

## Forest wealth of Canada.

Processes, such as Sinclair's, have long been in use for pulping very finely cut coniferous wood, and in the Paris exhibition of 1880, one of the most prominent objects exhibited in the Norwegian section, was a *pâte de bois* or *papier maché*, made in this way from pine wood, and worked into cardboard and various moulded panellings, &c. It has been found, moreover, that in this way the whole of a pine tree trunk—branches, needles, and all—can be converted into paper without waste. Saplings, which it would not pay to cut for firewood, are now profitably worked up in this way into pasteboard.

By the chemical processes for manufacturing wood pulp, a good class of pulp is made from the quick-growing poplar and from spruce. The wood of the slower growing linden or basswood, makes an equally valuable white paper pulp.

Oak can also be used, though yielding an inferior product that requires bleaching. One great advantage in the method is that the tannin in the oak is obtained as a by-product, and the chemicals with it in the lye being rather an aid than a hindrance to the tanning process, it is found that hides can be perfectly tanned in it in ten days. This seems to offer to the cultivator of oak coppice, or the enterprising planter of poplars, a most important source of income, whilst in coniferous plantations, there need be absolutely no waste.

The chemical preparation of fibre has given rise to two distinct processes—the soda process and the acid process.

Chemical pulp (cellulose) is used as an adjunct with esparto rags or mechanical pulp, in the manufacture of news, printing, colours, and some kinds of wrapping paper. It forms (according to Mr. Routledge) an excellent succedane, or filler up, and bleaches to a high colour. Fine prints are also manufactured exclusively from acid pulp.

Mechanical pulp is chiefly used as an adjunct in the manufacture of news, cheap printings, and wall-papers, but there are several distinct classes of paper made from it, without any other ingredient, viz., wood-pulp middles from white pine pulp, and various self-coloured wrappings, and tinted wall-papers from brown, sometimes styled patent, pulp.

Another important use is for wood pulp boards and so-called "patent" or brown boards, the latter being produced from brown pine pulp, and the former from white pine pulp.

The consumption of wood pulp boards is increasing rapidly, chiefly for making paper boxes, for which they possess certain advantages over straw boards.

Although almost any wood can be converted into pulp, experience has hitherto decided in favour of conifers of a certain age.

For chemical pulp, trees on an average of twenty years' growth, and a thickness of six to eight inches at the base of the stem, are said to be the best. Younger wood is more tractable by chemical means, but produces a fibre of inferior quality. Older wood requires stronger chemicals to remove the encrusting matter, and possesses no compensating advantages.

In Canada, many species of wood have been utilized, amongst which may be mentioned pine, poplar, spruce, willow, basswood, cedar, hemlock, maple and birch.

Poplar pulp remains white, birch becomes pink, maple turns of a purple tint, and basswood, reddish after grinding.

The practical operations concerned in the manufacture of pulp from wood, by the caustic soda process, may be divided into the following: Barking, sawing, chopping, crushing, boiling or digesting, washing and bleaching, treatment for sale as half-stuff, and soda recovery.

### THE WOOD PULP INDUSTRY.

(From the "Canadian Trade Review," 24th November, 1893.)

Of all our industries the public at large know less of that of converting wood into paper than perhaps any other. The raw material and the finished product seem so contrary in nature that few outside the trade have any conception of the processes by which wood is converted into paper, nor of the extent or the possibilities of this singular and interesting triumph of scientific skill. Paper to be made from rags presents no