

affected; doubtless the travelling birds would be flying too high above the tumult of the battlefields to notice it and, even if they encountered a "barrage," they could always "rise to the occasion." Before aeroplanes became as common as they did towards the end of the war, birds were considerably excited by them. Gulls and wild-fowl were observed to flee before them in panic-stricken rout, but on one occasion a flock of gulls is reported to have flown inquisitively after a seaplane. Incidentally, it may be noted that some interesting observations were made by our aviators as regards the height at which birds fly when on migration.

Perhaps the greatest effect of the war on bird-life in general will prove to be the lack of forests and woods. The abnormal felling of timber which has been carried out during the war must have an effect on arboreal birds for many years to come. The presence of the great spotted woodpecker in new areas in Scotland has already been announced, and is attributed to the fact that former haunts have disappeared under the axe. Owing to the absence of our gamekeepers an undeniable increase in "vermin" is widely reported. Jays seem to have been particularly numerous and widespread lately, and buzzards have been seen in many an unaccustomed place. But the benefits accruing from the lack of gamekeepers are not likely to be enjoyed for long.

Enough has been written to show that the subject of "Birds and the War" is one which demands more than a short article. I have compiled a book, now in the printers' hands, which deals (I think as fully as is at present possible) with the whole subject. Though I do not claim that my book attains finality, I trust that it may prove of some use to ornithologists, and also be of general interest; in any case, I offer it as a tribute to our friends the birds.

HUGH S. GLADSTONE.

PROF. G. CAREY FOSTER, F.R.S.

PROF. GEORGE CAREY FOSTER, whose death, on Sunday, February 9, at the age of eighty-three, we announced last week, was born at Sabden, in Lancashire. He received his education at University College, London, after which he proceeded to the Universities of Ghent, Heidelberg, and Paris. Carey Foster had held many official positions. He was appointed professor of experimental physics at University College at the age of thirty, his chair ultimately becoming the Quain chair, under the endowment of Sir Richard Quain. For four years, from 1900, he held the office of principal of the college. He was a fellow of the Royal Society, and one of its vice-presidents during the periods 1891-93 and 1902-3. He occupied the presidential chair of the Society of Telegraphic Engineers (now the Institution of Electrical Engineers), and also of the Physical Society of London. He was a fellow both of the University of London and of University College, and an

honorary member of the Jewish Historical Society and of the American Philosophical Society.

In the last years advancing age compelled Carey Foster gradually to relinquish his official positions and to retire more and more into his country home. To the younger generation he is therefore known only by name, yet he played a leading part in at least three important movements connected with education in London.

First, in the eighties of last century, efforts began to be made to bring about an achievement of the aims of the original promoters of the foundation of the college as a university. Carey Foster (in his own words) looked upon the college not only as an important place of education, but also as an important expression of a most remarkable intellectual movement—"a movement which stood for free inquiry and effort towards improvement, intellectual and social." Education, untrammelled by extraneous considerations, could not be obtained in the days when his college was founded. Owing to the vicissitudes which the scheme met with, the teaching and examining functions of the institution had become distinct, the former being vested in the college, while the latter were carried on by the University as a separate body. Carey Foster threw himself, heart and soul, into, if he did not actually lead, the movement for the re-establishment of a teaching University in London, so that its teachers might have freedom in their teaching, untrammelled by the examinations of a distinct institution. This movement led to the establishment of the present University, which, however, only partly realised the wishes of its first promoters. In order still further to realise these aims, the college ultimately (January 1, 1907) allowed itself to be swallowed up in the University in order that it might, if possible, work the necessary reforms from inside. Carey Foster identified himself with the movement from first to last.

Next, still further to carry out the idea of emancipation, he was a hearty supporter of the projects for the admission of women to university teaching and privileges. Such a change was inevitable. It was regarded, in some quarters, as a hazardous step. Its extension within the college and to other colleges and universities in England and abroad is a justification of the pioneer work of the college.

The third movement was concerned directly with the teaching of the subject of which Carey Foster was professor. He laid the foundation of the physical laboratory as it exists to-day. When he himself was educated, laboratory work, as we now know it, did not form part of any curriculum. But, about 1866, in two rooms in his college, he created the first physical laboratory, in which students might repeat the standard methods of measurement which were then being rapidly developed—especially on the Continent—and be taught the conditions for success in such measurements. Cabinets of physical apparatus had existed before, but these were intended for the illustration of lectures. The spirit of change was in the air,

and physical laboratories sprang up in many directions. At the present day lectures without laboratory work are a deadly anachronism, even for, or perhaps particularly for, junior men.

As a thinker, Carey Foster was somewhat hesitant in forming definitive opinions on philosophical and scientific theories. To this cause, no doubt, is due the comparative fewness of his publications. It did not seem logical to him to derive extensive theories from a few experimental observations. For this reason he postponed publication both in his own case and in that of his students. But a method of measurement was another matter, and his published extensions of Wheatstone's bridge method of measuring resistances and of the measurement of mutual inductances are remarkable for their neatness and value. His services on the Electrical Standards Committee of the British Association for the Advancement of Science, and on the Kew Observatory Committee of the Royal Society, prove the direction in which his bent really lay. His publications include an article in Watts's "Dictionary of Chemistry," and he was joint author of a text-book on electricity and magnetism. In the first edition of the latter he strove to develop the subject on the lines laid down by Maxwell, according to which the electrical actions in the æther are all-important; but in later editions he gradually yielded to the pressing claims to recognition of the very large number of new phenomena discovered in the last twenty years, which require a modification of the most extreme of Maxwell's conclusions.

In his writings Carey Foster had the mastery over a lucid and logical prose of a remarkable order. He was much sought after as a sage counsellor, for his kindly method of criticism disarmed resentment when his counsel was adverse. He lived at peace with all men, his main aim being, as expressed in his last Christmas greeting, "to do all which may achieve and cherish a just and lasting peace among ourselves and with all nations."

NOTES.

THE following announcement is made in the political notes of Tuesday's *Times*:—"Sir Watson Cheyne has been appointed chairman of the newly formed House of Commons Medical Committee, which consists of Members who possess a medical or surgical degree, or are interested in medical or scientific matters. The Committee will exchange views upon all proposed legislation which has relationship to any medical or allied question. The main object of these deliberations will be the avoidance, so far as possible, of the expression of conflicting medical or scientific views in Parliamentary debate. The Committee will also invite reports from, and hold conferences with, medical and scientific bodies. Major Farquharson is secretary to the Committee, and Sir William Whitla, Lt.-Col. N. Raw, and Capt. Elliott form the executive committee." As men of science are not sufficiently organised to secure seats for members of their own body in Parliament, they should be glad to know that members of the medical profession are willing to consider scientific as well as medical matters of national interest. We should not like to think, how-

ever, that scientific men, knowing the needs of the country and the service of progressive knowledge to civilisation, will be content to remain permanently without representation among our legislators. Medicine is only one branch of science, but, as things are at present, science is a department of medicine so far as Parliamentary action is concerned.

A VIGOROUS attack on the policy of the Board of Agriculture was made in the House of Lords last week by two noble lords, both of whom in the past have had some share in directing the operations of the department. Criticism was directed to a recent circular in which it was announced, *inter alia*, that what has been known during the war as the "ploughing policy" would no longer be actively prosecuted, and that efforts should be concentrated on improving the condition of the existing arable land rather than on adding to its area. Lord Ernle had no difficulty in parrying the attack. He pointed out that much of the increase of ploughed land had been secured at the expense of the effective tillage of the existing acreage, and that an increase in food production would be secured at least cost by thoroughly cleaning and conditioning the land already under the plough rather than by breaking up new areas of grassland—at best always a speculative operation. The ideal which the President of the Board of Agriculture has set before the farming community is a modest one, merely to raise the general standard of farming to the level of that attained by the best farmers in the adjoining district. It is not generally recognised how wide is the gap indicated, but instances could be given where the value of land has been quintupled by the application of scientific knowledge without moving adjoining farmers a hair's-breadth from the ruts of their outworn practice.

A LEADING article in the *Times* of February 17 states that the Prime Minister has agreed to receive a deputation on the subject of fisheries administration. It points out that the present position of our sea fisheries is anomalous and unsatisfactory, and that the establishment of a Department of Fisheries would remedy this, giving the fishermen one special department, instead of half a dozen, to deal with; improvement in transport, a better regulation and supervision of the fisheries, and other urgent matters, would then receive attention. In relation to the alternative proposal for a Ministry of Water, the *Times* remarks that the question of the use of water-power is very remote from that of food supply, nor is it more favourably disposed towards the scheme of State control propounded by the Empire Resources Development Committee. The following reference is made to the need for scientific investigation:—"An important branch of the work of the proposed Ministry would be the organisation of scientific research into the habits and movements of fish. Although the study of marine biology and kindred subjects has made great strides in the United Kingdom in the last few years, our scientific equipment is utterly unworthy of the greatest fishing nation in the world. We have been far outstripped by the United States and by Canada, the splendid sea-fish hatcheries of which put us to shame." With the first two sentences we fully agree, but with regard to the last we may remark that the utility of hatcheries is disputed, and that we have far less reason to feel ashamed when looking at the sea-fish hatcheries of the United States than when considering what we, whose fisheries are as important as those of the rest of Europe, have to set against the marine investigations of the Norwegian Hjort, the Danes Petersen and Johannes Schmidt, and the Dutchmen Redeke and Hoek.