

143 millions, and exports were worth seven millions. Each year South Australia procures timber worth roughly £372,000, about one-third of which comes from the other States. Australia's importation figures are steadily rising; while, according to Mr. Corbin, its timbered areas are decreasing owing to the inroad of settlers establishing farms and grazing paddocks. "Much land is, however, only suitable for forest, but hitherto fires and vermin have wrought great destruction. It should be the aim of every one to conserve these natural forest areas from unnecessary destruction, so that in time they may yield a proper revenue and be a national asset." Public co-operation with official activity is essential to the fulfilment of that ideal.

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AFFORESTATION

INTERESTING FACTS AND FIGURES

WHAT CAN BE DONE IN SOUTH AUSTRALIA.

A report of more than passing interest is that which has been prepared by Mr. Hugh H. Corbin, instructor in forestry to the Department of Woods and Forests, South Australia. Under the heading, "Facts and Figures Concerning Forestry in Australia," Mr. Corbin touches upon subjects which are well worthy of perusal, having, as they do, direct reference to a matter of the very greatest importance to the State. South Australia is only now in its swaddling clothes, as far as afforestation is concerned, and Mr. Corbin's report is an argument in favor of a more vigorous policy in regard to the care and cultivation of our timbers.

According to figures submitted by Mr. Corbin, the total value of timber, as declared at the Customs, imported into the Commonwealth during the period 1901-1910, equalled 14.55 millions sterling, whereas the total value of timber exported during the same period was only 6849 millions sterling. The value of timber imported is increasing yearly, but the export values do not show anything like a similar increase. South Australia alone has imported from over the sea during the period 1905-11 1843 millions sterling worth of timber. The average annual importation is well over £542,248 worth, and is increasing rapidly. Mr. Corbin does not say so, but it is fairly well known that the value of timber exported is practically nil. There can be no stronger argument in favor of afforestation than the fact that the world's timber-yielding forests are decreasing in number and extent, while the population of the world is increasing rapidly. Progressive countries are conserving and afforesting on scientific business lines, and not allowing a few mercenary individuals to dissipate by wasteful methods the national wealth represented in timber, the destruction of which causes deterioration of the land and crops.

The main objects of forestry to be achieved in Australia are:—(1) To carefully develop in commercial quantities the indigenous timbers which are suitable for commercial purposes; (2) to carefully establish and develop exotic timber trees which will grow in the various States, also in the choicer localities develop the choicer species in order to produce as much variety of timber as possible. In view of the costly importations the two lines of work here mentioned are most important; (3) To develop the utilisation of these timbers and the best methods of seasoning and treating by impregnation the more pervious and inferior species to render them more durable. 4. To draw attention to the possible by-products of the forests and the possible subsidiary industries. 5. To introduce a proper and comprehensive system of education in the matter of trees in order to stimulate public interest in the work of tree culture. 6. To improve the climatic conditions locally and conserve the rainfall as much as possible.

Exhaustion of Supplies.

Already several species of timber are practically exhausted—English oak, ash, birch, beech, walnut, small and inferior Oregon pine are shipped now. Instead of the superior quality and more or less knot-free pine, Baltic deals and knotty small trees are only available. New Zealand kauri will only last about 15 years at its present rate of consumption. Jarrah and Californian redwood are heavily exported, and will become scarcer and more costly, and eventually disappear as an article of commerce. The general deterioration of forests, and hence the increasing difficulty of getting good timber at reasonable prices is common knowledge to those interested in timber. It is difficult to predict the state of affairs which is likely to obtain, say, in 20 years' time; but there seems every indication that good timber land will get more and more valuable and that most countries will be forced to invent wise policies with regard to timber production, and will undoubtedly be conserving and planting on areas which are capable of yielding high returns of timber on some of their best land for production of the timber of the future. With modern scientific methods forests offer a very sound investment.

What South Australia Can Do.

Australia grows some of the finest hardwoods in the world. In Australia there are many extensive valuable forests which must be looked to ultimately to provide timber in the place of imports. Australia has the advantage of a variety of climates, and should be able to provide timbers which, though not identical with those imported, should be quite as satisfactory. South Australia, although not so densely wooded as some of the other States, is yet quite capable of producing timbers in sufficient quantities and of such nature as would replace the greater part of the enormous importations. There are many localities in this State where the soil and climatic conditions are such that a great variety of species is possible. This is rendered obvious by the fact of the presence of fine specimens of trees here and there about the country. The argument that some of the choicer species do not grow as quickly as some of the other species is poor, because quick-grown timber is necessarily lighter and inferior. Moreover, a variety of species is essential since it is certain that one species cannot serve all purposes. The great point is for Australia, and especially South Australia, to make the most of these choicer localities where valuable timbers can be produced.

Forestry and Labor.

Another matter of great importance is labor. Labor is a sine qua non even in forestry, and there is no doubt that with regard to wattle stripping it has lately been uncertain in South Australia. However, the question of labor applies to every industry. Prosperity and development cannot exist in the absence of satisfactory labor. It is clear also that it is as much in the interests of the laborer to help to develop the essentials of life, e.g., wood tanning bark, where with the leather for his boots may be made, &c., as it is in the interest of any other unit of the community. One of the great advantages forestry offers to the laborer is it provides a very congenial, interesting, profitable, and healthy way of earning a living, and supplies with raw material many subsidiary industries in which his fellows may seek employment. Forestry may be managed so as to provide continuous and steady employment throughout the whole year.

Forestry assists in the development of the land and tends to relieve the congestion of population in the towns, and this is one of the most important matters of the present day, especially in a new country such as Australia.

Revenue.

Planted trees take some time to produce revenue, and South Australia is the largest planter and will no doubt receive a return in a few years which will more than justify the outlay. At present the receipts are small. During 1910-11 the amount received by the State Forestry Department was £3756, while the expenditure for the same period was £20,968. The expenditure is greater than the revenue owing to the extensive planting operations. The revenue is, however, on the increase, and when some of the young plantations are a little older greater revenues will be forthcoming. Eventually each reserve to justify its existence must produce reasonable revenue, either directly by sale of produce or indirectly by preventing erosion, &c.

Subsidiary Industries.

There seems to be no reason why South Australia should not in years to come

derive a substantial revenue from the manufacture of resin, varnishes, and turpentine, all of which are by-products from timber. There are no figures available relating to the important eucalyptus oil industry, but, nevertheless, there are a number of very crude stills working at certain times during the year and making crude oil from the scrub eucalyptus, botanically known as *E. eneoritolia*, on Kangaroo Island. From reports it is to be gathered that there is scope for improvement and development in the matter of extracting the oil from the mallee, especially since the island is poor in many respects.

Charcoal a By-Product of the Forest.

The following is a note by Mr. V. H. Ryan, the Intelligence Officer of South Australia, on the matter of charcoal. The statement is particularly useful, especially in the light of the fact that whenever a wood is felled the crowns and side branches are practically valueless. In this country many square miles of timber are wastefully burnt. However, the trees are of little use except for firewood. Mallee roots are said to make excellent charcoal, and could therefore be, during a slack time, utilised for charcoal making. Charcoal is a light product and easily and cheaply transported. The production of charcoal might therefore be worked up into a minor forest industry:—

"In the past the chief demand for charcoal has been among tinsmiths and ironworkers, but with the introduction of gas-producers another outlet has been opened up which promises to create a brisk market. While the demand was comparatively restricted a few burners could supply all that was needed, and it is partly due to this fact that charcoal-burning has not been extensively pursued in South Australia. In consequence of the low production the price has remained firm, and, as the consumption has increased, importation has been resorted to. During the last two years 260 tons have been imported, mostly from New South Wales. The Government departments of this State now use about 100 tons of charcoal per annum, and the chairman of the Supply and Tender Board states that the demand is on the increase. The prices of recent contracts range, according to the wood used, from £2 to £2 15/ per ton. If the commodity were produced more extensively and placed on the market at a reduced price, there is little doubt that it would displace coke for certain purposes in many city establishments and factories. At the settlements along the River Murray several retorts are employed burning charcoal for gas production as a motive power for the pumping machinery. The industry is worthy of serious attention by the landholders of South Australia. It offers an opportunity of converting all surplus wood into an item of profit; and, further, the conservation of the by-products of wood distillation presents a splendid scope for enterprise, as many of them are in great demand throughout Australia."

Paper Manufacture.

The importation of paper in Australia is enormous, and it is well worth considering what might be done in the Commonwealth to produce it. In South Australia the drain on the supply of raw material grown here which would be suitable for papermaking, except, perhaps, the very roughest kind, would be much too severe.