strong tendency to begin at the base and continue to the apex, although the flowers of the central two-thirds of the inflorescence often open more or less together. (This contrasts with the flowering of *H. stricta* and *H. bishopiana* , where the flowers of an inflorescence open more or less together. Perhaps the large size of the *H. speciosa* flower and its relatively copious nectar means it must space out its flowering).

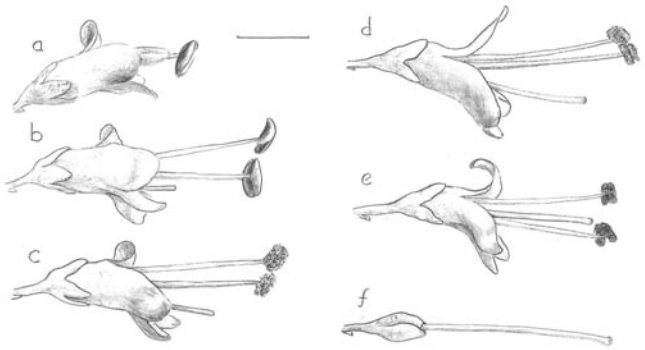

Fig. 1. *Hebe speciosa*.
Upper: a-f, floral development from bud-opening to pollen-shedding (c) to corolla-fall. Scale bar (a-f) 1 cm.

Each flower lasts for about a week (corolla-opening to corolla-fall). The development as shown here (Fig. 1 a-f) follows the protandrous mode usual in the genus.

What seems not to have been noted before concerns the stigma. In the first half of the flowering sequence, while the magenta-coloured anthers are shedding their pollen, the style is short and the stigma is barely if at all exserted. At this (presumably non-receptive) stage it has a truncate, non-papillose dark blue tip. Subsequently, while the anthers are shrivelling and turning dark blue, the style elongates and the stigma doubles in size (to c. 0.66 mm diam.) to become magenta-coloured, capitate-subspherical and conspicuously papillose.

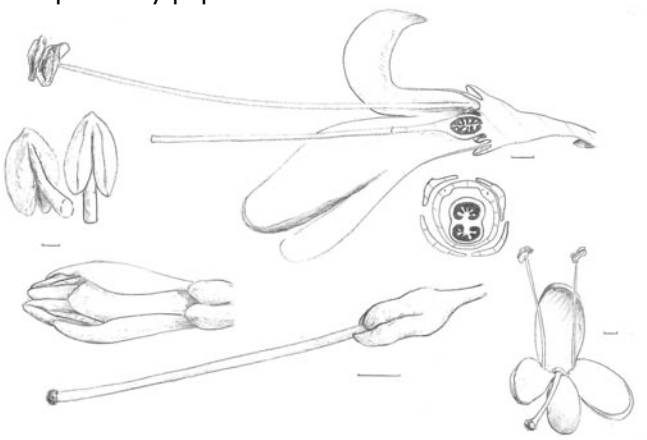

Fig. 2. Various aspects of the flower, including a floral diagram. Scale bars 1 mm.

The same enlargement of the stigma occurs in *H. stricta*. Perhaps this is usual in the genus but I can find no illustration that shows it distinctly. Lastly, I have several times seen in *H. macrocarpa* flowers that open with their stigma already shortly exserted. Rare examples of protogyny in this part of the genus, perhaps? But not knowing what I do now I did not check to see whether those stigmas were in the swollen state.

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The story of *Geranium gardneri*

Rhys Gardner

In 1978, while I was working at DSIR's Mt Albert Research Centre, Alan Esler showed me a fine tap-rooted geranium he and his technician Lynne Scott had found in cliff-edge grass at Glover Park, St Heliers. It resembled a (somewhat less handsome) plant that seemed to be spreading around Auckland, on the volcanic cones and Gulf islands, and also as a garden weed. Guessing that one or both might also occur in south-east Australia, we tried to identify them using Willis's "Handbook to the Plants of Victoria" (one of Alan's secret weapons) . But both plants keyed out there to the one name, *Geranium solanderi*. Nor did things become clearer when Carolin's (1964) revision of the genus in Australasia was consulted.

I got early New Zealand specimens from the British Museum (Natural History) and Kew and found that the Glover Park plant matched the collections of Banks and Solander and the Forsters. This is the true *G. solanderi* (*G. pilosum* of the standard NZ Floras). The other was first represented in the early collections only in the 1860s. This and its weedy tendencies suggested that it might well be adventive to New Zealand.

A couple of good-sized loans from the herbaria at Sydney contained specimens that matched our weedy plant well, but also, others that were problematic. So I just gave it the tag-name *G. solanderi* "coarse hairs", and begun waiting for the time when the Australians would have pay for their sins. A treatment in the new Flora of Victoria (Smith & Walsh 2003) began this process, with "coarse hairs" and some other taxa accepted as distinct species. At last, to emphasize that "coarse hairs" was the only member of the complex present on Norfolk Island (and that it was adventive there too), Peter de Lange (de Lange et al. 2005) gave it the name *G. gardneri.*

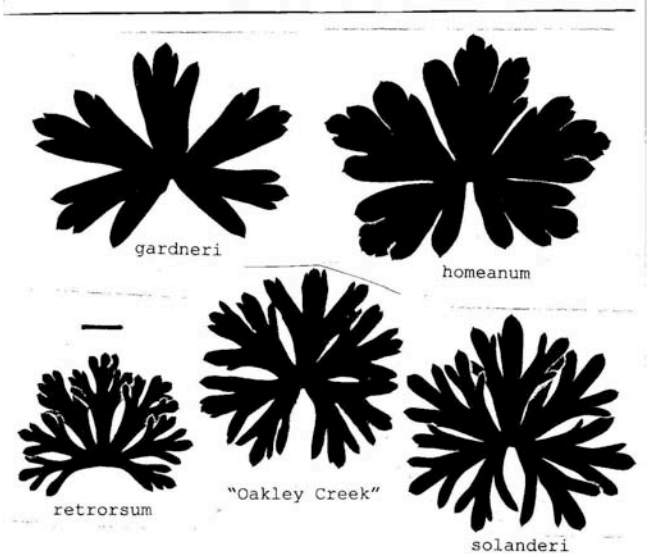

Fig. 1. Leaf-blades of some Auckland geraniums. Scale bar 1 cm (drawn by ROG).

The epithets "*gardneri*" and "*solanderi*" have a pleasing assonance, I can't resist saying. Unfortunately, when *G. solanderi* was introduced in 1964 as a replacement name for the illegitimate *G. pilosum* its author did not take cognisance of the traditional latinization "*solandri*" (as in *Nothofagus s.*, etc). Again unfortunately, the current Rules of Nomenclature do not allow a correction to this latter spelling.

Peter and I have noted that *G. gardneri* is still increasing its range, e.g., down the West Coast of the South Island — a strong indication of its adventive status, we think. Just as interesting is that *G. gardneri* doesn't seem to be as threatening a weed as it appeared to be in the 1980s. I do not know the reason for this - certainly it is not nearly as susceptible as *G. solanderi* and *G. retrorsum* to grazing by rabbits or slugs and snails.

The story of adventive Australian geraniums in Auckland is not over. Early in 2004 I found another such plant in the suburb of Wesley, along the top of the basalt blockwork that lines Oakley Creek. It has an only slightly swollen taproot, flowers about the size of *G. gardneri*, shallow and only slightly elongate seed-coat alveolae, and petiole-hairs that are slender and appressed like those of *G. homeanum*. Although it is not uncommon at the above site, and has spread a little in my garden, it seems not to have turned up anywhere else in Auckland. Anyone wanting to see it at Oakley Creek should hurry, since the area (immediately east of Alan Wood Park, grid ref. NZMS 260 R11 630768) is part of the Onehunga-Waterview S.H. 16 motorway now under construction.

Geranium gardneri and its relatives are tap-rooted perennials of grassland and light forest. Their "basal" leaves are produced in winter from a short stem and last into early summer, when they start drying off. Axillary shoots appear in spring. Growing up to half a metre so long these bear flowers in pairs, which generally self-pollinate to give a full set of seed. Then, like the basal leaves, the shoots die back completely. The shape of the leaf-blade — the degree of dissection and the shape and width of the lobes — is a useful visual clue to identity (Fig. 1.).

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Thelymitra matthewsii Cheeseman - One of Northland's special orchids

Anne Fraser

Prior to 1910 the Matthews family, R.H. Matthews and his sons of Kaitaia, had discovered the small terrestrial orchid now known as *Thelymitra matthewsii* in the heathland adjacent to the then Lake Tongonge to the west of Kaitaia. The plant was like no other with its spiral leaf inflated at the base and curled about the stem, the beautiful deep purple flower and the prominent golden anther and fleshy column arms (Fig. 1, 2, 3). As Matthews recognized that the species could be a new to science he sent samples to the eminent botanist T.F. Cheeseman, who agreed that it was new and named the species for Matthews. Cheeseman commented that it was 'a charming little plant worthily dedicated to its discoverer' (Cheeseman 1910).

Later, as the environs of Lake Tongonge were drained and the heathlands converted to pasture, the orchid disappeared, the last known collection being a herbarium sheet in 1923 (AK 70809, pers. comm. E.K. Cameron, Auckland Museum). As it had not been reported from anywhere else, the species was considered extinct (Given 1981, Johns and Molloy 1983)

Sixty-four years later, in 1987, *T. matthewsii* was re-discovered by D. McCrae while carrying out an orchid