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SOUTH AUSTRALIAN PLANTS.

Their Native Haunts.

The first of three extension lectures by Professor T. G. B. Osborn, D.Sc., on "South Australian plants in their native haunts," illustrated with lantern slides, was delivered at the Prince of Wales Theatre, Adelaide University, on the evening of July 1. There was a large and appreciative audience. The lecturer dealt in most interesting style with the plant life of the hills and plains.

Ecology.

During the past 20 years, he said, there had developed a new branch of botany which, in contrast to the older one of detached plants, studied the community of plants in their natural surroundings. That branch of botany was ecology. On the Continent of Europe it was sometimes called plant sociology, because it was recognised that there were societies of plants, the members of which were linked together by their service to the community rather than by any natural affinity. Just as in human society, the community might be on the up-grade or down-grade, and in the community of plants there might be found those which were processing towards a higher condition, or others that were distinctly decadent. The plant sociologist aimed at determining the conditions influencing the direction in which the plant community was progressing. He learned to recognise that under optimum conditions in any district the plant communities were capable of attaining a degree of specialization which was called their climax—that was, the highest possible level the society could reach in those conditions, climatic or otherwise, in which it was growing. When for any reason some disturbing element came in for example, bush fires, grazing of animals, and so on—the community began to break down, and the society had to reconstruct itself at a lower level. From that lower level it might advance again, and by slow degrees even reach its original state—the climax. On the other hand, if the disturbing influence persisted there would result an entirely new state of society, suited by its needs to flourish in the changed conditions. Of all the disturbing influences the settlement of man was one of the greatest.

Main Types of Climax.

Within a radius of 30 miles of the Adelaide G.P.O. there were two main types of natural climax—the stringybark forest of the Mount Lofty district and the open woodlands, such as were seen at Torrens Park, or on the Urrbrae Estate, or, further afield, in the Mount Barker district or north towards Clare. Both of those were essentially tree or forest communities. Originally the stringybark communities covered all the highlands of the Mount Lofty ranges, from near Williamstown to Cape Jervis, where the rainfall was about 30 in. a year, and other conditions were suitable. The open woodland community, on the other hand, covered the foothills, plains, and parts of the lower north, and those hills districts which had a lesser rainfall. He compared the Mount Lofty type of forest with similar types in Victoria and Tasmania, and stated that if Mount Lofty had been 1,000 ft. higher than at present he might have expected a similar type of forest and flora to that of the ferntree gullies of the two other States named. The red gum was undoubtedly the king, and the graceful blue gum the queen, of the South Australian forest trees.

Man's Disturbing Work.

Human interference, proceeded Prof. Osborn, had profoundly altered the extent of those communities. The stringy bark forest had been largely cut and burnt, and in most places proper provision was not being made for natural regeneration. That was a matter of great importance, and in which all could help. Forests were often thought to induce rainfall. There was no evidence for that, but they had a most important influence in regulating the rate at which the water ran off the land. The destruction of much of the natural stringy bark forest along the steep hillsides and watersheds had been a cause of many of the winter floods that reached the Adelaide plains. If the forests were conserved along the watershed, or were replaced by even more valuable timber, there would be less damage caused by overflowing creeks. The open woodland which originally covered the plains had been almost reduced to the vanishing point. That was because the land had proved capable of agricultural development. Man needed grass land to feed his stock and arable land to grow his crops. Few parts of South Australia had natural grassland climate, but the open woodland was rich in grass species that with human interference might become much more prominent. The question of pasture improvement had not yet received in South Australia the attention it merited. There was room for much experimental work not only in the introduction of new kinds of fodder plants, but in manurial treatment. Very light applications of certain manures might tip the balance in favour of such plants as clovers and rich pasture result. Those fodder-plant communities were largely artificial, and if the areas were left to themselves the natural type of vegetation would reassert itself. At Mount Barker a landowner had provided an enclosure so that he (the lecturer) could observe as time went on to what extent the natural grasses would come back when protected from destructive influences. In Kuitpo Forest, too, the University was conducting botanical research work. He made a plea for the preservation of the remnants of forest trees at such places as Heywood Park and Hazelwood Park.

The Illustrations.

A large number of lantern slides added to the enjoyment of the gathering. Such places as the National Park at Belair, Birdwood and other hills towns, the Torrens Gorge, Waterfall Gully, Strathalbyn, Meadows, Mount Pleasant, Morphett Vale, Kuitpo Forest, Mount Compass Swamps, Kapunda, and Clare were featured. The colouring and general qualities of the pictures were excellent.

The second lecture, which will have reference to scrub lands and islands, will be given on July 8.

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NATURAL TREES AND VEGETATION.

PROTECTING THE WATERCOURSES.

The first of a series of lectures on the tree and plant life of South Australia was delivered by Professor T. G. B. Osborn, at the Prince of Wales Theatre, Adelaide University, on Tuesday evening.

The lecturer said the branch of botany known as ecology, had received particular attention during the past 20 years. It entailed the study of plants in their natural surroundings, and was sometimes called plant sociology, for it recognised the presence of communities of plants the members of which were linked together just as in human society, and in which there were the same varying conditions of progress. The plant sociologist was chiefly concerned with the conditions influencing the progress or retardation of the plant community under investigation. Under the most favorable conditions this plant community reached its highest level or climax, just as a community did, but when some disturbing element, such as a bush fire, occurred the plant community was disorganised, and after the destructive period had to reconstruct itself, naturally at a much lower level, from which it might possibly advance once more to its former level. If the disturbing elements recurred, however, they might result in an entirely new state of plant society modelled by its necessity of conforming to the new conditions. The settlement of man was one of the most disturbing factors of all.

Within 30 miles of Adelaide there were two plant communities which had reached their climax. One was the stringy-bark forest of the Mount Lofty Ranges, and the other the trees of the open woodland, such as prevailed at Torrens Park, at Urrbrae, and in the Mount Barker district. Each type was essentially the outcome of conditions of rainfall and climate, and both were true forest types. There was a time when the Mount Lofty Ranges were massed with stringy-bark from Williamstown to Cape Jervis, where there was rainfall of 30 inches a year, and where other conditions were favorable. After a bush fire the stringy-bark forest recovered rapidly, and it was worth noting that bush fires had probably swept them long before the white man's advent. The graceful ti-trees were present near the water, and in much swampy country there appeared to be an absolute rolling waste of ti-tree and grasses. The dwarf she-oak represented another section of society, just as the stately red gum represented the royalty of Australian forests, of which the beautiful blue and yellow gums were the queens. A vast problem in economic exploitation was presented by the dense patches of scrub-land in the ranges.

Human interference had already altered to a remarkable degree the extent of the forest communities. The stringybark forest had been destroyed in many places, and the same was true of the other trees. The destruction of useful trees had left them only the least worthy communities to rely upon, and, although there was little or no evidence that trees regulated the rainfall, they had much to do with controlling the moisture of a district. The destruction of the stringybark forests in the hills had meant that there was no vegetation left to stay the water on its headlong course down the watersheds after the heavy winter rains. The result had been that Adelaide suburbs had been flooded through the overflowing of the surcharged creeks from the hills. The conservation of the forests in what was obviously forest area would certainly reduce the damage thus caused year by year.

In attempts to develop the country the woodland had been destroyed, and foldering grass had been planted in its place. Such grass, however, frequently disappeared when manuring ceased. There was room for a tremendous amount of experimental work in this direction in South Australia, and manurial treatment and the introduction of new fodder plants to the State both deserved attention. It was interesting to note that even after planting with clover, if the land were left alone, the natural South Australian type of vegetation would reassert itself. He was extremely grateful to a Mount Barker landowner, who had placed an enclosure of such land at his disposal that he might study this reassertion of the natural grasses.

The lecture was illustrated throughout with an interesting series of lantern slides, showing many beauty spots in the vicinity of Adelaide.

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MR. H. W. LUSHEY.

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Mr. Harold M. Lushey, who has been chosen as president-elect of the Public Teachers' Union, was born at Alberton in 1884, and received his early education at the Hindmarsh model school, under Mr. Charles B. Whillas. After leaving school at 13 years of age he had five years' experience at clerical work, chiefly in the offices of Messrs. G. E. Fulton & Co. Adelaide, and Messrs. G. Wood, Son and Co., Fremantle. At the age of 18 years he entered the service of the Education Department of Western Australia, and after passing through the normal school at James-street, Perth, received his teaching certificate in 1903. The next seven years were spent in gaining actual experience in the Fremantle boys' school, Subiaco, Brown Hill, and James-street first-class schools. He also had charge of small schools at Nangeenan and Rockingham. In 1911 he returned to South Australia to take the arts course at the Adelaide University. The task of passing the matriculation examination and 12 units in a degree course is a formidable one for the student who is in a position to devote all his time to the work, but to one who is engaged in professional duties from day to day it is a feat that requires application and grit. Mr. Lushey graduated in 1923. On the practical side he has spent four years in the Unley public school as an assistant, two years at Port Pirie as chief assistant, three years at Flinders-street as chief assistant, and three years at Currie-street as chief demonstration assistant. He has also acted as locum tenens for head teachers at Basket Range, Forest Range, Gumeracha, Marryatville, and Wellington-road public schools and is now engaged as a lecturer in the Teachers' Training College, North-terrace. Mr. Lushey has for some years been an active worker on the executive committee of the Public Teachers' Union. For two years he has been treasurer. He is one of the delegates representing the teachers on the South Australian Public Officers' Federation, having filled the vacancy caused by the retirement of Mr. J. H. Williams, now an inspector of schools.

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THE DAWES REPORT.

Its Momentous Aims.

(By A. L. G. MacKay, M.A., B. Econ., Dip. Ed., Fellow of the Royal Economic Society.)

The report compiled by Gen. Dawes, or "Hell and Maria Dawes," as he is familiarly known among his friends, is the most important document that has been published since the Versailles Treaty. It represents, as did the treaty, the synthetic essence of economic opinion prevailing at the time, but there is a certain difference, in that whereas the treaty is a manifestation of economics tempered by politics and emotion, that latter is economics tempered by financial considerations. The report itself is divided into two parts, both of which are signed by all members of the committee, and these two parts are supplemented by nine annexes, as they are called, all of which are unsigned, except No. 3. The annexes represent the facts upon which the generalizations in the report are based.

The covering letter to the report is touched by certain moral and semi-devotional phrases; there are references to justice, liberty, and fairness, and a statement that each member of the commission was a free agent in the matter of his vote and opinions, while the closing lines place the report in the hands of the Reparations Commission with the statement that the committee prays that it may be of assistance to the commission in the discharge of its high tasks. With these preliminaries out of the way, the report then gets seriously to business with the following aims in view:—(i) That the object of the report is the recovery of debt, i.e. it assumes the justice of the indemnity. (ii.) The reconstruction of Europe, and not of Germany in particular. (iii.) That there shall be economic and not political guarantees. Part 1 of the report is concerned with the outline of the plan of the committee. Part 2 indicates the considerations that led to the formulation of the plan in part 1. Part 3 consists of the nine technical annexes.

The purpose of this article is to set out the essence of part 1, and to make certain comments thereon. The plan in part 1 consists of the following:—(a) Machinery for the stabilizing of the currency; this, it is claimed, is secured by a return to a gold basis (the gold to be lent to Germany) with specific control of note issue and inflation. (b) A scheme for the balancing of the Budget. This is secured by i. The provisions of currency stabilization. ii. An increase in taxation. iii. The inclusion of annual reparations payments in the Budget expenses. (c) Provision for the increased productivity of the German industrial machine, in which the Allies are to share. This is secured by what is called an "Index of prosperity" and the division of Germany's potentiality into three sources, taxes, railways, industrial debentures. (d) A series of guarantees should Germany continue to default. These consist of claims upon railways and industrial bonds, and in addition the following sources of guarantee are indicated—alcohol, tobacco, beer, sugar, and customs.

In order to secure the smooth working of the above arrangements, the following organization is set up:—(1) There shall be a transfer agent, who shall preside over the transfer committee. This agent will, it appears, be intermediary between the reparations committee and the organization which is to secure German stability and reparation payments. (2) Subsidiary to the transfer committee are set up four officers:—A trustee for railway and industrial bonds, a commissioner of railways, a bank commissioner, a controller of revenues, and of these the central and fundamental unit will be the bank which will be a private bankers' bank exempt from Government interference, and which will base its stability upon gold—800,000,000 gold marks or £40,000,000 being advanced for the purpose.

Observations.

(1) It is specified that at the end of five years, from the commencement of the operation of the plan, that the sum of 7,670,000,000 gold marks shall have been paid, i.e., £387,500,000, and that this shall be an inclusive amount. (2) From this time forward a sum of 2,500,000,000 gold marks (£125,000,000) plus a supplement to be computed on the "Index of prosperity" shall be the annual contribution. (3) The annual payments are to be raised in gold marks and paid into the bank. (4) The foreign creditors may then take their share in converted currency, or they may leave the amount to their credit in Germany.

Criticism.

While admitting that the report constitutes a considerable advance upon all previous attempts to solve the problem of reparations in that its requirements are more within Germany's reasonable capacity, there are the following comments to be made upon it. 1. Though there is a limit placed upon payments for the first five years there is no limit imposed after this. 2. Though there are provisions against inflation as regards the relation