party are Frank M. Setzler, head curator, Department of Anthropology; Dr. David H. Johnson, associate curator, Division of Mammals; Herbert G. Deignan, associate curator, Division of Birds; and Dr. Robert R. Miller, associate curator, Division of Fishes, all of the Smithsonian Institution; and Harrison Howell Walker, National Geographic staff writer-photographer with several years of Australian experience. A similar group of Australian scientific workers will take part in the expedition.

Fuel Systems for the Aero-Gas Turbine

Dr. E. A. Watson and his colleagues were associated with Air Commodore Whittle in the early development of the aero-gas turbine. A paper presented before the Institution of Mechanical Engineers on December 5 gives an account of the results of their researches into fuel systems for such turbines. In the first part of the paper, Dr. Watson deals with the methods used for ensuring that the correct quantity of fuel is supplied to the engine under all conditions of thrust and altitude. The desirable characteristics of fuel systems from this point of view are deduced in a logical way, commencing with a typical heat input–engine speed curve at given inlet pressure and temperature, which is then modified to take into account variation of inlet conditions. It is then shown that neither an approximately isochronous governor nor a constant-stroke fuel pump driven directly by the engine possesses the required characteristics. The remaining alternative is to define the fuel flow directly by the pilot's control, with a compensating device for attitude variation. The remainder of this part of the paper is devoted to a discussion of the methods employed to achieve this, illustrated by descriptions of the various devices which have been used.

In the second part of the paper, the author turns his attention to the atomization of the fuel in the burners, and gives an account of some very ingenious methods which have been developed by various investigators to determine particle size and distribution. Illustrations are given of some atomizers which have been used. The paper should be of general interest to all who have followed the development of the gas turbine from its early stages, and the second part of particular interest to those concerned with the combustion of liquid fuels.

The Electronic Organ

So far as can be ascertained, there is only one type of electronic organ, that is one operating from purely electric means (see *Nature*, **145**, 170 (1940)) and so obviating pipes, being developed and manufactured in Great Britain, namely, the Electrone of the John Compton Organ Co., Ltd. The fact that it is produced by a long-established pipe-organ company means that it is properly 'voiced' by experienced craftsmen, without which it might be feared that traditional organ-tone might be lost. The model now available has two manuals and pedals, and a good array of stops and couplers. It was described by its inventor and designer, Mr. L. E. A. Bourne, and fully demonstrated by Mr. J. I. Taylor at a meeting of the Institution of Electronics held at the Royal Society of Arts on January 26. The post-war model is a great improvement over that produced in small quantities before the War, and can now easily take a place with regular pipe-organs of three times the price and greatly diminished maintenance. The improvement is largely due to a re-design of the electrostatic runners, using formants in many of the tracks instead of the previous all-sine-wave tracks, and more carefully selected loudspeakers. There are twelve unit-generators, all equal but driven by one belt, coupling pulleys of diameters inversely proportional to the equal-tempered ratios. Harmonics up to the thirtieth are used at present, but experiments are being made to go much higher when larger instruments are constructed, that is, larger in the sense of diversity of registration and effects, not volume, since this merely means using more amplifiers and suitably disposed loudspeakers.

Intensive Vegetable Cultivation

The increased demand for fresh vegetables has stimulated the grower's interest in new or improved methods of intensive cultivation. There remains, however, the difficulty of providing him with the latest information in an accessible form, and three illustrated bulletins issued by the Ministry of Agriculture (London: H.M. Stationery Office) on different aspects of the subject will do much to meet this need. "Irrigation" (Bull. No. 138. 1*s*. 6*d*. net) is entirely new. In it natural water supplies of all types are discussed, and the various methods of augmenting them by means of spray or soil irrigation described. Such artificial systems inevitably entail heavy expenditure, but it is considered that in some circumstances the results may fully justify it. "Crop Production in Frames and Cloches" (Bull. No. 65. 2*s*. 6*d*. net) has been completely rewritten. It provides a wealth of practical information, though stressing the fact that a thorough understanding of soils, varieties, ventilation, etc., is needed before success in this specialized line can be expected. "Practical Soil Sterilization" (Bull. No. 22. 1*s*. 3*d*. net) appears in a revised form. Large-scale methods employing both steam and chemicals are described for use in glasshouses, but instructions for dealing with small quantities of soil needed for propagation purposes or growing plants in pots are also included.

Annular Eclipse of the Sun on May 8–9

The National Research Council of Japan has arranged a programme of observations of the ionosphere during the annular eclipse of May 9 next, the central line of which passes across a small island north-west of Hokkaido. One of the objects of the programme is to obtain further evidence on the speed of particles proceeding from the sun to the earth. The exact times of contacts are to be recorded in connexion with a large-scale programme of geophysical observations.

National Foundation for Scientific Research, Brussels

The nineteenth annual report of the National Foundation for Scientific Research, Brussels, covering the year 1945–46, includes the reports of the ten scientific commissions together with details of grants made, of distinctions obtained during the academic year, and particulars of researches in progress during 1946–47. A list of publications during the year is appended under authors, together with a classified list of authors according to the scientific commission with which their work is associated. The Commission for Mathematics and Astronomy reports on a study of irregular algebraic surfaces and on correspondences between two algebraic surfaces. Prof. M. A. Picard reports on behalf of the Commission for Physical Chemistry, Electro-chemistry and Radioactivity on