# FINNISH FORESTRY FROM THE AUSTRALIAN VIEWPOINT

by

D. A. N. CROMER

It is not proposed in this paper to present a description of forestry in Finland, but rather to emphasise certain differences which exist at present between the policies of that country and Australia, and to point out some salient features which it is considered will eventually find application here.

There are many facets to forestry knowledge, and the number of subjects necessarily studied in a comprehensive forestry course is mounting steadily, as also is the coverage of each individual subject. This problem has recently been given some thought by educators and administrators in Australia, but in Finland the need for specialisation and concentration upon a more limited range of subjects has been realised to an extent that the Bachelor's degree at Helsinki University provides for no less than five different lines of study, viz., general forestry, swamp, technical, economic and commercial courses.(1)

It is noteworthy that student intake for the commercial course is 20 per annum, while for the other four courses combined intake is limited to 30.

In addition, sub-professional education is provided by two-year courses at several forestry schools, some of them founded by industry. Such organisations and training are badly needed in this country.

For many years concern has been felt that Australia's dedicated forest area will prove inadequate for our future population even under effective forest management. The difficulties involved in the dedication of further extensive areas are legion, and no large increases are to be anticipated. How then can the necessary forest area be achieved: The answer is provided by the situation in Finland, and which is also common to a number of other countries, viz. the mobilization of private forests. Of the total Finnish forest area only 34% is state owned,(2) and much of this consists of protection forests in the northern Lapland regions. The remaining ownership is divided as follows:

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| Private | ..... | 57% |
| Company | ..... | 7% |
| Communes and Churches | ... | 2% |

and of the private farm forests approximately half are under 50 acres in area.

It is recognised that a high proportion of Australia's current timber production comes from private property, yet to date no action of any consequence has been taken to conserve this resource, or even to assess the extent, quantity, quality or growth potential of the asset. Many countries have found it necessary to draw up laws regarding private forests in the interests of national economy, legislating against devastation of forested land and towards permanent and proper forest management. The United Kingdom has recently enacted a scheme for the dedication of private woodlands with this object in view. Finnish forest laws included measures for preventing the devastation of forests as long ago as 1917 and these laws were consolidated in the Private Forests Act of 1928. It must not be assumed that such laws

are harsh or intolerant of the freedom of the individual. They merely safeguard the conservation of the forest by forbidding treatment which might prevent natural regeneration, and the cutting of young forest in a manner inconsistent with rational thinning. Indeed with the experience of over 20 years they are now considered inadequate and that "the importance of forests to the national economy justifies greater demands on forest-owners,"(3) consequently a new and far-reaching forest act is in the course of preparation.

Mention should be made of the manner in which the private forests law is administered and supervised because this is not in the least dictatorial. The supreme authority is the Forest Service, which for this section of its activities maintains but a small head office staff. The direct responsibility rests with District Forestry Boards of which there are eighteen, grouped into two Central Forestry Associations. The Boards and Associations, though set up by legislation, are not government organs but work largely on government funds, while their members are locally elected. The Forest Service has no local forestry officials concerned with these activities, so the Boards and Associations employ graduate foresters and technicians for the purpose. Subordinated to the District Forestry Boards there are also Communal Boards. All these organisations are concerned with the promotion of forestry and especially farm forestry in addition to the supervision of the forest laws. It is noteworthy that forest owners have formed themselves into associations financed by a tax levied on members and providing them with technical advice on silviculture and management. At the same time there are also associations taking care of the commercial side, i.e. the sale of forest products of members. It will be seen that the system is based on an enlightened public attitude rather than the enforcement of rigid laws.

In Australia the need is now pressing for a national forest survey in view of our increasing local production of forest products and of the difficulties involved in obtaining adequate supplies from overseas. In contrast to this Finland will shortly embark on her third national survey, the first carried out between 1921 and 1924 and the second during 1936-1938. The original survey consisted of systematic stripping while the second was supplemented with circular sample plots. Growth was determined in these surveys by the measurement of increment borer cores. The question of methods of taking forest inventories is at present exercising the minds of foresters throughout the world, because two relatively new approaches to the problem are undergoing rapid development,

(1) the application of statistical methods; and
(2) the use of aerial photographs.

One objection to systematic sampling is that it does not allow of the calculation of a valid estimate of error, but it now appears that stratification through photo interpretation and random sampling within each stratum on a plot basis will meet the requirements of both foresters and biometricians. Finland has under consideration both the above aspects for her new survey probably commencing in 1951. Another feature of forest inventory work throughout the world is the increasing use being made of punched card accounting machines for the analysis of the accumulated data, and such equipment is considered essential by many workers.

In the realm of utilisation it is found that plywood supplies have become critical in Australia owing to the demands of our building programme and decreased supplies of prime quality peeler logs. Reviewing the position in Finland it can be stated briefly that excluding match factories there existed in 1946 twenty plywood plants producing 150,000 c. metres (approximately 340,000,000 sq. feet on a 3/16" basis) of plywood which has increased in succeeding years, and this flourishing industry has furnished the majority of its output for export. The significant feature, however, is that not one single log of the whole enormous input would meet the specifications for a peeler log in the Eastern States of Australia. The Finnish plywood industry is at present based on logs 6" - 9" mid-diameter or about the size of the cores at the conclusion of our peeling operations. Logs are first docked to six feet and peeled in large lathes to 4" diameter when they are again docked and turned again in smaller lathes down to 2" diameter. The lesson here is obvious and a pointer to what could be done particularly in the miscellany of smaller species in the rain forests of north eastern Australia.

Another feature of Finnish utilisation has been the integration of sawmill and pulp industries aiming at the reduction of waste. Sulphate pulp mills operating in conjunction utilise the waste from sawmills, and in providing at the same time an outlet for thinnings, lead to more efficient silviculture. A further development is an increase in the degree of finish of the products of her forest industries, accompanied by decreases in the quantities of round and sawn timber available for export, that is towards prefabricated houses, joinery, plywood, paper and cardboard rather than remaining at sawn timber and pulp.

Policy in Finland has for a considerable time aimed at increasing the productivity of her forest area by bringing poorly productive land into full production, reforesting land lying waste, and increasing the total area by afforesting non-forested land. Legislation first enacted in 1928 and extended in 1949, known as the Forest Improvement Act provides for an appropriation of funds for draining swamp lands and other afforestation measures. Two thirds of the financial allocation is directed towards private forests by way of loan issues at low rates of interest, the supply of seeds and plants, and the cost of inspection, supervision and tools. Another expression of this policy resulted in the enactment of a "law concerning the regeneration of forests of poor condition" which provided for heavy fellings in such forests aiming at the establishment of adequate regeneration and the commencement of a new cycle. It is not necessary to labour the contrasting position of our own "forests of poor condition" and their need for improvement.

Forest research work in Finland is conducted on a large scale with concentration and enthusiasm. The Forest Research Institute, housed jointly with the University Forestry School in an enormous modern building, comprises six sections, silviculture, mensuration, soil science, swamp science, forest economics, and forest technology. Each section is headed by a forester almost invariably of doctorate qualifications who is given the title of professor. Lecturing at the School, however, is on a voluntary basis. In addition, there is an Experimental Area Section which is

responsible for the management and exploitation of the experimental forests belonging to the Institute. The results of the Institute's research are published as "Communicationes Instituti Forestalis Fenniae" and by 1948 these had reached 36 volumes covering a total of 164 separate studies (4).

Independently the Society of Forestry carries out research work with the aid of Government grants and donations, while wood technological and wood chemistry research are handled by separate organisations.

The attention paid to forestry research and the very high level accorded to it in Finland is an example that could well be followed in Australia.

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1. -- The Associations, Education and Research in the Field of Forestry in Finland.

Finnish Forest Union 1949.

2. Ilvessalo,Y.The Forests of Present day Finland, 1949.

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3. Lihtonen,V. Finnish Forestry in Pictures 1949 (ed.)

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4. -- Forest Research Institute in Finland 1918-1948.

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