



New Zealand Tree Broom

A Rare and Beautiful Native

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[The Tree or Weeping Broom is one of the most interesting of New Zealand's smaller trees. Originally published in the Journal of the Royal New Zealand Institute of Horticulture, in October 1935, Mr. Martin's article reached a few hundred readers, and we reprint it now in the belief that it is deserving of a much wider public.—Editor.]

IN February 1910, the late Mr. T. F. Cheeseman of Auckland received from Mr. George Stevenson of Clarence Valley, Marlborough, flowering and fruiting sprays gathered from a remarkable leafless tree hitherto unknown either to science or to horticulture, which grew near his home. For this tree it was found necessary to establish a

new monotypic genus, and a description both of the genus and the species appeared in the Transactions of the New Zealand Institute the following year under the name *Chordospartium Stevensoni*, the subject of this short paper.

The discovery was made on the "foothills near the mouth of the Clarence." Shortly after-

wards Cheeseman received further specimens from Mr. C. G. Teschemaker and from Mr. H. F. Hursthouse, both having secured them in the valley of the Avon, a tributary of the Waihopai River, itself a tributary of the Wairau River.

Now, as late as 1928, in the second edition of his "Vegetation of New Zealand," Dr. L. Cockayne writing of the Tree-Broom records that it is "confined so far as is known to two valleys in the North-eastern district." Thus nothing has been published concerning this unique tree since 1910, nor is there anywhere to be found an account of its distribution, its ecology, or its life history save the briefest mention in my "Vegetation of Marlborough" published in 1931.

We have said *Chordospartium* was unknown to horticulture, but there was one remarkable exception. It is a curious fact that this singular and beautiful tree was actually in cultivation in England, where it had flowered 'before it had been discovered in New Zealand' so to speak. It came about in this wise. Mr. Humphrey Weld, son of Frederick Aloysius Weld who was Premier of New Zealand in 1864-5, while a guest of Mr. C. G. Teschemaker at Avon Valley, Marlborough, both saw and admired two kinds of flowering broom indigenous to the district—one the so-called Pink Broom and the other the subject of this paper. He asked that ripe seed might be sent to his home at Chideock Manor, Bridport, Dorset, which in due course arrived,

and from which plants were successfully raised. As a result Mr. Weld had trees flowering in England before Cheeseman first described the tree and gave it its name. In 1927 seed was forwarded to Kew by Mr. Teschemaker and from this six plants were successfully raised.

Description of the Tree

Cheeseman, in his "Manual of the New Zealand Flora" speaking of *Chordospartium* says that it "entirely corresponds with *Notospartium* in habit." This however is far from being correct; so much so indeed that the two can be distinguished at distances of over a quarter of a mile. The more outstanding points of difference are these:—

1. The ultimate branchlets of *Chordospartium* are pendulous at all times, those of *Notospartium* being rather twiggy and erect or semi-pendulous except when very young or when weighted down with flowers or pods.
2. The Pink Brooms (*Notospartium* spp.) never develop a true vertical trunk and rarely reach arborescent proportions.
3. The Pink Brooms most commonly grow on the rocky banks of a stream, or on stony places on a steep hillside overlain with a thin veneer of soil; the Tree Broom on the other hand is an erect tree growing on alluvial soils.
4. The Tree Broom always forms an umbrella-shaped

tree, and this the Pink Brooms never do.

Chordospartium is a canopy tree attaining a height of twenty feet or more. At a height above the ground usually varying from two to five feet, the erect trunk forks or more usually divides into three main stems, each of which again branches similarly. This is repeated till a wide-spreading canopy of long, green, pendulous, leafless branches results. The tree is at all times leafless except as a one or a two-year old seedling.

The bark is pale grey in colour on the lower half of the tree, and the stems are circled every inch or two with raised rings, which I suspect correspond to periodic intervals of growth. These are particularly noticeable at a height of from 8 to 10 feet. Above this the stems are brown and conspicuously striate. They then become greener till terminated by the ultimate cladodes. These striate, grooved stems bear no small resemblance to those of the rather remarkable 'Stick-plant' (*Corallospartium crassicaule*) occasionally encountered on the shingle shores of Canterbury and Otago. Particularly striking is this resemblance in the case of the main stem of young, rigidly erect stems of *Chordospartium* 4 to 6 feet high.

According to Mr. H. F. Hursthouse, flowering occurs once every two years, and my own experience supports the view that flowering is not an annual event; Mr. Teschemaker says that longer intervals sometimes elapse, which is undoubtedly

true. From one or more nodes on the ultimate, pendulous branchlets a number of racemes, usually 1 to 3, of pale lavender, pea-like blossoms make their appearance in early December. Each of these is from 1 to 3 inches long and bears up to 20 flowers. Blossoming occurs as a rule in early January, though in the shaded valley of the Swale it occurs as late as the first week of February, while in cultivation in Blenheim blossoming takes place in mid-December. The seed is borne in short, rhomboidal, silky, indehiscent pods and is ripe about the latter half of April. Cheeseman's statement that the seeds take over a year to mature is quite untrue.

The largest tree measured by me had a girth, one foot above the ground, of 43 inches, corresponding to a diameter of over 14 inches. This tree was one of 20 growing in the valley of the Jordan River, some three miles from its junction with the Awatere River. The tallest tree measured, also growing in this area, was 25 feet high and had a spread of 20 feet compared with 24 feet in the case of the other. Cheeseman gives the diameter of the stem as 6 to 8 inches, but the average diameter of adult trees is between 11 and 12 inches. Indeed the first branch may be 10 inches thick.

Distribution of *Chordospartium*

As the Tree Broom is quite a rare plant confined to a narrow strip of country stretching across the Marlborough Province to which it is endemic, some facts relating to its present

known habitats are here recorded.

The two habitats mentioned by Cheeseman in the Manual mark the eastern and western limits of its distribution, but it is not restricted to these localities. It grows in the valley of the Grey which flows into the Awatere near Upcot, and again in the Jordan, a tributary of the same river taking its rise in the Camden Range. If one follows the pack track above this river it leads to the Medway, and to the Swale a tributary of the Clarence. In both valleys *Chordospartium* is to be seen, some fine trees growing near the shepherd's camp in the Swale. Further trees are known in the valley of the Jam, a precipitous stream rising in the Seaward Kaikouras. A thorough search of the numerous stream valleys leading into the Clarence from the Seaward and Inland Kaikouras would doubtless reveal other stations, but these are very difficult of access. The total of trees known to me in the area of distribution scarcely exceeds fifty, and it appears unlikely that the total number much exceeds 100.

Ecology

Every specimen of the Tree Broom known to me grows beside a stream at the base of a valley, and rarely more than a few feet above the ordinary level of the water. Thus of 20 trees in the Jordan Valley only two grow more than 6 feet above the stream level; and whereas the species of *Notospartium* which commonly grow in the

same area occupy rupestral stations rarely less than 6 feet above the water, *Chordospartium* is never found in such a station. On the contrary it is a plant of alluvial soil or of loamy soil near the base of a valley. Like the Kowhai (*Edwardsia microphylla*) or the lacebark (*Hoheria angustifolia*) the Tree Broom is intolerant of deep shade save in the earliest stages.

Though the seed germinates quickly after it falls, in nature seedlings are very rarely met with. This is to be attributed to the presence of stock, goats, and deer which are very fond of chewing the stems of the adult plants, and presumably eat down the seedlings, which spring up on free, damp, well-drained soil under or near the parent tree. Indeed, the only seedlings that have much chance of surviving to-day are such as germinate in a thicket or close to a bushy shrub. A fairly close search has revealed the existence of a very small number of seedlings or young plants in any area examined. On the roots of adult trees and to a lesser extent on the roots of quite young seedlings, nodules were present. The altitudinal range of the tree lies between 1000ft. and 2000ft.

Culture

In cultivation seed germinates freely under any specimen that has recently blossomed. If sown as soon as ripe in trays of nicely prepared soil, a good strike may easily be obtained. The first stem consists of a flat strap-shaped shoot from the margins of which true leaves

grow at intervals, while a long tap-root strikes deep into the soil. In the second year this shoot commonly turns to a straw colour, and the leaves either disappear or are replaced by very tiny leaves unless the tray has been kept in a very damp and shady situation. At this stage the seedling appears to have died and is apt to be discarded. If left alone, however, it will be found that it is still making growth, and the following year will usually see the first round stem of the adult stage pushing its way vertically upwards. For a time there are few branches and these too short to be pendulous, but by the fourth year the main physiognomic features of the adult have been established.

When cultivated in a rich garden soil, the growth remains spindly, and the shrub requires to be staked up for a time; but in such a station numerous long, pendulous branches develop rapidly and the plant acquires a graceful weeping habit which makes it a distinctive ornament to any garden. Flowering commences about the sixth year, and a well grown shrub in full flower is an attractive plant of which any owner may justly be proud. Each raceme bears upwards of 20 flowers of a pale

lavender shade, and the origin of yet another local name for this broom—Native Wistaria—is not difficult to explain.

When a large tree has been cut down, contrary to the usual result with most New Zealand trees, a large number of shoots sprout from the top of the stump, and such a decapitated tree may in a year or two develop a veritable dome of blossom. A large tree thus cut down and transplanted in the heart of summer to his home garden, was found by Mr. D. Lester of Avon Valley to grow splendidly in just such a manner.

As a shrub or as a tree, the New Zealand Tree Broom is well worth the attention of horticulturists, who, once they recognise its merits, may be the means of preserving a unique and rare plant, whose possible extinction even during this century is by no means an impossibility in its native habitats, through the agency of browsing animals and fire. In some cases the growth of a sward of introduced grasses also militates against the germination of the seed. Several large trees in the Jordan Valley were dead and others had fallen over due to recent undermining of the bank by the stream in periods of flood.

Fellows Elected

The undermentioned Fellows were elected at the November meeting of the Executive Council:

- HARLAND, L. R., 36 Kings Road, Mt. Roskill, Auckland.
- CAIRNS, G. W. T., 43 Puriri Street, Lower Hutt.
- HOLLOWS, J. A., 61 Botanical Road, Palmerston North.
- STEPHEN, W. G., 8 Hobb's Grove, Lower Hutt.
- GILLIAM, G. K., 97 Great North Road, New Lynn, Auckland.
- HAMILTON, R. G. I., 14 Rawene Avenue, Westmere, Auckland.
- NOTTAGE, I. L., 232 Great South Road, Remuera, Auckland.
- RAYMOND, Mrs. J. E., 30 Auckland Road, St. Heliers, Auckland.