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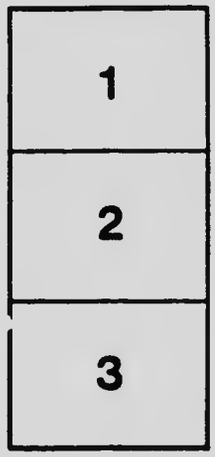

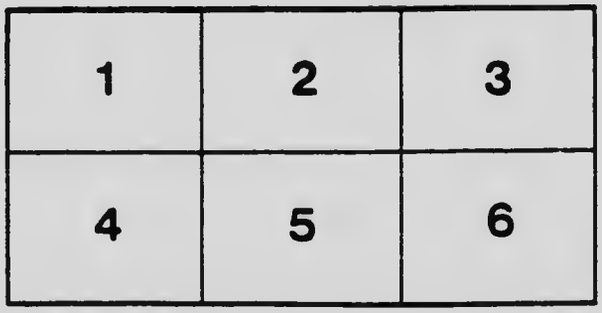

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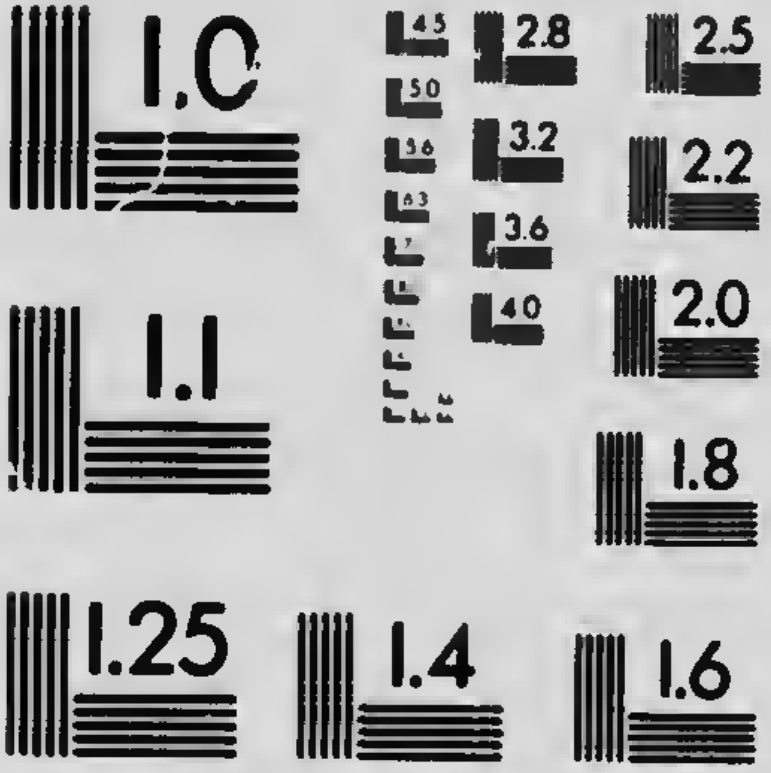

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FORESTRY BRANCH CIRCULAR No. 11

R. H. Campbell, Director of Forestry

The Relation of Forestry to the Development of the Country

R. H. CAMPBELL

The Relation of Forestry to the Development of the Country.

Description of Some European Forest Conditions by Mr. R. H. Campbell, Dominion Director of Forestry.

While on a visit to the Old Country recently I had the opportunity of visiting Sir William Schlich, the head of the Forest School at the University of Oxford. Dr. Schlich is the oldest forester now in England and has had the longest experience in forestry work. He had the honor, with Sir Dietrich Brandis, of organizing the forest service in India and spent twenty-five years in that service. He then returned to England to the forest school which was then located at Cooper's Hill at which the forest students for the Indian service were educated, and has since been engaged in preparing men for the Indian forest service, which requires very high technical qualifications in its officers. Within the last few years the forest school was moved to Oxford and is now being carried on in connection with the University. Sir William is still active and able to attend to his work in the school and deliver lectures, although he is beginning to feel the effects of age. Sir William has since the inception of the forestry work in Canada taken a very keen interest in it, and was very much pleased to learn of the progress that is being made.

Dr. Schlich Discusses Forestry Situation in Canada.

Dr. Schlich was kind enough to discuss the Canadian situation somewhat fully, and after doing so he advised me that the best policy to follow was to have forest reserves established wherever there were lands suitable for that purpose, and then go forward and develop a permanent policy of administration on these reserves. This was the policy followed in the development of forestry work in India, and from Dr. Schlich's experience he was satisfied that this was the important basis for any advance in forest management in Canada. A statement of this kind from a man of Sir William Schlich's long experience both in forest management and in education, is

Mature Scotch Pine, Ballochbuie Forest, Scotland.

of great value and should give the foresters in Canada much more confidence in advocating the policy of setting apart forest reserves which has already to a considerable extent been advocated and adopted.

Progress Being Made in Setting Apart Forest Reserves.

Considerable advance has been made in Canada in the setting apart of forest reserves. At the present time there are forest reservations throughout the Dominion as follows:

	Acres.
Quebec	107,997,513
Ontario	14,130,720
Manitoba	2,606,100
Saskatchewan	6,195,705.6
Alberta	16,813,376
British Columbia (in Railway Belt)	2,117,638.4
British Columbia (outside Railway Belt)	2,474,240

making a total of 152,935,593 acres. Besides the areas given for British Columbia, all the lands west of the Cascades bearing more than 8,000 feet, board measure, of timber per acre and all lands east of the Cascades bearing over 5,000 feet, board measure, per acre of merchantable timber are removed from entry.

These areas have been selected with considerable care with the object of including in such reservations only lands which control watersheds, or which owing to the nature of the soil, topography or altitude, are not suitable for agricultural purposes. The determination of what lands are absolute forest lands and what are agricultural lands is a matter of great importance, and it is one into which a good many factors enter so that the decision that any land is absolute forest land may have to be altered with conditions of climate, or markets and of agricultural and forest development.

Agricultural Conditions.

In considering the possibilities of the use of land for agricultural purposes it should also be kept in mind that the idea is not as to whether it might or might not be possible to plough up the land and raise some sort of a crop on it or use it for grazing purposes, but whether the conditions are such that a family can be supported upon the land in ordinary decency and comfort. If such is not the case the placing of people on such lands is not only of no benefit to them but is an absolute detriment to the common weal as the result can only be the bringing up of a generation which will be a menace rather than a strength to the state.

In districts where the climate is sufficiently mild to permit of the growth of fruit, cultivation may be carried to higher altitudes than in cases where less profitable crops to the acre can be grown. In France and Switzerland, vineyards are found high up on the sides of the mountains on soil that is not of good quality and are making possible a profitable return from the land so as to largely provide for the support of a family on comparatively small areas. Where grain or root crops must be resorted to, the area of land required for the support of a family would be considerably greater, and where it reaches a point that only the grazing of stock and the growing of green feed is a possibility the area required for the support of a family must be largely increased.

On the poorer land and in the mountain districts of Europe it has been found possible to greatly extend the area of profitable settlement by providing an outside source of employment and profit to the agriculturists, and this has been done by covering the poor land with forest and clothing the mountainside with a crop of trees. If we take a typical mountain valley in any of the forested districts of Europe the matter will be found to work out somewhat as follows: In the lower part of the valley where practically any crops may be grown, the farmer can depend on the proceeds of the land he owns or has rented to provide for himself and his family. Proceeding higher up the valley small fields of grain alternating with pasture provide a rather inadequate support for the family, and higher up climatic conditions which make the land suitable only for grazing, except possibly only a few acres in the immediate bottom of the valley, make it necessary that only the grazing of stock, which is generally done on common pasturage, should be carried out while the small area of arable land in the bottom of the valley may supply feed for the stock for the winter and vegetables for the family.

It is found, however, that, if some profitable work can be provided in the winter for the families living in such valleys, the valleys will be able to support a considerably larger population than would be the case if the hill sides were bared and devoted wholly to grazing or attempts at agriculture. The contrast, from observation, between the forested and deforested valleys in the mountains is so great that a forested valley will support a population estimated at five times the number in a deforested valley in a mountainous district. It will be seen then that the forest is not opposed to agriculture but is a great assistance to it in places where the agricultural conditions are not the most favorable.

Scotch Pine. Height, 108 feet; girth, 11 feet 10 inches.

Forest Planting Helps Poor Lands

While the agricultural settlements in mountain valleys have been referred to in the preceding paragraph the same thing applies to poor lands, especially sandy lands, which may not be of a great elevation. A very striking example of this is seen in the district of the Landes in southwestern France. The sands thrown up on the sea-shore in the vicinity of Bordeaux and southward drifted in on the farmyards and vineyards to the east, gradually covering and destroying these and resulting in a condition of sand hills or dunes moving slowly under the influence of the wind, with stretches of marsh between them. On these sand hills and marshes grew a scanty vegetation which provided pasturage for a few sheep which were looked after by the shepherds who have often been described walking over the hills and through the marshes on stilts watching their sheep and sometimes busily knitting in order to add to the value of their time. Agriculture was impossible in the district and this grazing which was very poor and carried but a small number of stock was all the use that could be made of this extensive and increasing sand area. In the year 1788 steps were taken by the French government to ascertain what could be done to improve conditions here, and a policy of forest planting was decided on with the result that these sand wastes have been almost entirely planted up with Maritime pine which produces a very valuable harvest of resin during the life of the tree while the wood afterwards is used for paving blocks in Paris, for props for coal mines in England and Wales, and for other purposes. In fact one part of the shortage of mine props in Great Britain at the present time is due to the fact that the supply could not be obtained from northern France on account of the scarcity of labor owing to the men having all been called out to join the army. It will be remembered that there was a deputation from the British government in Canada recently looking into the question of the possibility of obtaining a supply of pit props in Canada to cover the shortage from the Baltic as well as from France.

The effect on the population of this reforestation work is shown by the fact that in the parishes of La Teste and Cazeaux, in this district the population before re-

Pine Trees tapped for resin near Bordeaux, France.

forestation was 1,600 and is now 14,000, and considerable areas have been brought under cultivation owing to the improved conditions resulting from the fixing of the sand dunes. It is no wonder that a marble monument as well as a bust in bronze have been erected in the district to M. Bremontier, who initiated this work.

Forestry in Scotland.

In the earlier history of Scotland it is probable that the greater part of the Highlands was covered with a tree growth known as the Grampian forest, and that the forest was destroyed over most of the Highlands by fire which may have been set in the later days for the purpose of clearing out some of the turbulent clans from the glens and thus enforcing a pacification which otherwise seemed impossible. As a matter of fact at the present time a very large proportion of the Highlands consists of heather-clad hills, with a very little of natural forest on the estates of some of the more prosperous land owners. In the days of the Highland clearances the glens were emptied of men in many places to make way for sheep, and the grazing of sheep in the Highlands has been recently its most important industry. A careful study of the whole question of the relative value of grazing and forestry in the Highlands has been made in recent years and the deliberate conclusion has been reached that with land which will not rent for more than one shilling an acre for grazing sheep, or even up to three shillings, it is certainly much more profitable to put the land into forest, and those of the private owners who are in a position financially to do so are planting trees and turning such lands into forests as rapidly as they can overtake the work. A large part of Scotland is so situated that the grazing is really not of great value as it is reckoned in the Old Country where our western estimate of one head of cattle to 20 or 30 acres of land, and one head of sheep to about one-quarter of that area, would be considered as reducing the grazing value of the land so low as to make it worthless for any purpose.

The Royal Scottish Arboricultural Society, which includes many of the large land owners in Scotland, is urging strongly a general policy of reforestation for the highlands of Scotland of such lands as are non-agricultural and are not grazing land of high quality. The Arboricultural Society argue for their view of this question not only from the benefit of the land being thus put to its most profitable use but also from the basis of developing an increased population on the land, making the people more comfortable and contented and possibly stopping some of the exodus to Canada which has proved such a great drain on the population of Scotland. The Arboricultural Society has regular excursions every few years to some of the European forests and its members have seen the effect on the development of population of a well regulated co-operation between

agriculture, grazing and forestry, and their recommendations to the government are based on well established grounds. When it is realized that it will take 1,500 acres for grazing 1,000 sheep and that probably one shepherd will be able to look after this flock, whereas in the developed forests of Europe at least one man to one hundred acres is required, it will be seen that the possibilities of increasing the population by the encouragement of forestry are very great.

Conclusion.

While an argument from the experience of Europe or Great Britain cannot be transferred to Canada without consideration of the different conditions it is quite clear from the study I was able to make during the past summer of this question in the Old Country that for the best development of a country both in industries and in population, it is necessary to have a proper balance between the agricultural, grazing and forest interests, and that these are not necessarily antagonistic but should be mutually helpful

Fire Line on Sand Dunes near Bordeaux France.