

The first type occurs north of Lesser Slave river and lake. This is really the headwaters country, forming the divide between the Lesser Slave and Watkins water systems. It appears on the lake shore west of Martin creek. Elsewhere it is far in the interior. In all, there are about 675 square miles of the country within the tract examined last season. The timber of this type is mostly pole size or under. The country consists of an alternation of muskegs and ridges of boulder clay, or, rather, islands in a sea of muskeg. The ridges contain open stands of limby pole jack pine and the muskegs bear stunted tamarack and black spruce. About sixty per cent of the area is muskeg. Forty per cent of the country has been burnt within the last thirty years.

South of the Swan hills, in the region lying between the headwaters of the Santolin river and Deep creek is another tract of height of land country. Here are found the same characteristic topographic features, of ridges surrounded by muskeg. The only thing to differentiate the country from that lying north of the lake is the fact that the lodgepole pine replaces the jack pine on the ridges.

The lodgepole pine grows in dense stands, the trees are small and spindly, rarely over four inches in diameter at breast height and forty feet high. Towards the southern boundary of this type, occasional large ridges occur, showing a mixture of aspen and spruce on their northern slopes.

SPRUCE TYPE

This type is taken to comprise those areas where commercial spruce is found as the predominant tree. It is at present confined to small scattered patches, remnants of stands which formerly covered much larger areas.

Two main variations of this type occur, namely, spruce-poplar, and spruce-cottonwood.

The spruce-poplar type consists of white spruce with an admixture of aspen and balsam poplar. It occurs mainly on well-drained uplands or slopes. The run of the timber varies as to proportion of spruce to poplar. The spruce is generally limby, not averaging one log clear. The average height varies from 85 to 105 feet, according to the site. The diameters run up to forty eight inches, but the average will be about fourteen inches. In this type is found the best development of aspen poplar. Specimens were found in this type two feet in diameter and 100 feet high, with 75 feet clear. Trees of this size, however, are always very defective from heart-rot (*Polyporus imbricatus*).

The spruce-cottonwood type occurs principally on lower levels, on overflow lands, in creek valleys, or occasionally on the lower slopes of hills. In these last localities there is generally a transition to the spruce-poplar type. The timber is generally large in the spruce-cottonwood type, but the stand is more open and the trees more limby. Sample areas taken showed timber running over 30,000 feet per acre. The height-growth of spruce will average higher than in the spruce-poplar type as will also the diameters.

In this type we have cottonwood occurring in transition to pure cottonwood stands as dealt with above. Trees of this species occur frequently overtopping the spruce, with a height growth of 110 feet. In general, however, the percentage of defect is great.

These spruce types are remnants of a former forest. Both show a majority of the trees mature or over-mature. Depreciation in value is occurring every year, so that a thinning out is urgently needed. If this were done younger suppressed growth would be given a chance.

FIRES.

Of the total area of land examined last season, 11 per cent, or 900 square miles, has been fire-swept within the last twenty-five years. Of this area 85 per cent is either muskeg country or a type containing a large percentage of muskeg. The