

other uses.* Much of the smaller timbers would find useful applications in a larger country where competition is keener. One would certainly not see such valuable woods as kohekohe, or New Zealand mahogany (*Dysoxylum*), carted about and sold as firewood, as is now done in Wellington.

If we except the "beer" made from the rimu for his scurvy-stricken sailors by Cook in Dusky Sound, perhaps one of the first forest by-products utilized by Europeans was the bark from certain indigenous trees used for tanning the leather required for the infant colony. It is here intended to introduce the subject of the utilization of forest by-products by a study of the Maori methods of producing colours, the permanency and brightness of which were the admiration of all in those days in which vegetable and animal colours were almost universally used. In this connection J. C. Andersen† quotes from page 71 of the Official Catalogue of the New Zealand Exhibition, 1865, that "minute information is much required connected with the method and substances used in dyeing the flax with these brilliant fast colours in which the Maoris have excelled," from which he concludes that even so late as 1865 the Maori people excelled us both in the preparation of the flax-fibre and the dyeing of it.

In a future number of the *Journal* the use in later days of indigenous tans will be dealt with.

DYES OF THE ANCIENT MAORI.

Nicholas‡ (1817) relates how he observed near a Maori dwelling a capacious vessel in the shape of a flat-bottomed boat, in which was steeping the bark of a tree called "enou," from which the Natives extract a black colour that serves them to dye their flax with. By "enou" is no doubt meant hinau (*Elaeocarpus dentatus*), a common tree in lowland forests in the North Island and extending as far south as Catlin's River in Otago. This tree is that most often mentioned in early books on New Zealand in connection with Maori methods of dyeing. Craik§ (1830) says, "Among those trees which the Natives principally make use of is the 'henow,' from which they extract a black dye." Yate|| (1835) states that hinau makes an excellent dye, either a light-brown or puce colour or a deep black, not removable by washing. The Natives use the outer skin of the

* The utilization of sawdust and wood-waste in thickly populated countries may be classified under the following heads: (1) Employment as fuel; (2) dry distillation to make wood spirit, wood-tar, acetic acid, acetone, and charcoal; (3) chemical treatment to produce cellulose (wood-pulp), vinegar, alcohol, sugar, gum, and oxalic acid; (4) usage for production of artificial wood; (5) employment in the manufacture of explosives; (6) usage as a diluent to produce porosity and lightness in manufactures; (7) usage by gardeners and intensive farmers to produce hotbeds, composts, and manure; (8) a variety of miscellaneous and minor uses. † "Maori Life in Aotea," p. 324. ‡ "Narrative of a Voyage in New Zealand," vol. i, p. 340. § "The New-Zealanders," p. 175. || "An Account of New Zealand," p. 49.