

numbers of dyestuffs used, and would hamper the operations of vendors of proprietary, and often comparatively valueless, colour mixtures now offered to the dyer.

Curiously enough, two important topics seem almost to have escaped discussion in the present reprint; very little is said as to how the new American industry is to advance, and as to the way in which a supply of technically-trained chemists is to be obtained. Perhaps it is premature to expect any comprehensive scheme which leads into the unknown future of chemical technical development at a time when the American textile industry is so grievously smitten by the sudden stoppage of dyestuff imports; it is, however, to be noted that the establishment of a coal-tar industry must, to be successful, carry with it the development of many congruent manufactures relating to medicine, photography, and other arts and sciences dependent upon organic chemistry. The other point, as to the provision of technically-trained organic chemists, was merely mentioned by Dr. T. M. Bogert, and with the statement that assistance is required in the shape of grants to universities and colleges.

This latter is a question which has been frequently considered and discussed with us. British Governments and municipalities have expended vast sums for the purpose of aiding the technical industries; whether the expenditure has been justified by the results is extremely doubtful. When any body of teachers, keenly interested and highly competent in its work, feels its activities cramped, by lack of funds, and formulates a practical scheme for useful development, it has perforce to pass the scheme on to some higher authority less acquainted with the subject at issue but nearer the source of means. This latter body hands the matter with appropriate explanations to still higher, and ever less learned, authorities until the real, but sublimely ignorant, fountain head is reached and authorises the expenditure of money under conditions which do not necessarily make for efficiency. The required grant is obtained, not by the convincing force of argument, but by the melting power of cajolery. Manufacturers who require technical assistance, and the colleges and universities which are prepared to train the men, must surely learn to rely upon their own efforts rather than upon possible money grants extracted from non academic governing bodies. Money is undoubtedly required to assist our educational institutions to turn out large numbers of men capable of useful work in the development of our technical industries, but it is questionable whether the present recognised methods for obtaining and using the money are efficient.

In this connection it may be recalled that Dr. W. H. Perkin, the professor of chemistry in the University of Oxford, insisted in his presidential address to the Chemical Society last year upon the necessity for the presentation of a thesis on original research by candidates for an Honours degree in science in our universities. It may

safely be asserted that the translation into practice of this view would do more for the development of the chemical industries in Great Britain than all the deputations which have been sent to Cabinet Ministers and all the discussions which have taken place on possible methods of stimulating chemical technology.

W. J. POPE.

#### THE PROPOSED BOARD OF AERONAUTICS.

AERONAUTICS has, somewhat suddenly, become a subject for public debate, and a serious request has been put forward for an Air Ministry to control the whole of the aeronautical supplies and hand over the products to the Army and Navy. It is perhaps a little unfortunate that the Zeppelin raids occupy so much of the discussion, for the military value of aeronautics in the present war is least evident in the case of the raids.

In order to appreciate the position, it is necessary to realise that the resources of aeronautical industry are not so great that all possible supplies can be obtained fully and quickly. Germany concentrated on rigid airships and obtained a supremacy in airships, whilst the Allies, and particularly Britain, placed their confidence in aeroplanes and gained a supremacy there, which, although not so absolute as that of Germany in airships, is of far greater military importance. Aeronautics is still very young, and is growing rapidly; anyone who, three years ago, had predicted the flight of many hundreds of aeroplanes for several hours of each day of the year would have been looked upon by the general observer as a dreamer. Is it surprising, therefore, that not a single belligerent foresaw what has happened? Without endorsing the claims that the Air Service will ultimately be more important than the Navy or Army, it does appear that the development of aeronautics has already reached a stage at which an Air Board must be contemplated.

Up to the present time the Navy and Army have had independent Air Departments, both of which have made use of private enterprise for the supply of aeroplanes. Experimental work on a large scale has been carried out, and detailed designs of machines proposed for manufacture in quantity have been produced by the Royal Aircraft Factory. The reproduction of machines to these designs has been largely the work of private constructors, who have also made machines to their own design, approved forms of which have been accepted into the Services. Both Air Departments have had the assistance of the Advisory Committee for Aeronautics, a scientific body controlling the aeronautical research at the National Physical Laboratory. A report on the work of this Committee was published annually until the outbreak of war. The organisation outlined above came into existence in 1909, and prepared the way for the extremely rapid growth of aviation in the last two or three years.

Recently a new Committee was formed under the

chairmanship of Lord Derby, the Committee being made up of members of the two Air Departments, the chairman, and Lord Montagu of Beaulieu. The Committee had no executive control in the sense desired by the two non-Service members, both of whom decided to resign their positions. As Lord Montagu indicated a lack of co-operation between the members of the two Air Departments, the resignations produced a general feeling of depression, and to those most keenly interested in the future of aeronautics it has been a relief to find the work of some of the senior members of the Services recognised by promotion. Whatever may be said as to the existing conditions, it seems certain that the extraordinary progress of aeronautics during the war would in itself have been sufficient to raise the question of an Air Board; perhaps the formation of such a Board would facilitate reorganisation. The Government being the only body able to deal with the problem with sufficient knowledge as to facts, the Prime Minister's forthcoming statement will be awaited with considerable interest.

#### NOTES.

THE Royal Society has elected the following as foreign members:—Prince Boris Galitzin, of Petrograd, head of the Meteorological Service in Russia; Dr. C. L. A. Laveran, of Paris, discoverer (1880) of the parasite (*Laverania malariae*) the cause of malarial fever; Dr. Johan Hjort, director of Norwegian Fisheries; Prof. Jules Bordet, of the University of Brussels, eminent in bacteriology; and Prof. H. Kamerlingh Onnes, of the University of Leyden, the distinguished physicist who was responsible finally for the liquefaction of helium.

SIR RAY LANKESTER informs us that Prof. Metchnikoff, of the Institut Pasteur, is recovering from his serious and prolonged attack of pulmonary inflammation. He is not yet able to go into his laboratory, but is able to occupy himself with some speculative inquiries. He would be glad to know of any well-recorded instances tending to show whether the opinion that men of genius are not usually the eldest born in a family is well founded or not.

THE recommendations of the Royal Commission on Venereal Diseases were dealt with in an article in NATURE for April 6, and the opinion was expressed that the measures proposed by the Commissioners must be approved of without hesitation. It is satisfactory to be able to report that on April 14 Mr. Long, President of the Local Government Board, received a deputation from the National Council for Combating Venereal Diseases, which presented a petition urging the importance of giving effect to the recommendations of the Royal Commission. In his reply to the deputation, which was introduced by Lord Sydenham, Mr. Long said he had communicated with the Treasury, and it is prepared to provide the necessary grant to carry out the recommendations of the Commission with regard to the provision of facilities for diagnosis and treatment. These grants will cover 75 per cent. of the cost incurred by local authorities. It is not proposed to create special hospitals for treatment of venereal diseases, since it is thought that treatment will be carried out more efficiently at existing general hospitals.

A THIRD article on aircraft by M. Georges Prade appears in the *Times* of April 14, and deals with the

"Armament of Aeroplanes." It is becoming more and more evident as the war proceeds that the most desirable form of fighting aeroplane is a compromise between the conflicting ideal forms for high speed and convenient gun position. It appears that the practicable weapons are the rifle, machine-gun, and pom-pom, and of these the machine-gun is most frequently used. The position chosen for fighting depends on the field of fire of the machine-gun, which may be fixed relative to the aeroplane, as in the Fokker, or variable, as in most aeroplanes. The machine-gun is commonly mounted so as to fire over the tail, or through a trap-door in the flooring, and it is said that the shot which killed Pégoud was fired through a trap-door. Usually the German aeroplanes do not fire through the propeller, and, when attacking, endeavour to overtake and pass under the hostile aeroplane in order to get into a suitable firing position, but the flight manoeuvres during a fight vary considerably from period to period. The Germans have succeeded in using a full belt of 250 cartridges in their machine-gun, but the Lewis gun used by British flyers is said to be the best for aeroplane attack and defence. The pom-poms, firing a small shell an inch or more in diameter, are not yet extensively used, as they call for a larger and more specially constructed aeroplane than that suitable for a machine-gun.

THE issue of the *Scientific American* for March 4 is an "industrial number," dealing largely with the need for the United States to be prepared for the industrial and economic problems which will arise with the declaration of peace. The editor of our contemporary is able to publish a letter upon this subject received by him from the President of the United States. Dr. Woodrow Wilson, writing from the White House, Washington, on February 11, says: "It will be a signal service to our country to arouse it to a knowledge of the great possibilities that are open to it in the markets of the world. The door of opportunity swings wide before us. Through it we may, if we will, enter into rich fields of endeavour and success. In order to do this we must show an effectiveness in industrial practice which measures up to our best standards. We must avail ourselves of all that science can tell us in aid of industry, and must use all that education can contribute to train the artisan in the principles and practice of his work. Our industries must be self-reliant and courageous because based upon certain knowledge of their task and because supported by the efforts of citizens in the mills. If scientific research and the educated worker go hand in hand with broad vision in finance and with that keen self-criticism which is the manufacturer's first duty to himself, the fields will be few indeed in which American commerce may not hold, if it chooses, a primary place."

AN Exchange Telegraph Company message from Paris, dated April 18, states that the Chamber has voted unanimously in favour of the proposal to effect daylight saving by altering the time by an hour, the object being to economise fuel and lighting.

THE council of the Royal College of Surgeons has awarded the Walker prize of 100l. to Mr. W. S. Handley, of the Middlesex Hospital Cancer Research Laboratory, for his work in advancing the knowledge of the pathology and treatment of cancer.

THE applications received for admission to Miss E. A. Browne's lecture on "Our Tropical Industries," at the Imperial Institute, on Wednesdays, have been so numerous that no further tickets for Wednesdays can be issued. It has, however, been decided to repeat the lectures on Thursdays in April, May, and