Forest Plantations in Norway

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In the matter of forest and other resources, nature has dealt more gingerly with Norway than we are led to suppose. Its northerly position and large areas with relatively high elevations, scoured by past glaciation, are factors unfavorable to the development of extensive hardwood or coniferous forest areas and to large agricultural activities. The absence of coal and the scarcity of most minerals have stood in the way of industrial expansion, and the generally very rugged topography has seriously curtailed railroad and highway construction. Consequently, the people have been forced to obtain a livelihood by fishing, ocean-carrying freight, stock raising, and to some extent by dairying and by the sale of forest products.

It is within the last quarter century that lumbering and the export of forest products have come to occupy a prominent place as a source of revenue, and it is realized more and more that in this field the future holds much promise.

The abundant water of the numerous splendid rivers furnish excellent transportation for logs, as well as power for the large saw mills and pulp mills operating at tidewater. The large merchant marine and open ports enable shipment to all parts of the world.

At present Norway's total forest area is nearly 18 million acres, an area equal to that of the State of Maine, composed mainly of Scotch pine and Norway spruce, which show an average yearly increment of 3.6 per cent. One-sixth of this area is owned by the state, the balance is in private hands. The forests occur almost entirely in the east land, centering around the Glommen, Drammen and Skien watersheds.

Receipts for exported lumber are now valued at 154 million dollars a year and equal as much as 35 per cent of all exports. With constantly increasing demands for lumber in other countries, this industry is bound to increase. Unquestionably, the forests are bound to occupy no secondary part in the nations business.

But on the west land, under the mild climate and copious rainfall fostered by proximity to the ocean and the gulf stream, are vast areas of land of good soil totally devoid of forests. These denuded and now unproductive areas, except for scant grazing, are said once to have grown a considerable crop of timber, which was exploited during the thirteenth and fourteenth centuries, without taking adequate
measures for proper reforestation. In fact, this occurred long before man began to study forestry problems or knew how this valuable resource could be made to yield a continuous revenue.

All in all, the increased demand for lumber for export and home consumption and the knowledge of the extensive unproductive areas have in recent years been responsible for a quickening of interest in forestry and reforestation throughout Norway. Men with judgment and vision have asked, "Can we not produce more lumber? What of the west land? Should we not find races of trees in America or elsewhere which will clothe the mountains even above the present low timber line?"

As a result of, and in line with these questions certain capable foresters were sent to study forest conditions and methods abroad. Herr Doctor Agnar Barth traveled extensively on the Continent of Europe apropos the establishment of a Norwegian forest experiment station and Herr Amtforstmeister Anton Smitt of Stavanger covered the length and breadth of North America to learn of new species of trees which might be suitable for Norway, and collecting seed for planting in the forest nurseries on the west land. It is yet too early to speak of the results of Forstmeister Smitt's investigations. The purpose in this article is rather to dwell briefly on the very promising results of reforestation on the west land to date.

For the earliest plantations we must go back fifty years to such pioneers as P. H. Paulsen, Gloersen, Mossige, and Carl Grude. These men obtained some help from the state, bought plants in Denmark and Germany in 1861, planted them on the denuded west land and watched them grow. Though the initial experiment faced the odds of a new soil and climate and damage in shipment, the plants took hold as if well satisfied and determined to make the best of it. More plants were soon bought and planted on a larger scale.

One of the most noteworthy examples is the 927 acres—a wasteland in Hoylands Herred—bought by the state for 160 kroner per acre, which since the time of planting has yielded in thinnings and improvement cuttings alone 160,000 kroner and a net rate of interest on the total investment of 12.9 per cent. A second good example is the Helland area at Bjerkreim; 215 acres of waste land obtained by the state for 20,000 kroner and planted with 221,500 German-grown Scotch pine and 21,825 spruce. While this pine is of a poor quality, the spruce is an object of pride.

These plantations of the early sixties and seventies have demonstrated the feasibility, soundness and wisdom of forest
extension work in western Norway and have been a source of inspiration for an enlarged program of forest planting. One very pronounced and most far-reaching impetus to this movement was the organization 25 years ago of the Forestry Association. This came as a direct result of the energetic leadership of Consul Axel Heiberg, a citizen of clear vision, patriotic purposes, unbounded enthusiasm and an unaltering faith in Norway and her forestry program. This association has above all else stood for an active reforestation program. It has been instrumental in awakening public interest in this cause, in obtaining financial assistance and securing the cooperation of numerous local organizations, particularly among the young people. This association employs 50 foresters, who give to land and forest owners guidance and advice on how to plant and care for their timberland.

The state and associations are working hand in hand. The state offers inducements toward forest planting in the way of loans, reduced taxes, etc. Several large forest nurseries are now under way, the largest of these at Ekhaug, near Bergen, with a total of 10 million young plants.

This glorious outdoor work has much in it which appeals to all patriotic citizens, and most of all to the young people. It is the feeling that they will live to see the forests grow in beauty and value, and the satisfaction that they are giving something of permanent value to their native land. It has, therefore, not been difficult to enlist the young people in this work. In the spring of 1923 no less than 10 thousand young men and boys went out to help clothe the bare hills with green trees. Now the boy scouts of Norway are also lined up for their work which will be to gather cones, which will furnish seed. Even those of too tender years for planting and seed collecting contribute toward this cause by weeding and transplanting in the forest nurseries.

By way of accomplishment, this forest association, with all its ramifications and affiliated organizations, numbers over 14 thousand members. There are 19 sections of the association and 420 local clubs. The latter have, during the 25 years that are passed, raised 2,411,000 kroner and the main section, 2,120,000 kroner. Up to 1921, 1,710,000 trees had been planted in 2,700 different locations. It is confidently predicted that over 600,000 new plants will be planted in 1924.

A very helpful result of this interest shown by the young people is the country-wide advertising this matter has received. It is now an absorbing subject in which all desire to help. An indirect benefit, but one of the most indispens-
able, is and will be increased appropriations by the National assembly, for last year the Storting gave 50,000 kroner over and above that actually requested for forestry. This is taken as a reliable barometer of the general country-wide interest and support.

Throughout the past 25 years of his splendid work, Consul Heiberg has been the outstanding leader in inspiration. His love for Norway and its future has found expression in many other ways as well. He was one of those who assisted in fitting out Dr. Nansen’s Fram for the north pole trip; in 1896 he gave 60,000 kroner to Captain Sverdrup’s expedition, and in 1898 he gave the well-known statues of Bjornson and Ibsen which now adorn the entrance to the National theatre in Christiania. Remarkably enough, his 75th birthday last year coincided closely with the 25th anniversary of the Forestry Association. This was, therefore, made the occasion for several gatherings in the Consul’s honor.

The Consul now wears the citizen’s gold medal and the cross of the Order of St. Olav.

Just what will these plantations yield? Much fuel grown at home instead of high prices paid for English coal, obtainable from the improvement thinnings on these plantations; lumber for home use and for export from the trees which are left to grow to maturity. This will mean added revenue and more work and a larger pay-roll. This boon, which alone would amply justify the plantations on an economic basis, is after all but a very small part of the benefits to be derived, for the forest pays back tenfold in many other ways. In the first place, the forest improves the soil, for the protection which the trees give reduces extremes of heat and drought and the constant accumulation of dead needles which fall each year build up a necessary mould, which fosters bacterial life in the soil. Secondly, the forest acts as windbreaks on the bleak, wind-swept west land—a boon to fruit trees and gardens. It furthermore provides pleasant sheltered spots for the grazing stock, and through soil improvement the grazing becomes much better than previously. Again, one of the often overlooked benefits is the increase in game animals and birds of all kinds. Deer, and song birds especially, love to rear their young in the leafy bowers close to farmhouses, within sound of bells and human voices, for they find these greater security from predatory animals.

Perhaps the most far-reaching benefit accruing from forested areas is the regulation of stream flow, for the forest delays the melting of snow in the mountains and high valleys and provides loose soil where the water percolates leis-
Norway Spruce, Norway.
urely toward the rivers. This prevents floods and insures uninterupted flow of water over dams and spillways and irrigation ditches, as well as continuous power to mills and factories.

Still another good result is the beauty added to the landscape, broken here and there by prosperous farmsteads, which are set in the midst of a valley of waving crops, surrounded by the soft green of the forest. This is something which makes home and country worth much more, but a matter which can not be reduced to dollars and cents.

The sum total results of the active reforestation program on the west land will be better and more beautiful homes, more live stock and game, increased stability to industries, and a larger, happier and more prosperous population.

“Andy” and Miss Fish, beg your pardon, Mr. and Mrs. H. J. Andrews, were presented with a daughter last January. They have named her Virginia.

Prof. and Mrs. P. Coville are the proud parents of another boy. He will go under the name of Alan.

Last summer Mr. and Mrs. Charley Towne, '25, had a baby girl. They have named her________. This will give Charley something to work for.

Niels K. Clemmensen worked for the Crossett Lumber Co. of Crossett, Arkansas, on a timber survey last summer. Immediately upon his return to Ames, “Clem” and a friend, Miss Merle Harker, were married. No, married life hasn’t slowed “Clem” up at all.

A new man was added to the Department this fall. J. A. Larson, a graduate of Yale, came to us from the Priest River Experiment Station, Idaho, where he has been a Forest Examiner. Larson is an expert Silviculturist and will be a valuable asset in the Department.