Each photographic map print of known total area was divided into three portions of convenient size. Each was weighed, its area determined, and a conversion factor worked out. A test piece of the same photographic paper, kept under the same atmospheric conditions, was also weighed and its area determined, using the conversion factor. Systematically all pieces in about a third of the print division (one ninth of the full map print) were weighed and weights converted to acres, the conversion factor being checked by re-weighing the test piece each half-hour. An acreage balance was struck after completion of each ninth and each original third of the total map print and adjustments made where necessary. Occasionally the adjustment for a full map print of 31,000 acres was less than plus or minus 20 acres, and rarely did it exceed plus or minus 150 acres, this latter representing an error of plus or minus \(\frac{1}{3}\) per cent.

In practice it was found that two operators, working together, could determine the type and tenure areas for a full 20 chain map sheet in one day—that is to say in about one third of the time required by the dot grid method. Operator strain is distinctly less than where either the dot grid or planimeter methods are used with, consequently, a greatly reduced liability to error.

The method is ideal for use where area determinations of a great number of figures of manifold size and shape must be made. Only through its use was the National Forest Survey completed on time. Though the method is by no means a novel one, credit for its local application and refinement must go to the draughtsmen concerned—Messrs. W. W. Gilchrist and D. J. O'Leary.

NOTES

OPOSSUM DAMAGE IN BEECH FORESTS
RUAHINE RANGE, HAWKE'S BAY

In the various upper watersheds of the Tuki Tuki River both red deer and opossums are present—the former in considerable numbers locally. Opossums occur at all levels. About the lower forest fringe and in adjoining grazing land, particularly where pockets of second growth broadleaved species occur, opossum numbers are locally great. In this area at least 16 indigenous species of shrubs and small trees are heavily browsed by opossums. In general, preferred species are those which also rank highly on the deer menu.

Recently another type of damage undoubtedly attributable to opossums has been observed. This takes the form of extensive bark-eating and has been noted on miro (\textit{Podocarpus ferrugineus}) and red beech (\textit{Nothofagus fusca}) at lower levels, and on windswept mountain beech (actually \textit{XN. cliffusca}) at about 3,000 feet. In all cases the bark has been removed, mainly from the upper portions of
stems, so that the damage is rather inconspicuous from the ground; though occasionally a branch may be completely ring-barked.

Barking of one-half to over three-quarters of the stem circumference, continuous for about 30 inches, was observed on a miro branch with a maximum diameter of about 1 1/2 inches. The tree was about 25 feet tall and much dead foliage was in evidence. Every dead branch examined had been heavily bark-chewed. On some barkings partial bark callusing had taken place but others were of a more recent nature with no bark callus which suggests that this damage occurred during the last spring or summer. Branches on a pole red beech were similarly affected but damage was less extensive. In both cases favourable browse species were close at hand.

Several mountain beech trees (hybrids) on a narrow, steep-sided ridge were damaged in a similar manner. This site is approximately 15 miles distant from the site of the above described damage. Affected trees observed were in close proximity to each other. Branches from 1 inch to twigs of 1/10th inch diameter were heavily bark-chewed—chiefly on the upper surface. No bark callusing had taken place, the exposed wood was fairly whitish and fresh-looking, and as yet little foliage had died; though much certainly appeared half-dead. It seems likely, therefore, that the damage occurred during the last spring or summer. In the neighbourhood of these trees deer usage of accessible plant foods has been heavy—the forest floor is almost bare of living plants other than mosses, and few shrubs but Dracophyllum urvilleanum exist—so that very little food of a favourable nature is available for opossums.

In each case bark scratchings attributable only to opossum claws were observed on the tree trunks; and the bite dimensions on affected branches match those of the opossum. All damage was well beyond the reach of ground animals and, as already stated, was confined largely to the upper portions of branches and twigs. The conclusion is inevitable that the opossum is responsible for the damage noted.

The above findings suggest that our montane beech forests may be more vulnerable to opossum attack than is commonly believed.

—P. J. Grant.

Opposite. Opossum damage on mountain beech.