

PULPING AND PAPERMAKING PROPERTIES OF SELECTED NEW-ZEALAND-GROWN WOODS.

**A Report by the Forest Products Laboratory, U.S.A. Department of Agriculture,
Forest Service, Madison, Wisconsin, in Co-operation with the New Zealand State
Forest Service.**

The DIRECTOR OF FORESTRY to the Hon. the COMMISSIONER OF STATE FORESTS.

SIR,— New Zealand State Forest Service, Wellington, 8th October, 1928.

I have the honour to submit herewith a report transmitted to me by Mr. A. R. Entrican, Engineer in Forest Products, presenting the results of the studies made in co-operation with the Forest Products Laboratory, U.S.A. Department of Agriculture, Forest Service, at Madison, Wisconsin, into the pulping and papermaking properties of a number of selected New-Zealand-grown woods.

RESULTS.

The report shows that a commercial grade of newsprint can be produced either from insignis pine alone or from a combination of insignis pine and tawa; and of kraft papers (*i.e.*, wrappings, &c.) from rimu, insignis pine, Corsican pine, Austrian pine, and European larch. Coming as they do from one of the foremost pulp and paper research institutes in the world, these results may be accepted as conclusive, particularly so since they include both laboratory and actual commercial pulp- and paper-mill trials. They have, in fact, already been favourably commented upon by independent paper-manufacturers in North America and Great Britain.

PURPOSE OF TESTS.

Two considerations weighed with the Government in its decision to study the pulping and paper-making properties of New Zealand woods. It was a large seller of stumpage, and likely to become a still larger one in the near future. The Dominion at the same time was importing pulp and paper products valued at over £1,000,000 per annum, and increasing these imports at an annual rate of £55,000. Thirty years ago the Government initiated a tree-planting programme which has gained momentum steadily, until to-day the Forest Service has planted some 188,000 acres, including some 54,000 acres during the 1928 planting season. The Forest Service is administering, too, a forest domain of over 7,000,000 acres. All these plantations and forests are yielding large volumes of woods for which it is necessary to develop profitable markets. Some of the forest crop goes into building and constructional timber, some into poles and fencing-posts, and some into fuel-wood. Yet there still remains considerable material, in the shape either of woods and mill waste, or of unused species, or of thinnings and improvement cuttings, for which no outlet has appeared available, largely because little information as to how and for what purpose to use it was in existence. An intensive survey of this wood-use problem indicated that one of the most promising avenues of utilization lay in the pulp and paper industry, and it was therefore decided to first ascertain whether the principal woods were suitable for this purpose. A study of the domestic pulp and paper markets confirmed the advisability of making such an investigation, especially in its relation to the manufacture of newsprint, the imports of which have been increasing steadily over a long period, with promise of soon attaining a figure representing the output of an economically-sized mill.

LOCATION OF STUDY.

How to carry out the work was the first problem. Two alternatives presented themselves—that of building a laboratory in New Zealand, or, alternatively, of arranging for a recognized and established laboratory abroad to undertake the work. Eventually the second alternative was adopted. Not only did it promise to be several times more economical, as the capital cost of a local establishment would be high and the development of a good operational technique very costly, but the results from a recognized laboratory would be more readily acceptable by commercial pulp and paper financiers who might be interested in the development of the industry in New Zealand. Consideration of suitable institutions showed that none were available in the British Empire at that time. The Canadian pulp and paper laboratory attached to the Canadian Forest Products Laboratories at Montreal, was closed down pending the erection of a new building and the installation of new equipment, and the other laboratories in India and England were either not equipped for the work or did not possess the particular technique and experience required. Most unexpectedly, however, the Government of the