marized in the Engineering Supplement of the London *Times*.

It is said that owing to the numerous changes and development in the design and construction of aircraft an increasing number of special problems constantly presented themselves for investigation, and these have closely occupied the attention of the staffs engaged in experimental work at both the National Physical Laboratory and the Royal Aircraft Factory. In addition to aerodynamical research, much attention has been given to questions relating to engines, materials of construction, strength of construction and design, instruments and accessories, as well as to methods of attack of aircraft from aircraft and other matters.

In the new 7 ft. air channel at the National Physical Laboratory an air speed of 85 ft. per second can be reached with an expenditure of 160 h.p. It is doubtful whether further increase in size of channel or speed of air current would advance existing knowledge to an extent sufficient to outweigh the greatly increased cost and other disadvantages involved. Should it prove necessary to conduct experiments on a larger scale and at higher speeds, it would appear necessary to employ a method in which the model is moved through the air. This procedure presents various difficulties, and the securing of even moderately accurate data in this manner is at the best extremely laborious. Probably the least troublesome way of applying this method is by installing measuring apparatus on the aeroplane itself, and it seems probable that only in this way can an accurate comparison be obtained between model and full-scale conditions.

Improved methods of supporting the models under test have been devised for use in special cases. The effect on the measured resistance of the method of holding the model is often surprisingly large, and without the necessary care and experience in avoiding effects due to interference with the air flow very large errors may result. In general the difficulty is greatest in measurements on forms of small head resistance—*e. g.*, aeroplane bodies and airship envelopes. Probably little reliance can be placed on the absolute values obtained in earlier measurements on airship models of stream line shape, which were made to determine the form of least resistance, and were in the main comparative. With the new methods of support the possible error has been greatly reduced, and when full-scale values have been determined with accuracy the prediction of full-scale resistance from the models will be established on a satisfactory basis.

At the Royal Aircraft Factory the measurement of the resistance of aeroplanes in flight has been continued with the object of confirming the model experiments, and an instrument for measuring the resistance directly has been developed. The distribution of pressure over the wing of an aeroplane in flight has been measured, and further experiments on these lines are in progress. Experiments and also much theoretical work have been carried out on the longitudinal and lateral stability of aeroplanes in flight. Measurements have also been made of the disturbance of the air behind a propeller, to obtain data required in the design of new machines.

SCIENTIFIC NOTES AND NEWS

President Raymond A. Pearson, of the Iowa State College, and Clarence Ousley, of the Texas State College, have been appointed to be assistant secretaries of agriculture.

Dr. Ray L. Wilbur, president of Stanford University and formerly professor of medicine, has been placed in charge of the conservation department of the Food Administration.

The Women's Council of Defense announces the following advisory committees: *Food Utilization.*—Professor R. H. Chittenden, Professor Graham Lusk, Professor E. V. McCollum, Professor L. B. Mendel, Dr. C. L. Alsburg, Dr. C. F. Langworthy, Professor Vernon Kellogg, Dr. A. E. Taylor and President Ray L. Wilbur. *Public Health.*—Professor W. H. Welch, chairman, Dr. L. P. Ayer, Dr. Hermann M. Biggs, Dr. D. L. Edsall, Dr. Cary T. Grayson, Dr. A. W. Hewlett, Dr. A. C. Janeway, Dr. F. G. Novy, Dr. R. M. Pearce and Professor H. G. Wells.

Dr. Harriet L. Hartley has been appointed chief of the division of child hygiene,

of the Philadelphia department of health, succeeding the late Dr. Henry H. Doan.

DR. J. B. CLELAND, of the Sydney department of public health, has been elected president of the Royal Society of New South Wales.

MR. ALAN A. CAMPBELL SWINTON has been elected chairman of the council of the Royal Society of Arts, London.

WE learn from *Nature* that early in July Mr. Erik Andersson, of Uppsala, again led to Spitsbergen a geological expedition, which included Messrs. Adam Reuterskiöld, Sven Ydén and Karl Samuelsson. The main object was to continue the investigation of the Trias and to collect saurians and fishes. The occurrence of phosphorite at Cape Thordsen was to be investigated, as well as the extent of the coal beds at Pyramid Hill and Bünsowland. Investigations in the Devonian rocks are to be continued and their vertebrate fossils collected. A large expedition of miners and mining engineers also left Sweden about midsummer to exploit the coal measures of Spitsbergen, and was accompanied by Dr. Anteus as geologist.

THE Committee of the Privy Council for Scientific and Industrial Research has sanctioned the appointment of a committee to inquire into the types of breathing apparatus used in coal mines, and by experiment to determine the advantages, limitations and defects of the several types of apparatus, what improvements in them are possible, whether it is advisable that the types used in mines should be standardized, and to collect evidence bearing on these points. The members of the committee are: Mr. W. Walker, acting chief inspector of mines under the Home Office (chairman), Dr. J. S. Haldane and Dr. H. Briggs.

DR. G. CARL HUBER, professor of anatomy in the University of Michigan, recently delivered an address on "Early Stages in Mammalian Development" before the faculty and students of the graduate summer quarter in medicine of the University of Illinois.

Two courses of twelve lectures each on "The Designing and Computing of Telescope Systems" are being delivered at the Imperial College of Science, South Kensington, by Professor A. E. Conrady during this month and September. The lectures are given in connection with the newly formed department of technical optics under the direction of Professor F. J. Cheshire.

THE death is announced of M. Eduard Sarasin, of Geneva, editor of the *Archives des sciences physiques et naturelles*, and the author of numerous researches in physicial science.

BY an agreement between the executors of the estate of the late James Buchanan Brady and his heirs, the major part of his fortune, estimated at $3,000,000, becomes immediately available for the New York Hospital. This argeement enables the trustees and executors to carry out the testator's plans for the establishment of the James Buchanan Brady Foundation of Urology. Eventually a building will be erected for the foundation to cost about half a million dollars, which will include departments for investigation along chemical, bacteriological and pathological lines. The plans for the foundation are in the hands of Dr. Oswald S. Lowsley, who was named by Mr. Brady as director.

AT the annual general meeting of the Medico-Legal Society of London, when the President, Sir Samuel Evans, was in the chair, a recommendation of the council that aliens of enemy nationality should cease to be either honorary or ordinary members of the society, was unanimously approved.

THE British Museums Association proposes to hold a conference in October to discuss, among other subjects, local war museums and the Board of Education and museums.

PLANS for the one hundred and fifteenth meeting of the American Institute of Mining Engineers which include an inspection of the coal resources of Illinois, the zinc and other mining operations of Missouri, and the oil fields of Oklahoma have been announced. The meeting will be held during the week of October 8 to 13. Methods will be discussed for conserving the present supply and increasing

the output of the country's minerals which will prove of value in winning the war. The American Institute of Mining Engineers now numbers more than 6,000 members in every part of the country and in many parts of the world and representatives will be present of all the principal American mining centers. The program calls for several days' sessions in and around St. Louis and an inspection tour to the rich mineral Joplin-Miami district and the oil fields of Tulsa, Oklahoma. The engineers will be guests of the St. Louis section of the institute, the chairmen of committees including H. A. Buehler, state geologist of Missouri; F. W. De Wolf, Illinois, past president of the Association of State Geologists; James E. Caselton, St. Louis; A. H. Wheeler, St. Louis; E. F. Goltra, St. Louis. Philip N. Moore, of St. Louis, is president of the American Institute of Mining Engineers.

The Société de Chimie Industrielle has been founded in Paris to promote the science of chemistry as applied to industry. We learn from a statement in *Nature* that local provincial branches will be formed which, while being self-governing, will keep in touch with the parent society. The society will institute research work with the view of assisting manufacturers and agriculturists. An institute and library are in contemplation which will contain a complete collection of French and foreign periodicals devoted to industrial chemistry, and the society hopes to arrange for meetings, exhibitions, etc., to stimulate activity. A review—the first number of which is expected to be published shortly—will keep manufacturers posted in the latest developments at home and abroad, describe inventions and processes, and, generally, fill a want that has been long felt in France. The first council of the society contains many names prominent in the scientific and industrial world.

The War Council of the American Red Cross has established a Bureau of Sanitary Service under the direction of Dr. W. H. Frost. An appropriation of $800,000 has been made for the use of the bureau. This step has been taken in order to meet the new conditions which will arise as a consequence of bringing together so many men as will be mobilized throughout the country. The Bureau of Sanitary Service will supervise and aid in such operations as will tend to make health conditions about the camps as nearly ideal as possible. Increased forces will be provided for milk inspection, war will be made on malaria-carrying mosquitoes, and a radius of from fifteen to sixty square miles outside of the camps will be policed for the protection of the health of the men. Sanitary units will be furnished to the areas upon the request of the civil authorities.

The council of the British Medical Association has reported that the only possible method of placing the health administration of the country on a sound basis was by the creation of a Ministry of Health. Their recommendations are as follows:

> That a ministry of health should be created to take over from existing government departments such duties as are concerned with the health of the community, and to deal with those duties only; that the administrative functions of the ministry should be carried out by a board presided over by a minister of Cabinet rank; that the country be divided into suitable administrative areas under local administrative health centers consisting of representatives (*a*) of the rating authorities; (*b*) of the education authorities; (*c*) of the persons contributing to a scheme of health insurance (including employers of labor); (*d*) the medical profession; (*e*) public hospitals; (*f*) dentists; (*g*) pharmacists, and (*h*) nurses; that the principal medical officers of each center should be two, of equal status, one representing the clinical side (chief clinical officer) and the other the preventive side of medicine (medical officer of health); that for each area, hospitals, clinics, or treatment centers should be recognized or established at which persons entitled to treatment under the public scheme should be able to obtain institutional, consultative or specialist services on the recommendation of their medical attendant.

UNIVERSITY AND EDUCATIONAL NEWS

For the Oklahoma College and Station a science building to cost $100,000 was authorized by the last legislature.

By the will of the late Sir Charles Holcroft a bequest of £5,000 is made to the University