

3. **Sylvicultural Nurseries and Plantations.**—The growing recognition of the necessity for systematic sylviculture has led to the creation in most of the States of a number of sylvicultural nurseries and plantations.

(i.) *New South Wales.* In this State a small forest nursery is maintained at Gosford, between Sydney and Newcastle, from which young trees are widely distributed throughout the State, the bulk being issued to municipal councils and farmers, and for planting in parks, town reserves, hospital grounds, and cemeteries. Large sums have been distributed by the State in improvement fellings and the thinning out of young timber, principally in the Bogan, Narrandera, and Murray River districts. Over a quarter of a million acres of pine forest and red gum have been so treated.

A nursery has been established at Acton Homestead, which has been resumed by the Commonwealth Government. Excellent progress is being made. It is considered likely that in the near future there will be a plentiful supply of young trees and shrubs for planting out in the new Federal Capital city.

(ii.) *Victoria.* In Victoria there are three forest nurseries, situated at Macedon, Creswick, and Frankston. At Macedon the arboretum contains many fine specimens of the conifers and deciduous trees of Europe, America and Asia. While the bulk of the yields are retained for the State plantations, there are considerable distributions for public parks and recreation reserves, "arbor-day" planting of streets and roads, municipal councils and water trusts, mechanics' institutes and libraries, cemeteries, State schools and other institutions, and farmers and private persons, the applications of those in dry districts receiving first consideration.

Among the principal native hardwoods raised and distributed are blue gum, sugar gum, and tallowwood, with some jarrah for the plantations; among conifers, the Monterey, Corsican, Black Austrian, Canary Island, Maritime, and Aleppo pines, the blue pine of India, the American white and yellow pines, with several spruces; and among other exotics, peppers, Indian cedars, oaks, elms, planes, silver poplars, sycamores, and chestnuts. Great success has attended the establishment of a nursery for conifers at Creswick.

The principal forest plantation is along the lower slopes of the You Yangs, near Geelong, where about 1000 acres have been enclosed and planted with eucalyptus and conifers. Good results have attended the cultivation of the broad leaf and feather leaf wattles.

At another plantation, viz., at Sawpit Gully, among the foothills of the Dividing Range, near Creswick, conifers are chiefly grown. Minor plantations of blue gum and sugar gum are established at Havelock and Majorca, near Maryborough; and at Mount Macedon, the principal species of oak, elm, ash, plane, sycamore, pine, spruce, eucalyptus, and willows are planted. In recent years additional planting of conifers has been carried out at Creswick, Frankston, and Warrnambool, and a large area has been sown with tan-yielding wattles at the You Yangs.

The principal work in forest reserves and plantations is improvement thinning and felling, planting, fencing, and construction of dams. The planted area of some of the older plantations has been enlarged.

Officers of the Lands and Forest Departments have made joint inspections of portions of reserved forests, to discover what areas, suitable for settlement, can be excised from the forest and made available. As a result, the forests will suffer a further loss of 20,000 acres. The officers have also recommended the addition of large areas to the State reserves.

Recent legislation makes provision for the stricter control of grazing in forests, and for more efficient protection from fire.

(iii.) *Queensland.* In Queensland there is a forest plantation of 500 acres. The questions of replanting and further reservation have lately been attracting attention, and the prominence given to them will probably greatly influence forest policy.

(iv.) *South Australia.* In this State there are several plantations, the most important being at Bundaleer and Wirrabarra, situated some 150 and 190 miles respectively to the north of Adelaide in the direction of Spencer Gulf. Of the reserved area, a very small proportion has borne timber of commercial value, the remainder having been covered for the most part with stunted vegetation. Owing to the absence of high mountain ranges and dryness of the climate, the forests are not dense. Special attention has been given in South Australia to silviculture, and great success has been achieved in clothing areas of treeless plain and hillslope with belts of young trees, such as blue, sugar and red gum, and white ironbark. In some parts the Tasmanian blue gum (*E. globulus*) flourishes, but great success has also been attained with the sugar gum (*E. corynocalyx*), a tree indigenous to the State itself. It is found chiefly in the Flinders Range, and used for railway sleepers, telegraph poles, coachbuilding, and in wharf and jetty construction. Two other eucalypts found in South Australia, the white ironbark (*E. leucozydon*), known locally as "blue gum," and the grey box (*E. hemiphloia*) furnish strong, tough, and durable timber, inlaid in grain and suitable for the same purposes as sugar gum. The common flooded variety of red gum, which has a fairly wide distribution, being found on clay flats and along streams and water-courses, has also been grown in the plantations, but not with the same success as sugar gum. Among conifers which have been grown with fair success are the Monterey, the Maritime, Aleppo, and Stone pines. The Monterey pine (*P. insignis*) outstrips all other trees in growth, and its timber, though softer than other first-class pines, has been utilised for deal tables, packing cases, picket fencing, shelving, and generally for purposes where common deal is useful. The Maritime, Aleppo, and Stone pines are naturally of slower growth. In Europe they furnish useful timber, but in these plantations have not yet reached an age suitable for utilisation. The upright poplar (*P. fastigiata*) growing well over a large area, serves for packing cases, flooring boards, etc. The locally-grown American ash (*Fraxinus americana*) has been used in coachbuilding work, and compares well in quality with the imported American ash. The area suitable for its cultivation in South Australia is, however, very limited, as it requires favourable conditions of soil and climate.

During the last twenty-eight years the Forest Department has issued very large numbers of young plants to the public free of charge, for wind breaks, avenues, and for the shelter of homesteads and buildings generally, over eight million trees having been so distributed. Formerly, bounties were paid under the Forest Act for the encouragement of private planting of timber trees.

A substantial increase in the amounts voted for recent years has enabled great progress to be made in planting forest reserves, and a much larger area is now planted than has been the case for many years past. It is anticipated that on completion of the planting season nearly a thousand acres will have been planted. Re-afforestation by natural regeneration of a large area in the Penola State forest, under a thorough system of fire protection, has been undertaken.

(v.) *Western Australia.* A State silvicultural nursery is established at Drake's Brook, on the south-western railway, the site chosen being a ti-tree swamp, exotic trees of temperate climates being raised. The planting of the Monterey, Maritime, Aleppo, and Canary Island pines, the blue pine of the Himalayas (*P. excelsa*), the Indian cedar, Lawson's cypress, several kinds of poplar, the Virginian catalpa, white cedar, and American ash has been successful. A large number of pepper trees and sugar gums were raised, chiefly for shade purposes. The trees are sold or given away to settlers, being distributed chiefly in the goldfields region and other districts having little natural forest.

There are also two forest plantations where conifers, acacias, and sandalwood are cultivated, the trees making very healthy growth.

(vi.) *Tasmania*. There are at present only two small experimental plantations. In the State nursery a considerable area is being planted with softwoods.

Particulars regarding nurseries and plantations in 1911 are given hereunder:—

SYLVICULTURAL NURSERIES AND PLANTATIONS, 1911.

Particulars.	New South Wales.*	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.
Expenditure on plantations and upkeep of sylvicultural nurseries	£1,066	£9,216	nil	£19,411	£636	£250
No. of persons engaged in nurseries	11	22	nil	20	5	2
No. of sylvicultural nurseries ...	1	3	nil	7	1	1
Area of sylvicultural nurseries ...	85 ac.	54 ac.	nil	7 ac.	17 ac.	5 ac.
No. of forest plantations ...	3	11	1	107	2	...
Area of forest plantations ...	180 ac.	19070 ac.	500 ac.	9684 ac.	300 ac.	...
Extent of public distribution of trees or number of trees issued ...	39,000	30,000	†	516,000	58,000	5000

* A small nursery has also been established at Acton, Federal Capital Territory.

† There are no forest nurseries issuing trees in Queensland, but a small number of economic and ornamental trees are issued by the Department of Agriculture.

4. Instruction in Scientific Forestry.—A Forestry School, with adequate grounds, has been established at Creswick, in Victoria. The site is near the State plantation and nursery. General class-teaching is given at the school, but the principal aim of the Forest Department is to keep practical work in the foreground. The principal class subjects, in addition to theoretical forestry, are botany, geology, physics, and land surveying, while in outside work trainees will have regular teaching and experience in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. The desire is to give the prospective forester a thorough training in all branches of the work. Facilities are also afforded to members of the present forests staff to qualify in special subjects by attending winter classes. The school was opened early in 1911.

In September, 1910, an Instructor of Forestry was appointed by the South Australian Government, to assist the Conservator in forest inspection, and particularly to conduct a course in forestry at the Adelaide School of Mines.

Courses of lectures have also been given at various centres.

5. Interstate Conference of Australian Foresters.—In November, 1911, the first Australian Conference on Forestry was held at Sydney. All the States, except Western Australia, were represented. Regarding forest policy and forest legislation, it was resolved that special enactments were necessary to provide for the conservation, maintenance, and planting of forests; that such enactments, to be effective, should provide for the creation of permanent and inalienable reserves; that for efficient management, the appointment of a permanent authority, vested with statutory powers for administration and control, was demanded; and that the administration of forest and game laws could sometimes be combined with advantage and economy. Upon the subject of the education and training of forest officers, it was resolved that a high standard was essential for the successful pursuit of forestry; and that courses to give such training be held at schools founded for this purpose, and authorised to issue recognised diplomas and certificates. The resolutions regarding waste lands declared that the clothing of heath and moor lands, areas of inferior natural vegetation, etc., should be viewed as a national work; and that each State should make annual appropriations for most profitably carrying on the work. It was stated to be advisable that an association for the advancement of forestry, to be styled "The Australian Forestry League," should be formed. Other resolutions declared the necessity for immediate and concerted action in