

AFFORESTATION.

Views of Mr. H. H. Corbin.

At a recent meeting of the Mount Barker Agricultural Bureau Mr. H. H. Corbin, B.Sc., of the Adelaide University, delivered an interesting lecture on afforestation to a large audience.

At the outset Mr. Corbin said he would explain what he could regarding the timber industry, especially with respect to Australia and South Australia. He contended that all spare lands should be in timber the same as the agriculturist had his land in wheat and other grain crops. All the people in the Commonwealth were interested in timber, either directly or indirectly. There would come a time when Australia would not be able to import any more timber, but be thrown upon her own resources. That time was approaching quickly, and unless adequate steps were taken to ensure the supplies for the future Australia would be in a bad way in that regard. The supplies in America—whence the bulk of the imported timber came—were being rapidly cut out.

Analysis of Values.

Mr. Corbin said that forest lands comprised two classes—natural forest and plantations. The natural forest consisted of:—(a) Lightly timbered areas with only a small quantity of timber, fit only for grazing and as a protection cover from erosion, 114,108 acres; (b) fairly well timbered areas, which have been cut out but still contain good merchantable timber, 30,000 acres; total natural forest area in acres, 144,108. The plantations consist of:—(a) Experimental plantations for demonstration purposes in various parts, 1,918 acres; (b) plantations carrying merchantable timber—1. Hardwoods not fully matured and not valued, 7,765 acres; 2. pure plantations, value estimated below, 6,882 acres; total plantation area in acres, 15,880 acres; total area of forest lands, 150,991 acres. The value of areas was as follows:—Natural forest, area carrying merchantable timber at a conservative value of £5 an acre, 30,000 acres, £150,000. Pine plantations—(a) Area of pines now fit for sale or milling, 25 years old, 240 acres, £30,400; (b) area carrying pines from two to 24 years old, worth at least £150 an acre when 25 years old or its proportionate value per acre per year, 6,352 acres; total area of pine plantations, 6,592 acres. Free distribution of trees:—Trees issued gratis for 38 years, 10,000,000, which at usual sale rates for various classes are worth, which is a fair entry to credit, £120,000; add revenue for 1876 to 1919, £246,841; total value, £567,241; less expenditure for 1876-1919, £433,443; leaving £133,798. This does not include the value of permanent improvements, £26,798. The value at which the pine plantations are estimated is a very conservative one on purpose to be on the safe side, but on that it will be noted that the area of 6,592 acres as the pines mature will be worth an aggregate of £1,143,300 net. It is thus clearly shown that a vigorous policy in this direction is highly desirable, a safe return being assured.

A Million-Acre Forest.

The speaker continued:—The main questions which, to my mind, need clearly answering in connection with forestry in South Australia are as follows:—1. Why do we need forests? The answer to this question is obviously that we must have raw material for the use of our industries which are incessantly increasing in numbers and extent, and further, for general use about the State. Forests, moreover, have many other uses. 2. Can that raw material be obtained from elsewhere than in the forests within the State? Yes, at constantly increasing prices, and at considerable expense to the State. For instance, a year previously to the war this State imported £440,000 worth of raw timber, £107,000 of paper, and £20,000 of smoking pipes. 3. Can this or as good raw material be produced in this State?—Yes, it certainly can. We can grow in our forests as good timber as grows in other countries, and as in as short a time. 4. Can this raw material be produced economically?—There are all shades of forest land, but well-managed forests produce sound monetary returns. 5. Will this State be in a position to import throughout all time?—This is very improbable, as the forests of the world are being reduced, and the world's population is increasing, and, moreover, the population individually is using more and more timber, and so on, as time goes on. The general opinion is that there will be shortage of timber. The good sense of humanity is the only possible hope of salvation, and taking time by the forelock, is essential in this matter.

Sound Economy.

Mr. Corbin summarised his contentions thus:—Forests are necessary to this and every State where they are physically possible. It is economically sound to produce forests produce in this State rather than pay out large sums. Woods and forests so successfully successful in South Australia provided they are under sound management. It may also be said that a good profitable forest crop can be grown on land which might otherwise continue waste land; as in the land at Gasecoyn, and the case of the Maritime pine. Questioning the case further it might be asked:—Why should South Australia buy a million acres? Some 10 to 20 years ago South Australia imported 7,000,000 cubic feet of

timber, to say nothing of what she grew and used over and above this. In 10 to 20 years we shall at least use 10 times this. We shall require at least 70,000,000 cubic feet of timber. Now in more or less cultivated forests 70 cubic feet is a good yield an acre a year. Hence to grow 70,000,000 cubic feet a year we must have 1,000,000 acres of good, more or less cultivated, properly stocked forests if we are to make any impression economically. The 1,000,000 acres is simply essential for the prime milling timber, it takes no account of necessary fence posts, fuel, or other forest products such as gums, resins, tanning bark. Where are these forests to be?—They should be scattered about the State in the heavier rainfall areas. How much forest land is there in South Australia? We have nine million acres of land in the 20-in. and upward rainfall area, 2,600,000 acres in the 25-in. and upward rainfall area, and more than 750,000 acres of land with a rainfall of 30 in. and upwards. One million acres, therefore, is only 11 per cent. of the area of the land in the 20-in. and upward belt. A small percentage to devote to forests. How is this State to develop at least 1,000,000 acres of forest?—The Government is developing the forests as it sees fit. The private owner of land and forests must do the rest. What are the chief agents to induce the development of forests?—(a) Adequate compensation in value realized for growing forest products; (b) stimulating public opinion, education to enable the producer to develop the best material, and obtain as a result the highest prices. The first will undoubtedly be realized in the future as in the past. The second is a matter of great moment. We know nothing sylviculturally about our forest flora. We do not at present know how best to grow any one forest tree in the order of a forest crop. Much research and experiment is essential to get to a state of tolerable efficiency. The necessity for a scientific force in sylviculture is as great as it is in the sister subject, agriculture. What has science done for the farmer and the State? What can science do for the owner of wood lands and the State? Forests and wood lands are a valuable asset, whether State or privately owned.

Steadily Increasing Value.

Forests have a steadily increasing value, both in cash and scarcity value. Forests are particularly needed in South Australia, with its large area, increasing population, and lack of adequate properly established forests. Forests of softwoods are easily established, given the right class of land and the money. Softwoods are in great demand for a multiplicity of uses, and are practically all imported. Softwood forests overseas are decreasing in extent and productive capacity, owing to ravages of man and fire, and lack of

power to restrain on the part of the Governments. Properly established forests here are likely to be of great value in the years to come. Forests can be protected against fire. This year fires had approached the pine plantations in two forests in the State right up to the edge, but have not destroyed one pine tree, or done any damage in the protected forests, only in the unprotected natural native forests. In all well-managed forests fire protection is carried out at all times of the year, and the result is that when a bushfire gains headway outside, it is stopped at the boundary of the protected forest. There are innumerable instances of this, and in this State since the commencement of forestry not one-tenth per cent. of area or value has been lost. The fire menace does not exist in a well-designed and regulated forest. Forests are somewhat expensive to establish, but once established are cheap to manage and practically renew themselves on cutting, and the future cost of establishment is only a fraction of the initial costs; for example, one crop, upon being removed from the wood, automatically clears the ground, and in many cases, as in the Pinus maritima, the area becomes stocked with seedlings, which germinate from the thousands of seeds dropped by the previous crop. Forests grow while we sleep. Thinnings defray at an early age the initial expenses. Those who own shares in forests, or who possess forests or woods, are benefiting their country, and are usually well paid for their enterprise. Many companies and landholders in Europe have their own forests, apart from State forests.

Favourable Growing Conditions.

At the conclusion of his remarks, Mr. Corbin answered questions. Mr. P. Wise asked if the people that were cutting out their forests and exporting most of their timber were not replanting. In reply Mr. Corbin said that all were doing their best to fill the gaps, but in some cases they were making a poor "fist" of it. The chief trouble was that they were not controlling the fires. Again, the actual replanting was only a flea bite to the way they were cutting. They were, however, beginning to take a serious view of it. One time it was said of Canada that she had inexhaustible timber forests, but one did not hear it now. They were planting as many acres of forest as they could. South Australia compared favourably with the Canadian conditions for growing timber, for it had a greater length of light and much more warmth, both of which were necessary to rapid growth. Much more could be done in South Australia with the same area than could be done in Canada.

Soft and Hard Woods.

Mr. H. Hunt asked which was the most suitable softwood and the most suitable hardwood for the Mount Barker district.

Mr. Corbin said that the best softwood was undoubtedly the Insignis pine. He had seen great results from well-grown pines of that variety. An acre of Insignis pines 12 years old was a great proposition. At 16 years £16 or £17 had been made in thinnings. That class of pine was the best revenue producer. Another good pine was the Corsican pine. It would do well on poor and rocky country. For sandy country the Maritima pine was the most suitable. As for hardwoods, the blue and red gums were the best. The red gums could be profitably grown on land utilized for other purposes, such as grazing, while the blue gum would grow well on rough country. The Tasmanian blue gum was also a rapid grower, and if they lived for 20 years they would be a good proposition. But before deciding on what tree was to be grown, general conditions had to be studied, and the ultimate objects of the grower would also have to be gone into. In country like that round Mount Barker it would hardly be profitable to grow them. Softwoods, however, would be a highly profitable proposition, and would bring in a good revenue.

Other Questions.

Mr. Stephenson asked if the local blue gums were not more susceptible to white ants than other trees, but Mr. Corbin said he thought that the reason they were attractive to the termites was because the trees were over matured. Nevertheless, the fact remained that they were more susceptible than other varieties. Mr. Pope asked Mr. Corbin if he would recommend cutting out good stringy barks and planting Insignis pines. The lecturer said that that was largely a matter of the wish of the owner of the land. If an even start were given the Insignis would return considerably more revenue than the stringy. The stringy barks required much more room than the pines—perhaps three to four times as much. Mr. Pope asked if the two trees mixed in a forest would give a good result, and Mr. Corbin said he thought it would give as good as, if not better than, the one. Mr. Pope—Is it right that stringy bark country will not suit pines? Mr. Corbin—Not necessarily so. Mr. Pope then asked how far apart should pines be planted, and Mr. Corbin replied to the effect that the best distance was from 6 ft. 6 in. to 7 ft., if the thinnings could be sold. By planting 6 ft. 6 in. one could plant 1,071 pines to the acre, and 7 ft. apart about 900. One could now get 10/ per 100 super feet for the thinnings down to three inches. Spacing depended upon the class of the land. Good land would grow trees quickly, and maturity would be reached earlier.

Combating Scrub Growth.

Mr. Pope asked whether close planting killed undergrowth—scrubby stuff. Mr. Corbin said that in scrubby country the best thing to use was the stump-jump plough. Scrub retarded the growth considerably. The young pine was a delicate thing to combat the strong scrub growth. After the pine had established itself properly it would make headway, but in the early stages there was a likelihood of the young trees being choked and spoilt. It would be far better to put the plough through the scrub first. It would save a lot of time. The Maritima pine was a good one for scrubby country, and the lecturer quoted instances of where it had been tried with great success. Mr. H. N. Bell spoke of the Australian Hardwood Company, and asked the speaker if the company were replanting where it was cutting out the native timber. Mr. Corbin informed him that the Hardwood Company was doing very good work. They were cutting out forests where there were not enough trees, and clearing country in preparation for the planting of a much bigger number of trees than originally occupied the same country. At the present time they were establishing good softwood forests—16,000 acres—and were spending whatever money they could on new forests.

Time to Plant.

Mr. Stephenson asked what was the correct time to plant pines in Mount Barker, and if a new tree could be planted in the same place as one had been taken from. Mr. Corbin said that the correct time to plant pines was as soon as possible after the first rains in the autumn. The soil was warm as well as moist, and the young tree had a chance to firm up before the cold of winter set in. In damp places the pines could be planted in as late as October, but the earlier planting was advantageous. With regard to planting a pine in the same place as one had been taken from, it was quite all right to do so. Trees consisted of oxygen, hydrogen, and carbon, with a small percentage of mineral matter. The first three were taken from the air, and thus did not rob the soil at all. From shed needles and other droppings the ground was mulched, and, if anything, the soil was better for the tree's growth, the tree returning much more to the ground than it took out. Mr. Stephenson subsequently explained that what he had in mind when he spoke was the fact that some time ago pines were taken out of the row in the showgrounds. It was recently decided to replace them by young pines. How close could they go to the older pines? Mr. Corbin said, in reply, that he misunderstood what had been meant when he said that it would be right to replant in the same place in a case of the kind in question. The further away they could get the better in

that case. Trenching all round the young trees might do a certain amount of good, but the trenches would have to be kept clear. The roots of the older trees would find their way to the younger ones and would take all the goodness from them, and the latter would have a pretty sick time. Mr. E. F. Stevens said that, as Chairman of the Mount Barker District Council, he had frequently brought up the matter of the advisableness of planting all the back roads with timber. In future years it would prove a valuable asset to the district.

Mr. Corbin Congratulated.

Mr. H. N. Bell, in moving a hearty vote of thanks to the speaker for his entertaining chat, referred to Mr. Corbin's appointment to the Chair of Forestry at the Auckland University, New Zealand. He was sorry the State was losing such a valuable advocate of afforestation. He wished Mr. Corbin every success in the new position. Mr. J. E. Smith supported, and Mr. Stevens moved that the Mount Barker Bureau, as a body, express its good wishes for Mr. Corbin's future. In acknowledging Mr. Corbin said that forestry in South Australia would assume big proportions. The Legislature would some day wake up to the fact that it was a most necessary thing, but at present there was a profound ignorance of the subject. There was not the slightest doubt that there was money in timber. He thanked the speakers for their reference to his appointment to the Auckland University. It was a great promotion for him. At the same time he was sorry to leave South Australia and many of his pet schemes, including the Kuitpo Forest, and others in the making.

REG. 18-6-25.

COMMERCIAL EDUCATION.

In the June bulletin issued by the Adelaide Chamber of Commerce the attention of members is particularly directed to the following resolution carried at the twenty-first annual meeting of the Associated Chambers of Commerce held at Melbourne recently:—"That this conference strongly urges business houses to encourage, and enable as far as possible, members of the staffs to avail themselves of the opportunities of commercial education which are now afforded them by the universities. That this conference considers that it would be advisable for those in charge of the commercial courses at the various universities and technical schools to take steps to standardize their work in the interests of commercial education generally." The bulletin adds:—This chamber has always interested itself in the establishment and extension of facilities for higher commercial education, in the strong belief that such facilities are essential to the development of trade, commerce, and production, and consequently the progress of the State generally. The resolution is commended to members, and it is hoped that they will do everything possible to encourage the members of their staffs to take advantage of the opportunities existing at the University for commercial education. The resolution was forwarded to the council of University, and a reply was received expressing gratification that the conference had decided to urge business houses to encourage commercial training among their staffs, and that this policy had been followed by the council since the establishment of the commercial school at the Adelaide University in 1902. In regard to the standardization of work in the interest of commercial education generally, it was not proposed to establish a Degree of Commerce at the University, but up to the standard required for a diploma, the council would take care that the standard corresponded with that elsewhere established.

ADVERTISER 18-6-25

The approaching departure of Dr. Heaton for Canada was referred to by Mr. Justice Angus Parsons when presiding over a meeting to hear a lecture delivered by Dr. Heaton on Anglo-American relationship, at the Victoria Hall, last night. Dr. Heaton, his Honour said, had been in Australia since 1917, and had learned to become a good Australian. The influence of Dr. Heaton could hardly be exaggerated. Through his work at the University of Adelaide in connection with the Workers' Educational Association there had been a great stimulus given to the interest taken in the study of economics and political science. There were no fewer than a thousand students attending lectures in political economy and economics generally and political science at the University and at centres in various parts of South Australia. The man who had created this was Dr. Heaton, who unfortunately they were soon to lose. He had just been round the world, and they had been hoping still further to enjoy his literary attainments, his gifts as a speaker, and his profound knowledge, but this was not to be. They could only hope that when enduring the rigors of the Canadian winter Dr. Heaton might turn back and think of so many warm-hearted friends he had made in Australia, and be cheered and warmed by the recollection. Dr. Heaton, in acknowledging the compliment, said he felt sure the remembrance of his friends would prove an efficient system of central heating.