ADV 28.9.27

AGRICULTURE AND RESEARCH.

MR. J. G. WOOD RETURNS.

Scientific research has been applied to agricultural problems in recent years, and in England an enormous amount of work has been done. Mr. J. G. Wood, of the University, has made a report on it to the Council of Science and Industry.

After spending two and a half year abroad doing research work, Mr. J. G. Wood, lecturer in botany at the University, returned by the Orsova on Saturday. He will resume duty at the University on October 1. Having graduated in science at Adelaide some years previously, Mr. Wood was awarded one of the two research scholarships offered for Australia in 1924 by the trustees of the 1851 Great Exhibition Fund. Most of his time abroad he spent in residence at Gonville and Caius College, Cambridge, studying the physiology of plants under Dr. F. F. Blackman. From June to August this year Mr. Wood carried out investigations on behalf of the Commonwealth Council of Science and Industry, in conjunction with the Empire Marketing Board, with the object of studying diseases of agricultural research in Great Britain and their value in dealing with problems in Australia. He was privileged to be received in every centre and efficiency of such research work in Great Britain, and as a result of his report to the Council of Science and Industry, it is probable that special lines of research will be pursued here. He visited the plant pathological institute at Aberystwyth, the Rowett Institute at Aberdeen, and other institutes at Cambridge, the Imperial College at London, and the two main lines of investigation, the first being that of pastures and grass lands, and the study of the nutrition of plants and pastures; the second was the investigation of horticultural conditions, particularly those concerning stocks for apples, cherry plums and peaches. Mr. Wood found the standard of the institutions extremely high, and they were of very great value to Australia in general research work. There was also close co-operation between the research men and the farmers, particularly the latter being almost continuously on visits to the institutes.

Improving Grazing Lands.

Fine work in connection with grass lands had been done at Aberystwyth, where an enormous number of grasses had been collected, tested, and classified. Much had been extraordinarily successful in selecting useful types. It was found that pure grasses did not grow well by themselves, and attention had been turned to mixtures of grasses and clover. Considerable success had also been gained in the breeding of such mixtures, and on land which had previously carried only one or two sheep to the acre, it was possible to carry double that number. In Australia, virtually nothing was done with but grasses, although the Waite Institute had carried out investigation on this subject, the results of which promised to be of great national importance. There was tremendous need for research into grazing pastures. Australian subterranean clover seed had been sown in Aberystwyth, and there it grew as well as the Irish annual rainfall. Three pounds of seed per acre was sown in 1924, and now there was the equivalent of half a ton to the acre. The patch sown was then shut up as a field, and when sheep were let in they were straight away kept cropped it to the ground. But for its hardiness and habit of a pound, subterranean clover would become a great pasture for England. It was eminently suitable for Australia, and had a big future in Australia.

Animal Nutrition.

At the Rowett Institute the work was largely connected with animal nutrition problems. The main study at that institute had hitherto been almost solely concerned with the functions of carbo-hydrates, fats, and proteins, which were educated as the supply of energy to animals. In addition to these, however, there were ten or twelve universal constituents which were necessary for growth, and any disturbance of the delicate balance between them led to functional disorders in the body. Important work had been made on Scottish sheep suffering from dietetic troubles, which was found to be due to a fault in the food. Sheep in the Falkland Islands and in New Zealand suffered in the same way from a shortage of iron. When the sheep left the Institute were given a normal ration they soon became healthy. The Institute was of great importance to Australia, for many soils here were probably deficient in phosphorus, as were the herbages. If the soil was deficient in phosphorus, it would be impossible for any animal to work well, and experiments were working on Australian Cambridge soils. Another interesting problem was that of manganese deficiency in soils, which was found to be responsible for certain troubles in animals. Manganese was found in the ash of certain plants, and it was probable that it played a part in the oxidation processes of the plant. Manganese deficiency was found in certain districts in Great Britain, and at East Malling it was probably superior to that in any other place. The outstanding feature in planting an orchard was to secure uniformity of growth which would ensure a compact and uniform manner. The so-called "Paradise" apple stock, on which the work at East Malling was begun, were supposed to be a dwarfing stock, but sixteen distinct types were found. These types varied from stocks which would come into full bearing two or three years after grafting, through intermediates, to others which would not reach full cropping for twenty-five years. Eventually these sixteen types were weeded down to four, which could now be planted with absolute certainty. The dwarf started bearing after two years, and after ten years, when the semi-permanent trees were in full bearing, the first could be grubbed out. The same system could be continued as the permanent trees came into bearing. Similar work had been done with pears and peaches.

Mr. Wood said the whole of the work he had mentioned had been developed within the past ten years, and there was enormous field for investigation, in which Australia could not afford to lag behind.

REC. 28.9.27

FORESTRY CONTROL.

Transfer to Commonwealth.

Evidence to Commission.

CANBERRA, Tuesday.

Mr. C. Lane-Poole (Director of Forestry), in evidence before the Constitution Commission yesterday favoured Federal control of all the forestry activities of Australia. He stated that in only two States were the activities under qualified men. Great difficulty had been experienced in training students in forestry, because there were no forests in Australia. Men desirous of research should go to England to study forests which had been managed for 200 years. Australia had 24,250,000 acres suitable for afforestation, and this was being cleared, but only 3 million acres was reserved for that purpose. A wise policy would be not only to retain all that, but also to obtain as much more of that acreage as possible. Australia was the only country where the forestry authorities were not controlling the water supply areas. Forests on those areas would be better effected by the forestry authorities; and there was no reason why catchment areas should not be made to yield a good revenue from timber. Grazing rights on forest areas should be controlled by a forestry department, because they needed careful supervision, and if uncontrolled were a grave danger.

Most of the forests here in Australia were deliberately started by graziers, continued Mr. Lane-Poole. They had a saying that the best grass seed that could be grown was a fire. As was matches. Australia's misfortune was that she had no native pine. If she had, Canberra and all other hilly parts would have been covered with dense forests like Canada and the United States. Such pines as were native were at the bottom of the tree of evolution. Our eucalypts had evolved, but the pines had not. Federal control of forestry must be for the better; it could not be for the worse. The Commonwealth Government was less likely than the States to be hampered by demands for social reforms. If the forests of Australia were taken over, they would return a revenue immediately; but the various States objected to handing over their lands to the Commonwealth.

NEWS 28.9.27

Solicitor and Soldier

MR. T. R. MELLOR

Born at Semaphore in 1894 Major Thomas Reginald Mellor, D.S.O., was educated at Prince Alfred College. Later he went to Adelaide University to study law. In 1913 he was admitted to the bar.

The war intervened, and Major Mellor went into camp with the artillery at Seaton Park as a second lieutenant. He had not long to do to gain his bachelor of laws degree. He served in Egypt, east of the Suez Canal, and in France and Belgium with the 9th Divisional Artillery, and had command of a battery of 18-pounders. He became adjutant to Brig. Gen. O. F. Phillips, C.M.G., D.S.O. (base commandant in South Australia), and subsequently was Brigade Major to Brig.-Gen. H. J. Bessell-Brown, C.M.G., D.S.O., V.D.

Major Mellor was twice mentioned in despatches for conspicuous bravery in action, and was awarded the Distinguished Service Order; also the long service medal for soldiers enlisting in the ranks and giving 20 years' effective military service. Major Mellor was gassed in France. When he returned to Australia he completed his degree and entered the firm of W. & T. Pope. He is a trustee of the estate of the late William Pope.

He did not give up his military career, and is in command of the 13th Field Artillery Brigade. He is the senior artillery officer in South Australia.

In his legal capacity Major Mellor was Parliamentary agent for the Mile-End Markets Bill, a private bill now before Parliament for the establishment of a produce market at Mile-End adjoining the goods yard.

He is also honorary solicitor to the Baptist Union, Adelaide City Mission, and Aborigines Friends' Association. At school Major Mellor played football and cricket and rowed at the University. He plays a little tennis, and is vice-president of a number of church cricket teams, in which he takes a great interest.

Major Mellor, who is married and has four children, lives at Kensington Park. His hobbies are motoring and gardening.

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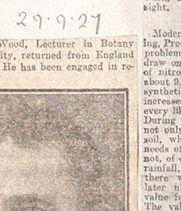
Mr. J. G. Wood, Lecturer in Botany at the University, returned from England on Saturday. He has been engaged in research work for the Commonwealth Council of Science and Industry, and an interview with him was published in "The Advertiser" yesterday.



Mr. J. G. Wood.

REC. 29.9.27

MANURING FOR CROPS.

Lecture by Professor Prescott.

An interesting address on "Manuring as a factor in the production of increased crops," was delivered by Professor J. A. Prescott, of the Waite Research Institute, at a meeting of the agricultural committee of the Liberal Federation, held at the Liberal Club hall, North terrace, on Wednesday morning.

The Minister of Agriculture (Hon. J. Cowan) presided. He said that Professor Prescott hardly needed any introduction to an audience in view of practical farming work being done at the Waite Institute in the interests of agriculture was known to them all. That work was of immense value, not only to this State, but to the Commonwealth, and that fact had been recognised by the Prime Minister (Hon. S. M. Bruce) on his last visit to South Australia, when he inspected the institute. It was probable that, as a result of that visit, the Commonwealth would make a substantial grant to the funds of the institute, if it appeared.

Professor Prescott, in opening his address, said there were two ways in which the yield of crops might be increased. The first was by the improvement of the soil, and the second by feeding the crop itself. He was rather inclined to speak of farmyard and stable manure in those days of motor traffic, but if they remembered that their foundation of fertility in Australia seemed to be directly interested in gardening of some kind, the importance of securing adequate supplies of farm manure was of more than academic interest. Farmyard manure had long been recognised as the return to the soil something of everything that had previously been removed by growing plants, and, in addition, it helped to increase the store of humus. The absence of regular supplies of farmyard manure might be overcome by the application of artificial manures or synthetic products. That had been made possible as the result of investigations at Rothamsted, and in connection with straw. At the Waite Institute their experience had shown that when fermenting straw was supplemented with nitrate of potatoes was approximately equal to that of stable manure. Calcium was one of the most important elements in manuring. Although it is a plant food, its salts were never directly used as such, but as soil ameliorants. Calcium sulphate was another important soil ameliorant, which had proved its value in the irrigation districts of the Murray River generally, and more particularly at Goroke in the Western Wimmera, where an increase in the yield of wheat to the extent of 27.4 bushels was obtained by treating the soil with 30 cwt. of gypsum. For the best results it was necessary to add nitrogenous and phosphatic fertilizers. Of the many on the market, all would be found to fall into the following groups—Nitrogenous, phosphatic, potassic, organic, and mixed. The most extensive of all manures used to-day were those which contain nitrogen. Nitrogen was not an essential plant food, and went to the building up of soil material in the plant known as protein. Nitrogen was obtainable in many forms, as an example. Sulphate of ammonia, by-product from the manufacture of coal gas, contained 20 per cent. nitrogen, 60 per cent. against 15.5 per cent. in the Chilean nitrate. Up to comparatively recent times the chief source of nitrogenous foods, and went to the building up of soil material in the plant known as protein. Nitrogen was obtainable in many forms, as an example. Sulphate of ammonia, by-product from the manufacture of coal gas, contained 20 per cent. nitrogen, 60 per cent. against 15.5 per cent. in the Chilean nitrate. Up to comparatively recent times the chief source of nitrogenous foods was the bulk of supplies, and the time seemed not far distant when a world famine of nitrogen, would be in sight.

Value of Fallowing.

Modern chemical science and engineering, Professor Prescott said, had solved the problem, and to-day, they were able to draw on the almost inexhaustible supply of nitrogen in the atmosphere. For about 6,000 tons of nitrogen were fixed by synthetic processes, by 1925 that had been increased to 600,000 tons, and there was every likelihood of a considerable expansion. During the process of fallowing there was not only a conservation of nitrate in the soil, which was sufficient to meet the needs of the wheat crop. Nitrogen could not, of course, make up for a deficiency in rainfall, but where rainfall was good there were indications that sooner or later nitrogen was going to find some value for cereal production in Australia. The value of leguminous crops in maintaining soil fertility had been known since Greek and Roman times, but it was only in modern days that the scientific workers had been able to explain those facts. In the irrigation areas leguminous crops were used for the double purpose of adding organic matter and nitrogen to the soil, which were notably deficient in both respects. The sources of phosphate material were bones and rock phosphate from various sources and basic slag from the manufacturing. The superphosphate of commerce was nearly all made from rock phosphate, and that used in Australia was first derived from the deposits of Nauru and Ocean Islands. Experimental work had shown that the water soluble character of superphosphate made it the most valuable source of phosphorus as for fertilizer purposes, although the relatively high cost had led to the use of basic slag and rock phosphate, particularly for the topdressing of pastures. Experimental work at the Waite Institute had shown that under the rainfall conditions at Glen Osmond the slag and rock phosphate were of practically the same