

The Pohutukawa



G. J. H. Moon

Pohutukawa (*Metrosideros excelsa*) has earned the distinction of being New Zealand's Christmas tree. For a few weeks about this time of the year, when many New Zealanders are enjoying holidays, pohutukawa is a blaze of red in northern beach areas, paling the gaudy decorations of the festive season. It is a festive season too for the nectar gatherers; the bellbirds, tuis and bees all congregate to enjoy a rich harvest. In a good flowering year, pohutukawa honey flows freely.

The pohutukawa's petals are very small and contribute little to the beauty of the flowers: the brilliance is in the stamens, each about 3 cm long and set around the margin of a cup glistening with nectar. To add to the showiness, the flowers are massed into clusters at the tips of the

branches, contrasting vividly with the dark foliage.

In the ovary beneath the cup the ovules develop into seeds. The ovary swells and the three sections split in autumn to release the seeds in vast numbers to be carried far and wide or to fall around the bases of the trees.

Seedling establishment is a hazardous phase in the life cycle. The tiny seeds carry very little food with them and must be able to manufacture their own from the time they germinate. To be successful, the seedling must receive abundant light yet have sufficient moisture for germination and establishment. In this critical stage the seedling must not be competing with other plants for survival, or subjected to drought. It seems that no exposed face of rock,

Establishment.

New Zealand's Christmas tree, the pohutukawa lends a special brilliance to the festive season with its blazing red flowers.

clay or masonry is too inhospitable to the pohutukawa, so long as the root can gain a foothold.

Even in the most favourable situations not one seed in a million has a chance of growing into a tree. The chances are even smaller where other plants exclude pohutukawa from suitable crevices and there are opossums and farm livestock to remove seedlings as they appear. Where the land is well clothed in vegetation, and sheep and cattle graze right down to the shore, there are often almost no young plants to replace the old pohutukawas as they die. There may come a time when



1 Opossums and farm livestock reduce the pohutukawa's chances of survival by eating the new seedlings. This pohutukawa at Manukau Heads has been defoliated and killed by opossums.

2 The base of New Zealand's largest known pohutukawa, at Te Araroa on East Cape. Believed to be at least 300 years old, it is 20 m (65 ft) tall and has a spread of 38 m (126 ft). It is known to local Maoris as Tewahao Rerekohu (The Mouth of Rerekohu). According to Ngatiporou tradition, it dates from the time of their female ancestor Rerekohu, who lived 13 generations ago.

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2 J. H. Johns, N.Z. Forest Service

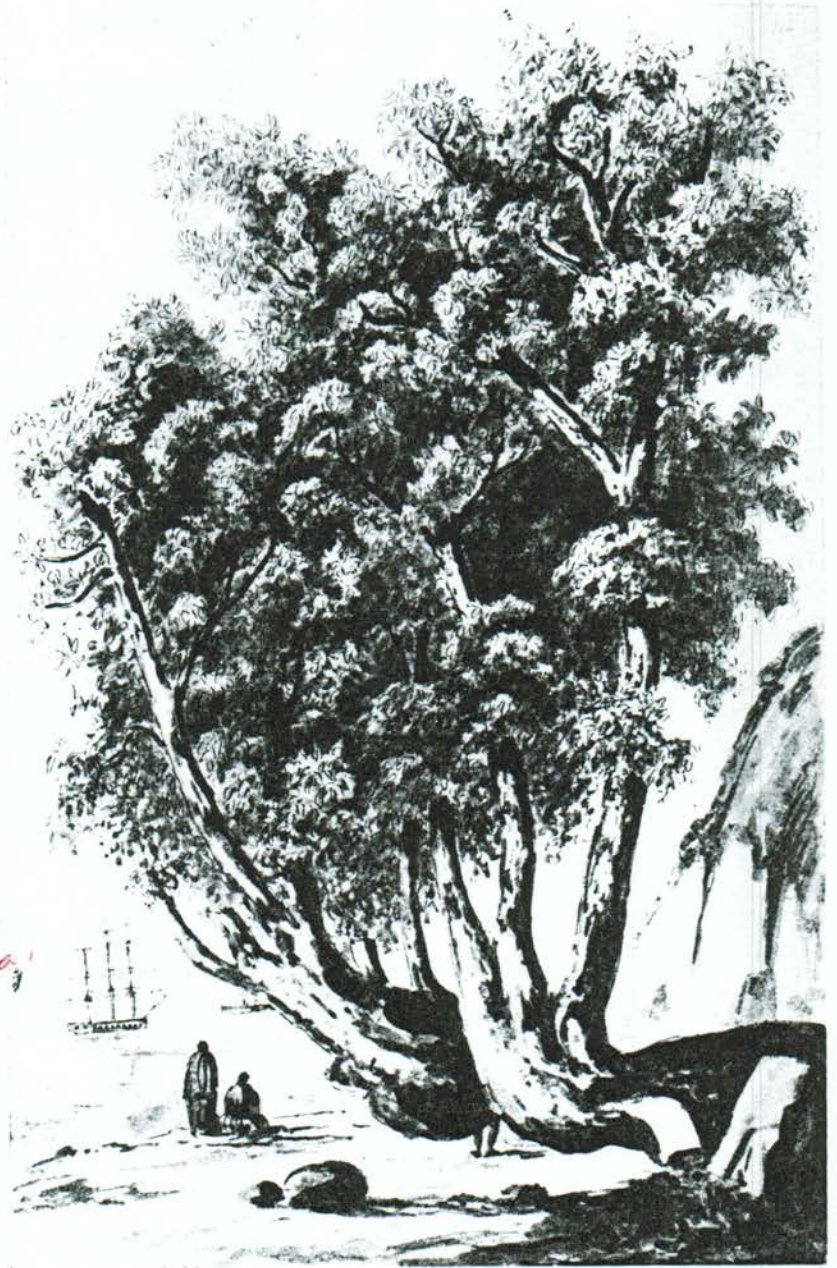
there are more pohutukawa trees in cultivation than in the wild state; this situation has already been reached around Auckland. On other stretches of coastline the species has almost been eliminated by opossums browsing the mature trees to death.

Spreading Roots

The seedling quickly puts down a long tortuous root which follows crevices and forms a firm anchorage. Unlike most trees, the pohutukawa seldom has a leading shoot throughout its life. Instead a number of limbs of equal rank radiate for 30 m (100 ft) or more from near the base of the plant, forming a rounded head. The hemispherical shape is maintained in spite of disrupting forces. Some trees growing on cliffs are undermined by marine erosion, but are not easily dislodged. The roots spread far and wide and the limbs, as if clawing for their lives, sprout roots wherever they touch the ground. The story of the threats to the pohutukawa's existence can be read from the distorted trunks. In its form of growth in these situations the pohutukawa is not far removed from a vine, and this is not surprising considering that many of the ratas, its closest relatives, are climbing plants. A further similarity is in the aerial roots, which hang in masses or wind their way down to take root near the tree's base.

Pohutukawa is a very distinctive species because of its ability to grow on exposed coastal slopes in the face of strong salt-laden winds, often with its lower limbs washed by the high tides. Possibly no other species of such size, outside the tropics, can thrive in these conditions. Because of this extreme tolerance pohutukawas frequently form a pure canopy, shielding a layer of shrubs (rangiora, houpara, kawakawa, coprosma) and tussock-like plants (gahnia, astelia, New Zealand flax). In less exposed sites up to several kilometres from the shore the typical coastal trees karaka and kohekohe may grow with pohutukawa. On the broken ground and in the wind channels, pohutukawa is more abundant.

Pohutukawa once grew on sandy soils also, but most of them have vanished from this habitat because of burning and felling. Some appear to have established on rocks which were later buried by drifting sand. The submerged branches have



British Museum

Vine Roots

climb

SAND?

mm

1 The pohutukawa has been a landmark of northern New Zealand since the first European settlement in the 1800s. This ink-and-wash drawing was done in the Bay of Islands in 1842 by an unknown artist.

2 After pollination, the ovary of the pohutukawa swells and splits into three. From the fruit a vast number of tiny seeds will be released.



N.Z. Forest Service

Pohutukawas on Little Barrier Island. A member of the Myrtaceae family, the pohutukawa is found most commonly on North Island coasts, and on shores of lakes on the Volcanic Plateau. Insets: The pohutukawa's flowers, massed into clusters on the tips of the branches, contrast vividly with the dark surrounding leaves.

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produced new roots and the trees have flourished in this changed environment.

Arise Around the lakes of the Volcanic Plateau and towards its southern limit in Poverty Bay and Taranaki, the pohutukawa is more scattered and does not form such pure communities.

No native plant can match the pohutukawa as a coloniser of volcanic lava although it has a counterpart, a member of the same genus, in Hawaii. On Rangitoto Island, near Auckland, pohutukawa was one of the first plants to establish on the bare lava lacking both soil and water. It has been suggested that many of today's larger trees took root on the fresh lava only a century or so ago.

Ornamental

Uses Pohutukawa timber was used fairly extensively in the past where hard, durable blocks of wood were required. The contortions of the limbs were ideal as knees for boats. But the main value of the species now is as an ornamental tree. Although best when in full flower, it has beauty at all seasons. In the spring it takes on a silvery green appearance as the down-covered shoots unfold.

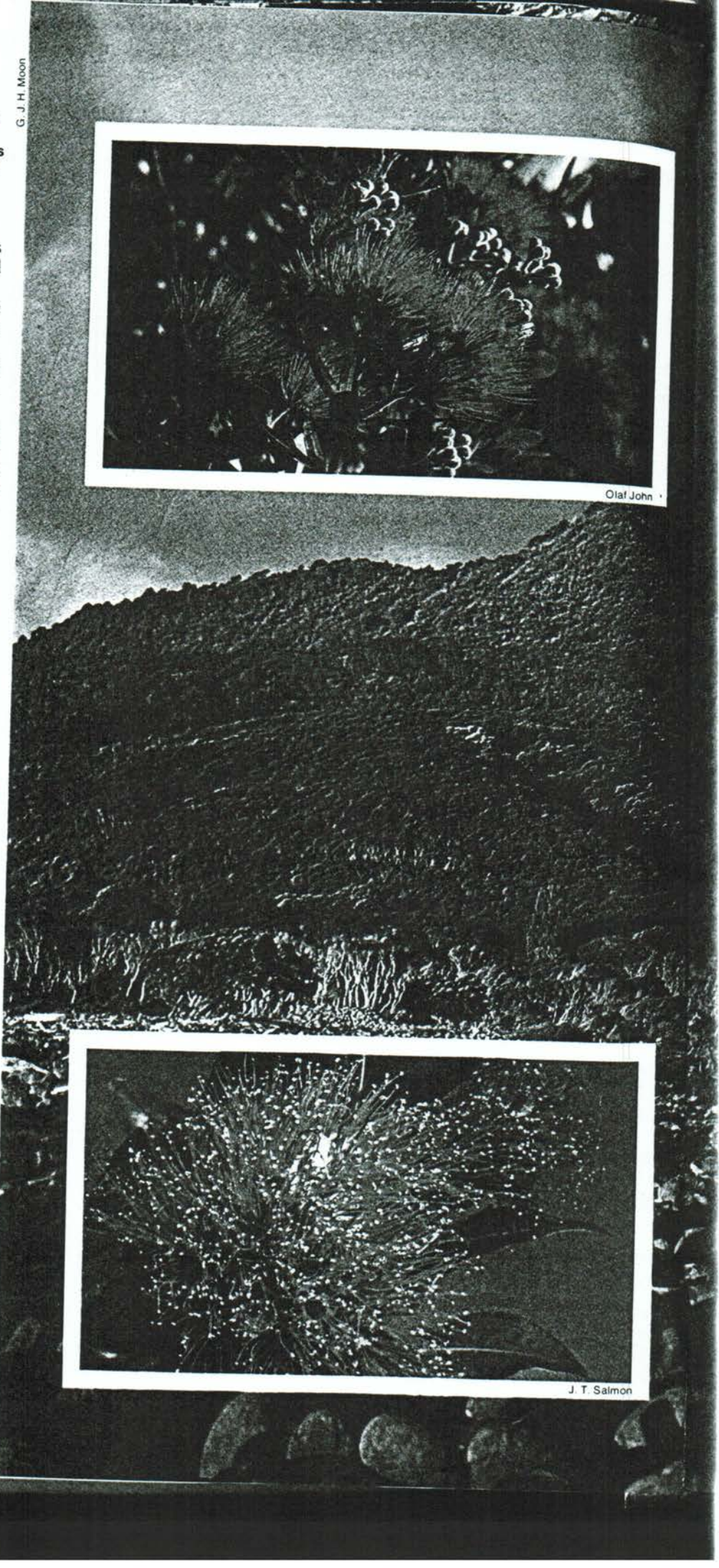
Wind-blown With this elegance pohutukawa combines adaptability. It can be grown in most lowland districts in the North Island and can be cut almost to the ground to sprout again if it becomes too large. Tolerance of wind-borne salt makes it especially useful on the coast. Many are used as street trees along with the Kermadec pohutukawa which has smaller leaves, smaller flowers — and a tendency to bloom at almost any time of the year. Pohutukawa hybridises freely with this species and with northern rata.

Thomas Kirk in his *Forest Flora of New Zealand* wrote: "The pohutukawa is, perhaps, the most magnificent plant in the New Zealand flora." The country has many magnificent plants and pohutukawa certainly ranks among them.

A. E. E.



Olaf John



J. T. Salmon

