

to \$14.00 per M. for the round log. On spruce it was found necessary to reduce the length and diameter limit from 18 ft. by 10 in. to 16 ft. by 9 in. *Thousands of acres of good timber land have been taken up under the pretense of agricultural development, only to be abandoned after desultory attempts at clearing and cultivating, and after the occupant had burned, possibly, thousands of acres of good timber;* these signs of the gradual depletion of forest land led to a movement for definite knowledge of the condition of the public domain, and a classification of the land as to whether it was chiefly suitable for farm or timber.

#### *Foundations of Agriculture.*

Perhaps one of the most important features of the survey is the classification and delineation of the agricultural lands, the objects being to direct future settlement to localities where there is the greatest opportunity for successful farming, and to prevent the denuding of purely timber land under the guise of clearing for agricultural purposes.

The success or failure of any agricultural community depends on four factors:

1st, Climate; 2nd, Soil; 3rd, Personal; 4th, Social. We shall consider the first and second in more detail: Climate—The climate in New Brunswick is generally favorable to agricultural pursuits; the winters, though long and severe, are followed by warm, pleasant summers with plenty of rainfall; vegetation showing a remarkably fast development, although late spring and early fall frost limits the range of field crops to those developing and maturing in a little over three months.

Soil—The soil is the factor with which this survey is chiefly concerned, and is, next to climate, the most important in limiting agricultural development. In the classification of soils on an agricultural basis two primary things have to be considered.

#### *1st, Topographical Character.*

Soil on gentle slopes or up to a sustained slope of eight to ten per cent. is tillable; slopes to fifteen or twenty

per cent. are suitable for grazing. Steeper slopes, soils broken by ledges or boulders are unsuitable for any agricultural development.

#### *2nd, Physical Character of the Soil.*

The physical character of the soil determines its moisture and fertility holding capacity, as well as to a large extent the cost of bringing area under crop, and it is more important than soil fertility, because fertility may be increased or destroyed by the manner in which the clearing and cropping is done, but the texture of the soil cannot be changed.

We have divided our soil into five types on this physical basis. They are: clays, clay loams, sandy loams, sand soils and swamp soils.

Roughly speaking, therefore (referring to our soil maps), clay loam, clay soils and sandy loams can be classified as agricultural land, unless there are excessive quantities of surface or sub-surface tone (shown by hatching), or the cost of drainage is excessive.

#### *Value of The Survey.*

Just a word as to the use the information gathered will be to the department in the future management of the Crown Lands.

1st, It gives definite information of the quantity, quality and value of the timber on any area, from which a very close appraisal of the stumpage can be ascertained: will show whether the Department is receiving full value for the lumber cut or not, and they can adjust their stumpage rates accordingly.

It will show the quantity and quality of species now of little importance because of lack of market demand, and it is hoped that we will be able either to show that these species can be marketed profitably, or to induce industries utilizing these inferior species, where the quantity justifies it, to locate within the province, thus profitably utilizing material which is at present going to waste.

Mr. W. B. Campbell, B.Sc., of the Forest Products Laboratories of Canada, Montreal, was some time ago