually, for a five-year period in the first instance, shall be granted. Sir Philip expressed the hope that now that official recognition is to be accorded to the national importance of gliding, generous financial support will also be forthcoming from private sources in order to ensure the success of the movement.

Zeppelin LZ-129

A NEW Zeppelin airship, LZ-129, is now nearing completion in Germany (Science Service, June 6), and if satisfactory will be put into service as a sister ship to the *Graf Zeppelin*, now operating for the sixth season between Europe and Brazil. The east-bound crossing of the new ship is expected to take less than two days, and the return against head winds a little less than three days. The calculated range without refuelling is 8,000 miles. Although only slightly longer than the American *Macon*, at present the largest airship extant, LZ-129 will be considerably larger, with a gas capacity of 7,070,000 cubic feet as compared with 6,500,000 of the *Macon*. On her trial flights this summer, she will be inflated with hydrogen gas. It is reported that the use of helium gas is being considered for normal passenger flights. The Diesel engines, totalling 4,400 horsepower, will be in gondolas attached outside the hull, with ladders permitting access to other parts of the ship as in previous Zeppelin designs. German aeronautical engineers have never accepted the recent American procedure of placing the engine compartments inside the 'hull' or skin. The accommodation includes two promenade decks, state-rooms for fifty passengers, running water and baths, and a special smoking room. Besides these appointments are quarters for a crew of 35 and space for a mail and freight load of ten tons.

International Broadcasting Union

THE issue of *World Radio* of June 29 contains an account of the London meeting of the Union Internationale de Radiodiffusion, which was concluded on June 20, and also the report of the Council of the Union. The meeting was attended by seventy-three delegates, including representatives of the broadcasting organisations of twenty European countries, of the two great American chains of stations and of the Cuban broadcasting organisation; and, in

addition, delegates from thirteen European State administrations. The general assembly and business meetings were held at the Grosvenor House Hotel, but visits were arranged to such places of interest as the International Trunk Exchange of the G.P.O., to Broadcasting House and to two stations of the B.B.C. The report of the Council of the Union concerns the European wave-length situation, and such subjects as international programmes and their future arrangement, and the legal aspects of authors' rights. The impression of the Council is that, since the introduction of the Lucerne plan, the general situation in regard to broadcasting on the long wave-lengths has been appreciably improved by the partial application of certain recommendations made at Geneva in February. The situation is complicated by the presence in the long-wave band of the stations Luxembourg and Madona, which were not given long wave-lengths by the Lucerne conference. No solution of this difficulty can be found at present, but recommendations were made to the Governments and broadcasting organisations concerned to re-examine the situation arising therefrom with the view of reaching an arrangement satisfactory to all the interested services.

THE report also states that 409 programmes of special interest or high artistic value were offered by members of the Union to their colleague organisations during 1933-34. Certain of these programmes, such as the relays of the bells of Bethlehem and the Byrd Antarctic Expedition, were accepted by members in various continents. The Union has decided to repeat, in some new form yet to be determined, the successful Christmas programme of 1933, wherein several European broadcasters contributed, by means of specially prepared records, seasonable expressions of goodwill from their respective countries. At the sitting of the new Council which terminated the London meetings, Vice-Admiral Sir Charles Carpendale, of the British Broadcasting Corporation, was elected president of the Union for the tenth successive time. The next meetings of the Council of the Union will be held in Switzerland in February 1935, while the next annual general assembly will be in Poland.

Drinking Water and the Drought

DETAILS have been circulated of an emergency organisation which Imperial Chemical Industries, Ltd., Millbank, S.W.1, with the approval of the Ministry of Health, has set up to assist local authorities which may be experiencing difficulties with their supplies of drinking water. In many instances, owing to a shortage of the regular supply, water has to be obtained from other sources, the purity of which may be doubtful and below the usual standard. Such emergency supplies may, however, be rendered quite safe for domestic purposes provided they are first adequately treated and sterilised. Treatment with chlorine in some form is that generally employed, as it is efficient and comparatively simple in application, the four agents generally used being liquid chlorine, 'chloros', chloramine and

ordinary chloride of lime. Imperial Chemical Industries, Ltd., has accordingly posted a staff of experts trained in water sterilisation at its divisional offices in London, Newcastle, Manchester, Oldbury and Bristol, whose services will be at the disposal of any local authority desiring them for advice and assistance, which will be given free. Once the proper dosage of the particular chemical agent selected has been determined, together with the best method of applying the process, the routine application is comparatively simple.

Liverpool and the Atlantic Ferry

A SUMMER meeting of the Institution of Mechanical Engineers in the Liverpool district would not be complete without a paper on ships and their machinery, and during the meeting on June 26-29, Mr. P. Austin, following in the footsteps of the late Mr. A. J. Magennis, contributed a paper on Liverpool and the Atlantic Ferry. Liverpool shipowners have played prominent parts in the long struggle for supremacy on the North Atlantic between such famous lines as the Cunard, White Star, Collins, Inman and others for a century or so. Beginning with the Black Ball line of sailing packets which connected Liverpool and New York in 1816, Mr. Austin traced the development of trans-Atlantic travel down to the present time, mentioning many once famous ships and recalling many great achievements; and in three tables he gave figures of the growth in size, power and speed of typical ships. In concluding his review, Mr. Austin asked, "Is the Liverpool airport to be one of the terminal ports of the Atlantic Ferry of the future?" While not holding that a trans-Atlantic air service is impossible, Mr. Austin has doubts as to its regularity and dependability, due to the vagaries of North Atlantic weather; also there are doubts as to whether such a service ever would be a financial success. As regards the immediate future of the 'Atlantic ferry', the struggle is keener than ever before and the British reply to American, French, German and Italian competition is *S.S. No. 534*.

The National Maritime Museum

IN the House of Commons on June 29, Mr. W. Ormsby-Gore, First Commissioner of Works, moved the second reading of the bill for the setting up of a National Maritime Museum in the buildings recently occupied by the Greenwich Hospital School. The cost of adapting the vacant school buildings is estimated at £29,000 and Sir James Caird has generously offered to defray this sum. Sir James has already given large sums towards the restoration of *H.M.S.S. Victory* and *Implacable* and presented the Museum with the Macpherson Collection of Naval Prints. There is nowhere, said Mr. Ormsby-Gore, where one can study the history of our maritime adventure and development, and no attempt has yet been made to illustrate conveniently for the general public the immense field of British maritime endeavour, historical, technical, geographical and commercial, including not only the exploits of the

Royal Navy but also of the mercantile marine. A Board of Trustees with the Earl Stanhope as chairman has been appointed and the post of director has been offered to Prof. G. A. R. Callender, of the Royal Naval College, Greenwich, whose enthusiasm and scholarship in all matters appertaining to naval history are well known.

Recent Advances in Physics

THE Manchester and District Local Section of the Institute of Physics holds each year a summer course of lectures, the primary aim of which is to provide physicists in industry with convenient summaries of recent work in various aspects (both pure and applied) of physical research. This year the lectures were held during June in the Physics Department of the University of Manchester. On June 11, Mr. J. D. Bernal (Cambridge) discussed the properties of "Heavy Hydrogen" and indicated some of its possible chemical uses. Prof. E. N. da C. Andrade (University College, London) dealt with the subject of "Viscosity" on June 13. After considering the relation between temperature and viscosity and its representation by a formula, he discussed a theoretical justification for the use of a formula he has developed and finally dealt with some methods of measurement of viscosities. A comprehensive survey of "Units of Matter" was given by Dr. J. M. Nuttall (University of Manchester) on June 25; he discussed the properties of the proton, electron, anti-proton, positive electron, neutron and neutrino, and gave a summary of the experimental evidence supporting the new ideas on atomic structure. On June 27 short communications on "Alloys" were given by Prof. W. L. Bragg, Dr. A. J. Bradley (University of Manchester) and Dr. C. Sykes (Metropolitan-Vickers Electric Co., Ltd.). This is the fourth occasion on which such a course has been held. Last year the meetings were devoted to accounts of the application of physics to particular industries. On this occasion the original plan was adhered to, summaries of recent work in pure science being presented for the convenience of industrial research workers who do not find it easy to follow the many original papers. There has been a gratifying response to the attempt to organise these meetings, and lively discussions have followed most of the papers.

Celtic Earthworks on Salisbury Plain

ARCHÆOLOGISTS are indebted to the Ordnance Survey for further service of no little value in the form of a map of Salisbury Plain, based on the Ordnance Survey map, 1:25,000, and showing the Celtic fields and linear earthworks, which is now in course of preparation. The map will be issued in a series of six sections, of which the first, "Old Sarum" (Ordnance Survey, Southampton, 2s. 3d. net), is now ready. The archæological features of the Ordnance Survey map have been taken as a basis, and to these have been added material from photographs of the plain taken by the Royal Air Force in the course of routine duties and from data recorded by members of the staff of the Survey. Dr. J. F. S. Stone, who has