

Air Board research department on having overcome all the difficulties.

The promise for the future of aviation is very bright, and the recognition of the necessity for continuous research in the development of both military and civilian aeronautics leaves little doubt that the resources of scientific investigation, which have been of incalculable value during the war, will be fully employed in the solution of the problems of the future.

#### LUDVIG SYLOW.

THE death of Ludvig Sylow (September 7, 1918), at the age of eighty-five, has removed an eminent mathematician, whose career was in many ways remarkable. Sylow's seventh published paper ("Théorèmes sur les groupes de substitutions") occupies less than ten pages in vol. v. of the *Mathematische Annalen* (1872); this contains the proof of his justly celebrated theorem about groups, which has perhaps done more than any other single proposition to advance our knowledge of groups in general. In spite of this great achievement, Sylow had to earn his living as a secondary-school teacher until he had served a term of forty years. Recognition came at last; he was made professor at Christiania at the age of sixty-five, and filled the chair successfully for twenty years.

It may be of interest to recall Sylow's own statement of his theorem: "Si  $n^a$  désigne la plus grande puissance du nombre premier  $n$  qui divise l'ordre du groupe  $G$ , ce groupe contient un autre  $g$  de l'ordre  $n^a$ ; si de plus  $n^b$  désigne l'ordre du plus grand groupe contenu dans  $G$  dont les substitutions sont permutables à  $g$ , l'ordre de  $G$  sera de la forme  $n^a(n^b + 1)$ ." It should be noted that Sylow gives a proof that, if  $n^a$  is the highest power of  $n$  contained in the order of  $G$ , then  $G$  contains a subgroup of order  $n^a$ .

Sylow wrote a number of other papers, dealing with such topics as group-theory, solution of equations by radicals, elliptic functions, modular functions, etc. In collaboration with Lie he undertook the arduous task of editing the second issue of Abel's works. In this the misprints and oversights of the original edition are corrected, and a number of valuable notes and comments by the editors are added. G. B. M.

#### NOTES.

THE appointment of Dr. S. F. Harmer to succeed Sir Lazarus Fletcher as director of the Natural History Museum, South Kensington, is a happy solution of the question raised by the letter from twenty-three naturalists published in *NATURE* of March 6, and commented upon by us in the same issue. Dr. Harmer has been keeper of the Department of Zoology of the museum since 1907, and he will retain this position until the end of next year. During this transition period Mr. C. E. Fagan, the assistant secretary, will assist him in the control of the museum, and, in recognition of his valuable services, will occupy a

considerably improved position on the staff. Mr. C. Tate Regan has been appointed assistant keeper of zoology in succession to Mr. W. R. Ogilvie Grant, who has retired. As the Trustees have appointed a distinguished naturalist to the directorship of the museum, the series of eminent scientific men who have occupied that post remains unbroken. It is the duty of men of science to guard jealously their claims to direct the affairs of scientific institutions, and to protest when any encroachment upon them is contemplated. In the present instance Mr. Fagan was more than a purely lay administrator, and his scientific services have been appropriately recognised by the Trustees. The tendency is, however, to place lay administrative officers in control of State institutions concerned with scientific work, on the ground that a man of science cannot be a good administrator. Even if this general belief, cherished in the Civil Service, could be justified—and we do not accept it for a moment—the highest office in a scientific institution should be held by a scientific man, and not by a lay official. That is the whole point of our contention, and we are glad that the Trustees have accepted what is the feeling of scientific men generally in regard to it by appointing Dr. Harmer to the vacant post, which he is highly qualified to fill.

LORD SUDELEY is to be thanked for having brought the House of Lords to such a high appreciation of museums as educational instruments that, on March 12, in the face of some Government objections, it wholeheartedly agreed to his motion:—"That his Majesty's Government should, without further delay, reinstate the system of providing official guide-lecturers for the museums and picture galleries under the control of the Government, which, with one exception, has been in abeyance during the war, making such addition to the numbers and in the salaries and status of the guides as may be found necessary." The Government, it seems, is prepared to reinstate the pre-war conditions, but is not prepared to increase the numbers or salaries of the guide-lecturers; neither does it act with promptness in clearing the museums of alien departments. There can be no doubt as to the popular feeling in this matter, and when, twice within a fortnight, it is supported in the Upper Chamber by men of such weight as Lords Crewe, Harcourt, Meath, Morris, Gainford, and Rathcreedan, then a Government which contains many sympathetic elements should surely be emboldened to spend the relatively minute sum needed to set all this valuable educational machinery in motion. His Grace the Archbishop of Canterbury urged that an increased number of guides would permit the extension of co-operation between the British Museum and the primary schools through lectures to the teachers, who would then take their classes to the museum; there could also then be an extension of similar aid to schools of art and secondary schools. Incidentally, the Primate took occasion to extol the merits of the British Museum guide-books, from which, he rightly said, visitors might derive much advantage. Can he be aware that the General Guide to the Natural History Museum has been out of print for some years, and that a sale of many thousands to the visiting troops and others has thus been lost? A new edition of this guide should be an early claim on the time of the new director.

THE question of long-distance wireless telegraph communication is now engaging the attention of a Committee recently appointed by the War Cabinet, with Lord Milner as chairman. The need for action