OLEARIA ON BANKS PENINSULA

Hugh Wilson
Hinewai Reserve, RD3 Akaroa 7583

The genus *Olearia*

Olearia is an Australasian endemic genus of shrubs and small trees in the daisy family Asteraceae (also known as Compositae). As presently defined, the genus comprises around 180 species, the majority of them in Australia. New Guinea has perhaps 25 species.

New Zealand has nearly 40 species, all endemic. They range from small trees to low shrubs. Some are small-leaved divaricating shrubs; others have much larger leaves and more "normal" architecture. Most are evergreen; a small handful are deciduous. Most have alternate leaves, but a few have opposite leaves. Some have large daisy-like capitula with showy ray florets, but some lack ray florets altogether. One common widespread species, *O*. *paniculata*, has tiny capitula arranged in a branching inflorescence that does not look at all like a daisy. Each tiny capitulum has only a single tubular floret, a feature shared with the more local *O*. *coriacea*.

While all the New Zealand species are reported to have 108 chromosomes, *O*. *nummulariifolia* (but not its close relative *O*. *cymbifolia*) has double that number, and *O*. *paniculata* was counted at "about 288".

Some botanists suspect that on further study *Olearia* might well be split into more than one genus. Hybrids within and between informal groupings of species might help to elucidate this. A few specimens have been collected that are clearly hybrids (sterile ones) between *Olearia* and *Celmisia*. In 1969, David Drury discussed the similarities of "macrocephalous" *Olearia* (those with big daisy flowerheads) with the sub-Antarctic megaherbs *Pleurophyllum*. The Marlborough rock daisies were originally placed within *Olearia* in 1855 by J. D. Hooker as *O*. *insignis*, but in the 1920s T.F. Cheeseman erected the genus *Pachystegia* for these plants. David Mabberley in the third edition of his wonderful "Plant Book" puts *Pachystegia* into synonymy with *Olearia*.

Whatever taxonomic decisions are made in future about these daisy shrubs, there is no doubt about how beautiful and fascinating they are. There is an intriguing feature too about their distribution in the wild: many of the species seem to be extraordinarily local. This is certainly true of New Zealand, and seems to be true also of Australia and New Guinea. The achenes are wind-dispersed, so such limited distributions are not easily explained.

Banks Peninsula species

Eight species occur naturally on Banks Peninsula (localities illustrated for seven; Fig. 1, p. 27), although several others are commonly planted in gardens. I have also recorded three rare hybrids among the native species. I list all the species and hybrids below, with a few comments on each. There are other Banks Peninsula representatives in the same tribe (Astereae) of the daisy family, namely species of *Brachyscome*, *Celmisia*, *Lagenifera*, and *Vittadinia*. *Celmisia*, the most closely related of these genera to *Olearia*, is represented on the Peninsula by three species, including the handsome *C. mackaui*, a very local endemic restricted to the Peninsula's southeast corner.

Olearia arborescens

Widespread through New Zealand on North, South and Stewart islands, this species is very local on Banks Peninsula, restricted to cool-temperate scrub and forest on and near Mount Herbert / Te Ahu Pātiki. The flowerheads are small white daisies in clusters, conspicuous and showy in a good flowering year when they can almost obscure the foliage.

Olearia avicenniifolia (mountain akeake)

Widespread through the South and Stewart islands, populations are for some reason scattered only here and there across Banks Peninsula from the southern end of the Port Hills to the southeast coast. Altitudinally, it ranges from sea level up to at least 600 m, but it is absent from large swathes of apparently suitable habitat, and is only locally common. Hinewai Reserve boasts one of the largest populations.

Olearia bullata

Earlier this species was known as *O. virgata* var. *rugosa*, but it is certainly a distinct species. It is a South Island endemic, found in upper cool-temperate shrubland and scrub east of the Main Divide. However, it is markedly local on Banks Peninsula. The biggest population is on Mount Sinclair / Tarawera, but it also grows in the upper Peraki Valley under Puaitaha / Saddle Hill, on Carews Peak, and on Stony Bay Ridge in Hinewai Reserve.

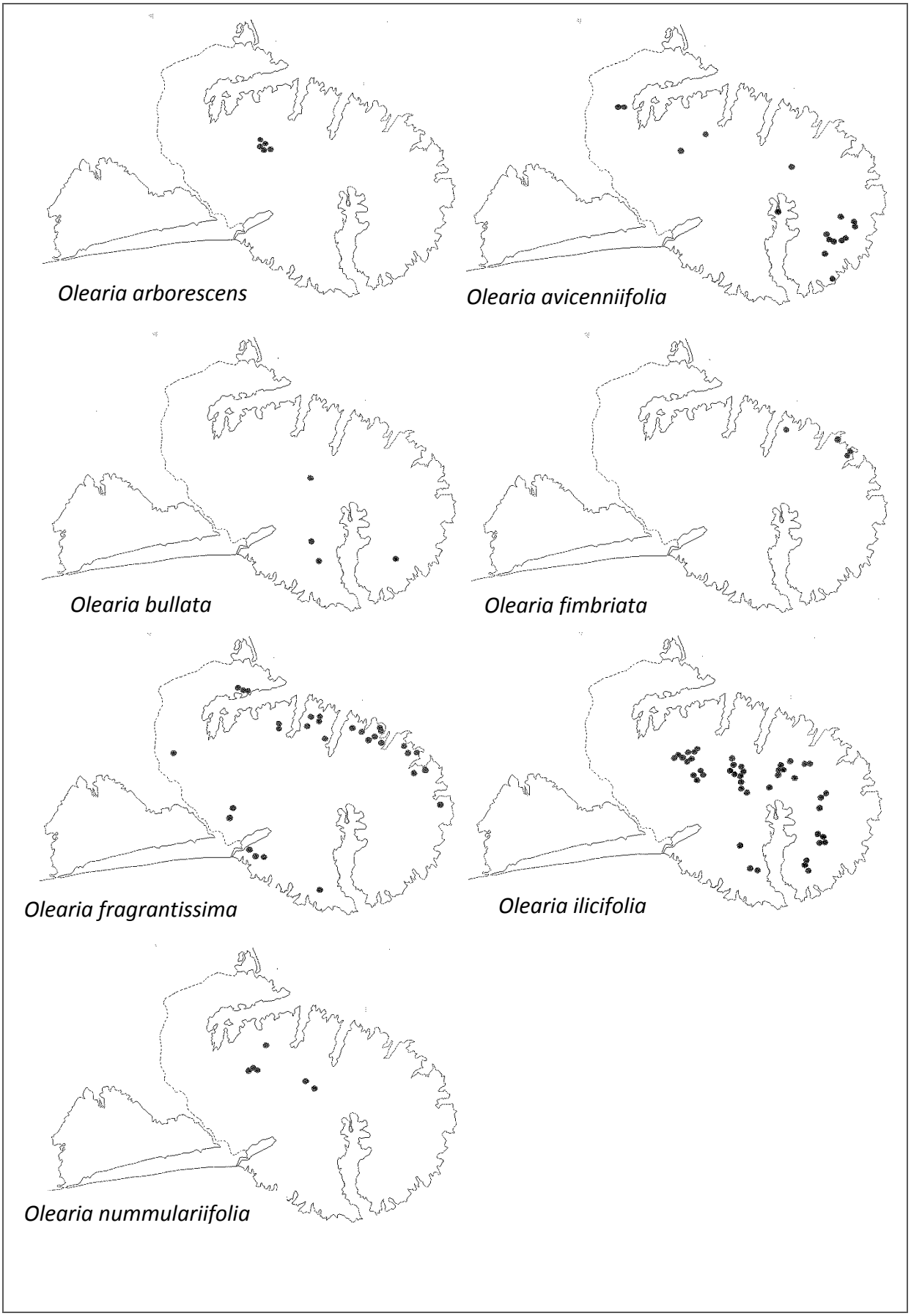

Figure 1 Localities on Banks Peninsula of seven of the eight naturally occurring *Olearia* species.

Olearia fimbriata

During my botanical surveys of Banks Peninsula in the 1980s, I found only one plant of this species, on a rocky hillside between Pigeon Bay and Menzies Bay. Philippa Horn was my enthusiastic field assistant that day and shared the excitement. We identified it as *O*. *odorata*, but Michael Heads later pointed out to me that the specimen belonged to a similar but at that time un-named species. First recognised in the field by Brian Patrick, it was known for a time by a nickname "Poma" after the Pomahaka River in southeast Otago. In 1998 Michael Heads formally named it *O*. *fimbriata*, referring to a distinctive feature of the capitulum: the phyllaries have fimbriate or hair-fringed margins.

In 2001, Geoff Walls found a population of at least 50 plants near Northwest Bay (Okains). Here it grows in close proximity to another small-leaved shrub, *Pittosporum obcordatum*, rediscovered by Melissa Hutchison in 2012, 170 years after Raoul described and named the species from "Akaroa" in the 1840s. Jorge Santos of Motukarara Nursery at the time also found *O*. *fimbriata* at Raupō Bay. The species is now known from scattered localities in the South Island from just north of Banks Peninsula southwards to Southland, overlapping with *O*. *odorata* through much of this range. *Olearia odorata* is more common, and extends further north into Marlborough.

Olearia fragrantissima (fragrant tree daisy)

Many plant species reach their southern natural limit on Banks Peninsula, but the fragrant tree daisy has the unusual distinction here of being at its northern natural limit. It is the only deciduous Olearia on the Peninsula, and also surely the most deliciously scented. The little golden, almost globular clusters of florets, each cluster only a centimetre or so across, smell of peaches or fruit salad in late October and November. While not rare, *O*. *fragrantissima* is far from common, distributed in light forest or scrub around the drier perimeter of the Peninsula, up to about 300 m. It completely avoids the higher, moister interior, and even the southeast coast, which is damper than average.

Olearia ilicifolia (hakeke / mountain holly)

This species is somewhat local on Banks Peninsula, but in some places it is abundant in upper, cool-temperate and subalpine scrub. Here and there it extends to lower altitudes as one or two opportunistic bushes, down to about 230 m. The flowerheads are small white daisies, each barely 1 cm across but in clusters several centimetres wide, not as showy as in *O*. *arborescens*, but certainly attractive.

Olearia nummulariifolia

Although not as local as *O*. *arborescens* on Banks Peninsula, this rounded, bushy, evergreen shrub is known only from Mount Herbert / Tarawera. Banks Peninsula plants have leaf margins more strongly downrolled than in many populations elsewhere. They have sometimes been identified at *O*. *cymbifolia*, a related but distinct species of South Island mountains. *Olearia nummulariifolia* has twice the chromosome number of *O*. *cymbifolia*; it is found in both North and South islands, also on Stewart Island, but is extremely local and rare there. *Olearia cymbifolia* is a South Island endemic. The two species are sympatric in some South Island places, such as in Mount Cook National Park.

Olearia paniculata (akiraho)

Akiraho is the commonest and most widespread of the eight *Olearia* species native to Banks Peninsula, growing on banks, bluffs, forest margins, and in scrub and forest, typically on steep rocky ground from the coast up to about 760 m. The local form has greyish green leaves. Unfortunately, plants originating from the North Island have been planted in some Banks Peninsula reserves in the past. They have brighter, yellow-green leaves that tend to be smaller, with wavier edges. The same form is often used as a hedge plant in gardens.

Akiraho flowers remarkably late in the summer, from September to May, with seed ripe from April to June. The flowers are not at all daisy-like as each capitulum, borne in branched flower clusters, has only a single floret. These are strongly and pleasantly scented.

Banks Peninsula hybrids

Only three hybrid combinations are so far recorded from Banks Peninsula, and two of these are not from truly wild situations. The truly wild hybrid is *Olearia nummulariifolia* × *paniculata*.

Another hybrid originated in the Hinewai arboretum where *O*. *bullata* and *O*. *ilicifolia* are grown a few metres apart. These species flower at the same time (December – January). Seed collected from the *O*. *bullata* bush in early 2012 was germinated at Motukarara Nursery. The resulting seedlings were variable, but all were clearly *Olearia bullata* × *ilicifolia*, leaving no doubt that *O*. *ilicifolia* was the male parent and implying that *O*. *bullata* pollen was incompatible with stigmas on the same bush. I planted one of the hybrid

saplings (Fig. 2) in our arboretum, but it has shown a lamentable lack of hybrid vigour.

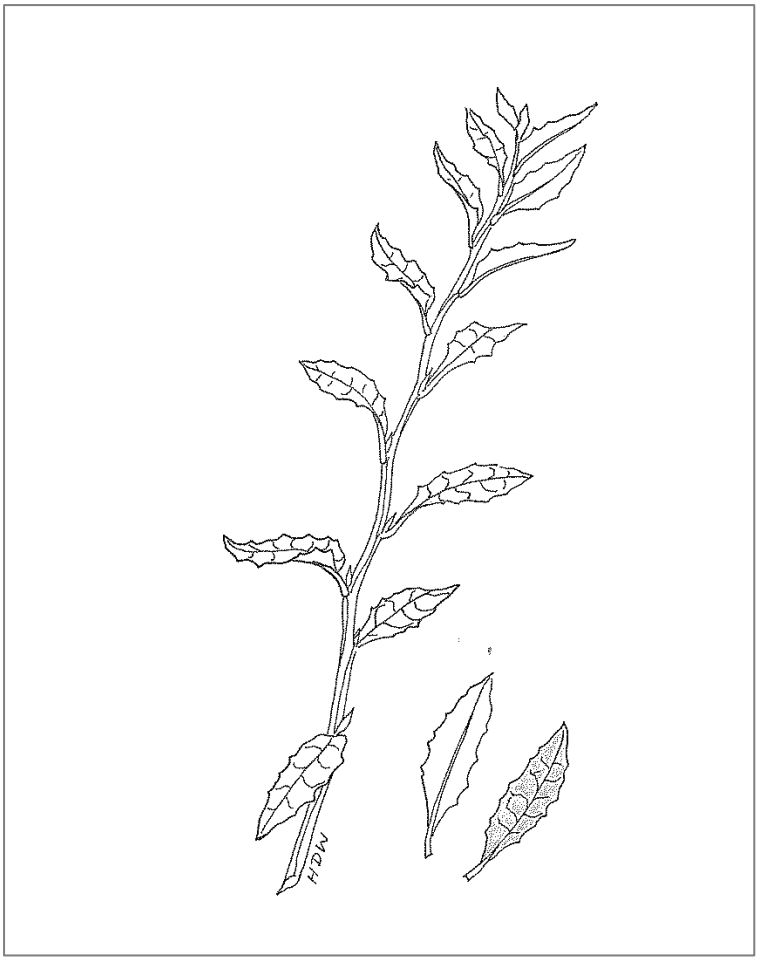

Figure 2 Line drawing of the *Olearia bullata* × *ilicifolia* hybrid.

Colin Burrows wrote to me on 28 December 2012: "I think we have an *Olearia arborescens* × *paniculata* hybrid on Quail Island. Its leaves are two or three times the area of *O. paniculata* and there are sharp teeth on the margins. It came from Motukarara Nursery".

Neither of the last two hybrids has been noted in the wild, but both could easily occur. *Olearia bullata* grows naturally close to *O. ilicifolia* at least on Mount Sinclair / Tarawera, and *O. arborescens* meets *O. paniculata* on Mount Herbert / Te Ahu Pātiki.