

Is There a Substitute for the Spruce Log

THE comparative scarcity of pulp for paper-making and the consequent high prices for newsprint are reflected in the stimulus given to research all over the world in an endeavour to

widen the field of raw material for paper manufacture. A brief review of some of the possible competitors with Canadian spruce and balsam may be interesting.

Esparto is a grass-like plant found in Spain, Algeria, and Tripoli. It was used for paper-making in Great Britain as early as 1857. During the war, the scarcity of other sources of pulp gave it greater prominence. The fibres are short and weak, and the pulp is best used for filling and is employed largely in mixtures with longer and stronger fibres. In papers in which considerable strength is needed, not more than 20 per cent. of *esparto* can be used.

Zacatan is a plant belonging to an American genus of the same family as *esparto*. It is principally found in Mexico, where it grows profusely in certain regions. Experiments with this material, conducted by the Bureau of Plant Industry of the U.S. Department of Agriculture, showed that a satisfactory paper could be made from it by means of the soda process. Indeed, the report of the investigation was published on paper made from *zacatan*. The experiments were not, however, conducted on a scale sufficient to make any estimate of the cost of manufacture. At present, *zacatan* is a waste product and flourishes in a region remote from paper-manufacturing sections.

Hemp hurds have also been investigated by the Bureau of Plant Industry. After several trials, under conditions of treatment and manufacture regarded as favourable in comparison with those used for pulp-wood, paper was produced which received very favourable comment both from investigators and from the

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