

gradually down the tree. He makes a V-shaped cut in the bark, the V lying horizontally across the barrel of the tree; this cut is called the "tap," and is made deepest at the apex, there almost reaching the sap. The taps are cut horizontally around the limb and barrel of the tree, and are spaced about 18 in. apart. Having completed all the tapping that can conveniently and safely be made at his first level, the climber lowers himself 6 ft. or 8 ft. and again makes his circuit of taps, and so on down the tree.

Some forests are leased for bleeding purposes with the stipulation that no "taps" are to be cut in the barrel of the tree, so as to prevent all risk of damaging the tree for sawmilling purposes; others are let without any restriction, and the whole of the tree from top to bottom may be tapped and bled. The former system is called "bleeding heads only," and the latter "bleeding heads and barrels."

The climber when dealing with the barrel or trunk of the tree is required to exercise greater care in making the incision so as not to damage the wood of the tree.

After the tapping is completed the tree is left undisturbed for six months. The climber then makes another ascent of the tree. This time he has added to his outfit an oblong box measuring 12 in. long, 9 in. wide, and 9 in. deep. This box is constructed of wood and canvas, and is held under the tap, and the exuded gum chipped off with the axe. The tap having been cleared of gum is again opened, and the V is left as it was originally. The opening of the tap means the peeling and shaving off with the axe of about a quarter of an inch of dead bark, and so again exposing the green. It is always the original tap that is opened, it being quite unnecessary to make any new cuts. Every tap having thus been dealt with and the crop harvested, the tree is left for another six months and then the same process is repeated.

The first crop produces larger gum than the succeeding ones. Some of the gum is, however, soft, and needs to undergo a drying or hardening process. In each succeeding crop the gum tends to decrease in size but to improve in quality, bleeding harder and clearer.

After the gum has been gathered from the tree it is carried to the climber's camp. It is there carefully examined and any bark or rubbish picked out. The soft gum is spread out on a table having a wire-mesh top and placed in the sun to dry. After being thoroughly dried it becomes as hard as the ordinary gum. The cleaning and drying having been completed, the gum is then ready for the local market, where it is sold under the name of "bled bush."

It has been mentioned above that it is possible to bleed the kauri without doing any appreciable injury to the tree. In order to attain this result, however, it is necessary that great care should be taken in cutting the taps so as not to expose the sap-wood, for if the wood is exposed it lays the tree open to the attack of the pin-worm grub. When it is only the head of the tree—the non-marketable portion—which is bled there is no danger of any injury to the barrel of the tree by the ravages of the grub.

In many privately owned forests the right to bleed the barrels as well as the heads is frequently granted to the climbers, and it has been found that by the exercise of reasonable care the barrel can be tapped and bled without depreciating the marketable value of the tree for building purposes. It has been noticed that the bark at every tap quickly starts to repair the injury to its surface, and so rapid is this healing that if a carefully cut tap is left undisturbed for two years evidence of it has almost disappeared.

Having regard to the high and increasing value of bled gum, it is difficult to say what it will be worth in ten or twenty years from now. Indeed, it may be well conceived that the real value of the kauri-tree to the State lies in the periodic crop of gum which may be taken from it, and not in the timber the tree contains. It is estimated that for every million feet of milling timber in a forest a net annual revenue of £75 could be obtained by tapping the trees for gum. This estimate is made on the basis of bleeding only the heads of the tree, by which process, as already pointed out, the chance of any permanent injury to the tree is reduced to a minimum.

An instance of the successful bleeding of a kauri forest has been recently brought under my notice. In this case the trees had been systematically bled for the past ten years. The trees were bled "heads and barrels," and the tap cleared three times a year. The yield of gum at the end of the period was not much less than in the earlier years. Now, if the taps had been cleaned only twice a year and only the heads had been bled it might reasonably be concluded that the bleeding could have been continued for at least thirty years without doing any more injury to the tree than was done during the ten years.

It is of course recognized that bleeding is not looked upon favourably by many people; but it is remarkable how little reliable information can be obtained as to the effect of systematic and judicious bleeding on the marketable value and durability of the timber. It was thought that something definite on the subject could have been obtained from the report of the Royal Commission on Forestry (C.—12, 1913), but it was found that no reference whatever was made to the subject in the body of the report, although some of the witnesses were questioned regarding it. None of the witnesses went beyond the expression of a general opinion; proper and systematic bleeding does not appear to have been discussed.

At the present time the State owns two large areas of kauri forest, the Waipoua* and the Warawara. The former, which lies a few miles to the south of the Hokianga Harbour, contains 23,000 acres, and the latter, which is situated to the north of the harbour, has an area of 12,500 acres. These forests, in addition to the kauri, contain a variety of other trees, including rimu, miro, taraire, kahikatea, and totara, with the usual luxuriant undergrowth.

The Waipoua is estimated to contain 65,000,000 ft. of milling-kauri, and the Warawara 53,000,000 ft. Here, then, we have 118,000,000 ft. of milling-timber, which on the basis of £75 per 1,000,000 ft. mentioned above, would yield a net annual revenue of £8,850 by bleeding only the heads of the trees.

* For a full description of Waipoua, see Report on Botanical Survey of, by Dr. Cockayne (C.—14, 1908).