

work. The Roseworthy Agricultural College Experimental Farm in South Australia covers about 1600 acres, with 100 acres in permanent experiments; the Hawkesbury College Farm in New South Wales extends to 3500 acres, with more than 200 acres of experimental plots; whilst the Victorian State College Farm at Dookie has an area of about 4500 acres, with some 400 acres devoted to experimental work with cereal and fodder plants. In all there are in the various States about thirty experimental stations, with a total farm area of nearly 50,000 acres, in addition to numerous experimental orchards, vineyards, and other areas.

Armed with this extensive equipment, the Australian State and college workers have achieved very substantial advances in agricultural production, of which the development of new varieties of wheat deserves special mention. Since the federation of the States into the Commonwealth in 1901, however, there has been a growing feeling in favour of a central Federal organisation to secure greater co-ordination of effort and reduce the overlapping inevitable under the existing State systems. Many important problems that are receiving or require attention are common to the greater part of Australia, and could obviously be dealt with more effectively and with greater economy of means and men by a central organisation than by independent investigation in the different States.

A similar need has also been felt in connection with other industries, and the whole movement has culminated in the recommendation by the Commonwealth Advisory Council of Science and Industry for the immediate creation of a permanent Commonwealth Institute of Science and Industry, organised purely for research, and entirely dissociated from routine administrative work. The executive committee, under Prof. D. Orme Masson, and including other prominent agricultural investigators, has devoted a large share of its attention to agricultural research, and in the final report has formulated a definite programme of agricultural research for the initial years of operation of the institute, which includes studies in soil fertility, plant pathology and insect pests, plant breeding, animal breeding and feeding, animal diseases, cotton and flax growing, forestry, and other subjects. The Advisory Council has pressed for immediate action, and the general features of the organisation and lines of work have already received the provisional approval of the Commonwealth Government, and doubtless formal adoption will not long be delayed.

Among the many activities of the executive committee of the Council, special interest attaches to the week's conference of agricultural men of science held under its auspices in Melbourne in November, 1917, and reported in full in Bulletin No. 7 of the Advisory Council. Limitations of space prevent more than the briefest reference to the varied programme dealt with by the conference, the topics discussed including cereal

breeding, the acclimatisation of plants, the utilisation of Australian phosphate deposits, the tobacco and sugar industries, fibre-plants, native grasses and fodder plants, and crops for the production of power alcohol.

One session was devoted entirely to a general discussion on the endowment and co-ordination of agricultural research in the Commonwealth, papers on the subject being read by Prof. A. J. Perkins, Director of Agriculture in South Australia, and Prof. R. D. Watt, professor of agriculture in the University of Sydney.

Prof. Perkins urged that the research worker should be free from State control, and advocated the development of agricultural research at the universities rather than in the State agricultural colleges. For this purpose central research institutions, financed by the central Government, should be located at the different universities. The University of Adelaide has already secured land for the purpose, but financial assistance is required to develop the scheme.

Prof. Watt also emphasised the importance of developing agricultural research at the universities, but pointed out that the rate of increase in the number of trained research workers must be slow, owing to the small numbers of agricultural students at the universities and the consequent limitations of staff. He hoped for better conditions in this respect after the war, especially if provision could be made for research scholarships and fellowships.

The shortage of adequately trained research workers was generally agreed to be one of the chief difficulties in the way of the necessary expansion of research activities, and a resolution was adopted requesting the Advisory Council to bring the need for training more research workers to the attention of the universities. The difficulty is by no means peculiar to Australia, and all concerned with the promotion of agricultural research will await with interest the steps taken in Australia to solve this particular problem.

REGINALD PHILIP GREGORY.

BY the death on Sunday, November 24, of Mr. Reginald Philip Gregory, from pneumonia following influenza, the University of Cambridge has lost an able botanist, a man for whom young and old felt a warm affection. Mr. Gregory was born on June 7, 1879, at Trowbridge, Wilts; he received practically the whole of his early education in a preparatory school established in 1887 by his mother at Weston-super-Mare, where special attention was paid to natural history. At the suggestion of Prof. Reynolds, of University College, Bristol, from whom he received some additional training, he successfully competed for an entrance scholarship at St. John's College, Cambridge, in 1897. He came into residence in October, 1898, and in 1900 obtained a first class in the first part of the Natural Sciences Tripos; in

1902 he gained a first class in botany in the second part of the Tripos.

In 1904 Mr. Gregory shared the Walsingham medal with the late Dr. Keith Lucas, and in the same year he was elected a fellow of his college. In 1907, after serving five years as a demonstrator in the botanical department, he was elected to a University lectureship. In 1912 he became tutor of St. John's, an appointment which he was able to hold with the University lectureship; and in the same year he married Joan, the second daughter of Mr. T. E. Bisdée, of Hutton Court, Somerset, by whom he had three children. From July, 1915, to July, 1917, he held a captain's commission in an officer cadet battalion at Cambridge, which he relinquished to join the 1st/6th Battalion of the Gloucestershire Regiment as a second-lieutenant. After about a fortnight in the front line he was gassed, and from the effects of this he never completely recovered; he was discharged from the Army in October of this year, and, though still far from well, resumed his college and university duties.

Mr. Gregory was one of a group of students who were stimulated by the teaching and enthusiasm of Prof. Bateson to take up different branches of genetics; it was mainly with cytological problems that his researches were concerned. He was the author of several papers, some of which were published in the Proceedings of the Royal Society in collaboration with Prof. Bateson. His most important contributions were those dealing with the genetics and cytology of giant races of *Primula*, published in the *Journal of Genetics* (1911) and in the Proceedings of the Royal Society (1914). His work demonstrated the striking fact that some forms of *Primula* exhibit the giant character not only in the plant-body as a whole, but also in the constituent cells. The results obtained constituted a definite advance in our knowledge of phenomena connected with the reduplication of certain terms in a series of gametes. His researches also included the investigation of heterostylism, habit, leaf-form, and flower colour in *Primula sinensis*, the seed characters of *Pisum*, reduction-division in ferns, forms of flowers in *Valeriana*, and other subjects.

Mr. Gregory was a good all-round botanist, who inherited from his mother (whose work on the genus *Viola* is well known to systematists) a love of natural history. He had already established for himself an honourable position as an original investigator, and those who knew him best looked forward with confidence to still greater achievements in the future. He was a man who would never grow old; he enjoyed life in the best sense, and endeared himself to undergraduates and older associates by his unselfishness and joyous, open-hearted character. His place will be hard to fill, particularly in these days when there is an exceptional need for virile teachers and men of wide and strong human sympathies.

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NOTES.

IN his speech at Wolverhampton on Saturday last the Prime Minister made a noteworthy declaration in regard to the application of science to agriculture—a declaration which would appear to adumbrate something more than a passive policy of commendation. "Scientific farming *must* be promoted," he said; and in another passage he spoke of utilising the capacity of the soil to a greater extent by the application of scientific principles. There is a certain vagueness in these statements, and until concrete proposals are put forward it is difficult to appraise their meaning and value. One obvious way of adding to the capacity of the soil would be to promote the use of artificial fertilisers, and, seeing that Mr. Lloyd George also spoke of the need for a "national supply of fertilisers," it seems probable that what he had in mind in speaking of scientific farming was the extended use of artificial manures. The suggestion—or is it a decision?—to have a national supply of fertilisers foreshadows a new departure in State policy of great import. It is to be hoped that in applying science to farming the Prime Minister will bear in mind the need for encouraging research in the sciences bearing on agriculture.

A DEPUTATION from the National Sea Fisheries Protection Association is to wait upon the Right Hon. R. E. Prothero, President of the Board of Agriculture and Fisheries, as we go to press, to urge that the evolution and general direction of a fisheries policy for the whole nation should be entrusted to a Minister of the Crown who will be able to give to the subject his undivided interest. The industry is of prime importance, and a strong case can be made out for the constitution of a separate Ministry to be concerned with its interests and development. Mr. Hoover, the United States Food Administrator, whom we welcome among us, has warned us time and again of the fact that for many years to come the world must go short of beef. The impending meat famine, he tells us, started in 1907. In meat-eating countries the population increased. The demand for meat rose; prices rose; stockmen yielded to the temptation, and slaughtered cows, heifers, and calves which should have been kept as *reproducteurs*. The herds have further been diminished by periods of drought in Argentina, Australia, and North America, and by internecine strife in Mexico and Europe. Whatever happens, we shall be short of meat for years to come. That is one ground on which the National Sea Fisheries Protection Association bases its claim for reform of the fisheries administration of this country. The other considerations are: that fishermen will not undertake the catching of fish—a herculean labour of unending toil—unless there is a good living to be made out of fishing; that their industry has been so disorganised during the war that nothing short of national assistance can save it; and (a self-evident proposition) that these islands must maintain their fishermen communities or "go under." Such, in brief, is the case which the association presents to the Government. It has been worked out in detail in a printed memorandum which we commend to the study of our readers. Copies can be obtained from the secretary of the association at Fishmongers' Hall, E.C.4. We wish well to the deputation and to Mr. Prothero. Meanwhile, we note that there is a great degree of unanimity in the demand of the industry for a central Ministry to supervise the work of the English and Scottish fisheries services, and that the fishermen of Canada,