In January, 1941, twelve hours of continuous downpour aggra-
vated by melting snow on Mt. Ruapehu caused this normally inoffen-
sive stream to become a raging torrent. In its course through the
forest, considerable lateral erosion of the channel took place. Timber,
most of which had been deposited on the comparatively low banks
in earlier floods but also including green trees, was swept down in
astonishing quantities to form a succession of dams, which on bursting
unleashed a terrific spate of water.

On debouching from the forest some of the water was able to
overflow on to the flatter land, depositing much of its burden of
boulders and timber and making the future course of the stream un-
certain. In the lower part of the forest silting killed many beech
trees. Even then the force of the flood was far from spent. In
Ohakune, five miles away, buildings were inundated, vehicles wrecked
and large trees deposited in the streets, while one life was lost.

Yet almost the whole of the catchment area was under
virgin cover of scrub and forest.

F. J. RANGER.

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**STRATIFICATION OF BEECH** (*NOTHOFAGUS*) **SEED.**

In the stratification of beech seed, the method I have found
most effective is with sand in a packing case, using clean granite river
sand. The procedure is as follows: A packing case is placed outside
on the shady side of a building with timber to keep it at least 4 inches
off the ground; old sacking, thoroughly soaked in water is then
placed in the bottom of the case and covered with moist sand to a
depth of 4 inches. The sand should be moist enough for some
particles to stick to the hands. On this sand the first layer of seed
with capsules is spread to a depth of approximately 2 inches; the
seed is then covered with 2 inches of sand, and so on until the final
covering of 4 inches of sand is placed on the top layer. The case is
then protected with a sheet of iron and left undisturbed for about
two months (April and May). This time would no doubt vary accord-
ing to climatic conditions. However, if part of the top layer of seed
be carefully examined after storage for some weeks and there is no
sign of mould or mildew, it is quite safe to leave it. Seed must, of
course show slight signs of dampness the whole time, but on the
first indication of fungous activity, the seed and sand must be
carefully and thoroughly mixed except for the bottom 4 inches of sand.
The seed can then be left for a few weeks and then thoroughly mixed
again, making sure that there is still sufficient moisture in the sand.
Towards early spring, great care is necessary in examining seed.
The first signs of germination appear in Nelson usually about Sep-
tember; so during August the seed is put through a sieve to remove
most of the capsules, leaving the pure seed which is again mixed with
the sand, and kept until required for sowing which should be early
in September.

The most convenient depth for storage cases is about 20 inches.

A. W. WASTNEY.

ARTIFICIAL REGENERATION OF KAHIKATEA.

In Vol. III, No. 2 (1932) of this Journal, J. F. Field gave an
account of the establishment by planting of kahikatea (Podocarpus
dacrydioides) on an area of 0.6 acres on State Forest 98 at Opiki,
14 miles from Palmerston North. The following table summarises
the survival and growth of these trees over a period of 12 years:

<table>
<thead>
<tr>
<th>Year</th>
<th>1931</th>
<th>1932</th>
<th>1933</th>
<th>1934</th>
<th>1935</th>
<th>1936</th>
<th>1937</th>
<th>1943</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of trees</td>
<td>720</td>
<td>717</td>
<td>712</td>
<td>705</td>
<td>703</td>
<td>686</td>
<td>647</td>
<td>374</td>
</tr>
<tr>
<td>Survival per cent.</td>
<td>100</td>
<td>99</td>
<td>98</td>
<td>98</td>
<td>95</td>
<td>90</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>Average height</td>
<td>2' 4&quot;</td>
<td>2' 3&quot;*</td>
<td>3' 0&quot;</td>
<td>3' 6&quot;</td>
<td>4' 8&quot;</td>
<td>5' 2&quot;</td>
<td>6' 1&quot;</td>
<td>11' 2&quot;</td>
</tr>
<tr>
<td>C.A.I. (Ht.)</td>
<td>—</td>
<td>2&quot;*</td>
<td>10&quot;</td>
<td>6&quot;</td>
<td>14&quot;</td>
<td>6&quot;</td>
<td>11&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>Maximum height</td>
<td>3' 0&quot;</td>
<td>3' 9&quot;</td>
<td>5' 0&quot;</td>
<td>6' 0&quot;</td>
<td>7' 5&quot;</td>
<td>7' 11&quot;</td>
<td>8' 10&quot;</td>
<td>18' 0&quot;</td>
</tr>
<tr>
<td>Average D.B.H.</td>
<td>1.3&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum D.B.H.</td>
<td>3.0&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Loss of increment due to deer browsing.

From planting in 1931 until 1937 the plot received regular
inspection and liberation from competing vegetation. During this
period the trees suffered from deer (in 1931), frost which often
killed 8 or 10 inches of the leading shoots, whipping in gales and attack
by the mealy bug Pseudococcus podocarpi, in addition to competition
from the rank growth of tall fescue (Festuca arundinacea) etc. How-
ever, the trees showed a high survival rate and good recuperative
power.

After 1937 the area received little attention until the last measure-
ment in December, 1943. It was then found that in general the
trees were healthy and making good growth, but those near the ex-
posed northern boundary were rather stunted and straggling with
numerous dead tops. Pseudococcus was present in insignificant
intensity and most of the trees were tall enough to avoid severe
frosting. There was a moderate proportion of double leaders while
a very few tops showed fasciations.

The chief cause of the reduction in stocking from 90% in 1937
to 52% in 1943 was the overwhelming of trees by creeper (Calystegia
and Muehlenbeckia). There was a dense growth about 7 feet high of
tall fescue, sedge (Carex sp.), cleavers and goat's rue. Most of the
trees were beyond surface competition with all but the creepers, but
some had suffered permanently bent stems. There were odd trees,