

King Spruce

It is not generally appreciated that the value of the annual production of spruce lumber and pulpwood in Canada exceeds that of nickel, silver, gold, copper and lead combined. In 1919, the value of the spruce lumber was approximately \$44,000,000 and of pulpwood \$28,000,000, or three times the value of either the Douglas fir or white pine production.

This is probably due, at least in part, to the fact that spruce is a dual-purpose wood, being valuable for both lumber and pulp. The light colour, long fibres and easy pulping qualities make it the most valuable wood for the manufacture of paper. Spruce was at one time considered the only wood suitable for the manufacture of newsprint. Though the increasing difficulty of securing sufficient spruce to meet the demand has led to the use of other woods, chiefly balsam and hemlock, in combination with spruce, spruce still comprises over 70 per cent of the wood used by the pulp and paper mills in Canada. As lumber, it is white, soft, light and easily workable, possessing a maximum of strength for its weight, so that it is in demand for light construction and interior finish. The absence of a very distinct grain precludes its general use in a natural finish, but it is largely used in place of pine where it is to be painted.

There are five species of spruce in Canada. Red spruce is confined to the Maritime Provinces and the eastern part of Quebec. White spruce and black spruce extend from the Atlantic coast to Alaska and as far north as the mouth of the Mackenzie river. In the southeastern part of its range, the black spruce is usually confined to wet or swampy sites, where it grows slowly and to a small size. In the northwest, it is found on better sites and is a better tree. White spruce is, however, the most important eastern species of spruce.

Sitka spruce is confined to the Pacific coastal region. It attains very large sizes, up to 8 to 12 feet in diameter and 160 to 180 feet in height. During the war, it was framework of air-craft, and 26,000,000 found that Sitka spruce-wood was the best in the world for the manufacture of the

board feet of the finest quality was supplied by British Columbia to the Imperial Government for this purpose.

Engelmann spruce is plentiful in the inland, mountainous region in the southern half of British Columbia. It is also a splendid tree, but does not attain the gigantic sizes of the coastal species.

All of the spruces reproduce well under proper conditions. They are all tolerant of shade, which enables them to reproduce and remain alive even under comparatively dense stands. They do not thrive under such conditions, however, and, unless relieved of the oppression in time, their recuperative powers will be weakened. If given a chance, all of the species, except possibly black spruce, will make a rapid growth, and will afford perhaps a better return in a forest managed for sustained yield than most other kinds of trees. This is especially true where small sizes can be utilized, as in the pulp industry.

Although reliable information is not available as to the amount of spruce in Canada, it is estimated that about one-third of the standing timber is spruce. There is, perhaps, between 100 and 150 billion board feet suitable for the manufacture of lumber, and, in addition, between 350 and 400 million cords of spruce pulpwood. A very considerable amount of this, possibly one-half, is not commercially accessible under the present conditions of market and transportation.

The annual cut of spruce is a little over two billion board feet. To this must be added the annual destruction by fire and by insects, which during the last two decades, has far exceeded the amount used. The depletion of the pulpwood resources of the eastern United States has already created, and will continue to cause, an ever-increasing demand on the spruce forests of Eastern Canada.

Unless measures are taken to reduce the waste in logging, to check forest fires, and to provide for the development of new crops, the available spruce forests of Eastern Canada, at least, will be within sight of exhaustion inside of fifty years.

(Commission of Conservation)