animals for the sake of the pimelea, because they are unnaturally maintaining seral vegetation. At Woodhill this is an argument to retain open buffers of at least 100m around the native forest stands rather than maintaining dense pine plantations right up to the boundaries. In this way seral species, like this pimelea (and also *Pseudopanax ferox* at Woodhill), would be able to spread into new open areas, as they would have done when the dunes were mobile. The current culling of feral goats at Great Barrier will probably restrict the pimelea to the cliffs and cliff tops. Important for its success at all these sites will be controlling weed species like pampas grass, so that the open habitats remain available to the pimelea.

Up-to-date surveys of some of the more historical sites where suitable habitat may still occur may provide some more extant regional records, e.g. at Te Henga, Kawau Id, Ponui Id and Little Barrier Id. Also early successional sites need to be valued more highly for conservation, instead of subjecting them to incompatible land uses (e.g. pine planting on the Woodhill dunes). But securing suitable habitat is only part of the solution; these sites will also require active management (e.g. to maintain seral vegetation, control weeds, and possibly assisting seed dispersal). Are we up to the challenge?

**Acknowledgements**

Fred Littin for guiding me around Windy Hill coast and for details of his later two surveys; curators of CHR, NZFRI, WAIK and WELT herbaria for their label data of herbarium records; comments on a draft of this article by Peter Bellingham, Peter de Lange and Bec Stanley; and Little Windy Hill Company for excellent accommodation and Judy Gilbert for encouragement to survey the Little Windy Hill pimelea population.

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# *Tolpis barbata* (Asteraceae: Lactuceae)

**Mike Wilcox**

This plant first came to my attention on the scoria slopes of Mangere Mountain. It is conspicuous there in summer, its pale lemon-yellow flower heads setting it apart from other, deeper yellow-flowered composites, namely hawksbeard (*Crepis capillaris*), catsear (*Hypochoeris radicata*) and hawkbit (*Leontodon taraxacoides*). One thing I noticed was that the flowers were all fully out one day (sunny) and completely closed the next (dull) – so *Tolpis* is obviously a "sun flower", with a phototropic response. It grows only on rather bare, sunny rocky sites, commonly accompanied by *Polycarpon tetraphyllum*, *Echium plantagineum*, *Aira caryophyllea*, and *Geranium purpureum*, and is unable to get established and compete on grassy sites. It also grows on rocks at Otuataua stonefields. It is confined to rather bare scoria and rock outcrops and was recorded by Cheeseman (1883) between Penrose and Panmure, though first seen in 1868. It was noted by Esler (1988) to be still fairly localised on gravel and scoria. I also have seen it on Mt Richmond (Otahuhu) and Mt Wellington.

Vegetatively it is a very open, stalky sort of annual plant with lengthened, spreading, leafless branches, growing to about 30 cm tall, with the flower heads in open umbels. In the seedling stage, the leaves form a rosette, with the cotyledons lengthened and spoon-shaped, and the leaves greyish, entire, ovate or triangular, or irregularly dentate.

*Tolpis* includes approximately 12-20 species distributed primarily in southern Europe, Middle East, and Africa with most species (10) confined to the Macaronesian archipelagos of the Azores, Madeira, Canary Islands, and Cape Verde Islands. In New Zealand, the sole representative is *Tolpis barbata* subsp. *umbellata* (Bertol.) Jahandiez & Maire [Catal. Pl. Maroc 3: 828 (1934)], rather than the nominate subspecies *Tolpis barbata* (L.) Gaertner subsp. *barbata*, the main distinguishing feature being that the flower heads are uniformly yellow in our populations (*umbellata*), not yellow with reddish or brownish inner flowers (*glabra*).

In France, *Tolpis barbata* subsp. *umbellata* is classified as a rare and endangered plant in certain regions (e.g. Brittany, Limousin) and is a protected wild flower by government decree. It goes under various common names , including Doldenblütige Tolpis (Germany), oeil du christ, trepáne barbue (France), olho-de-mocho (Portugal), and radicchio ombrellato (Italy). It also occurs in Spain and Morocco. It is sometimes called yellow hawkweed, but in New Zealand, the official name appears to be tolpis (NZ Weed & Pest Control Society 1969).

**All photos: *Tolpis barbata* in flower on Mangere Mountain. 4 January 2003.**

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# Needle-grasses and nasellas (Gramineae: Stipeae)

**Rhys Gardner**

Last year, a number of these grasses were brought in to AK herbarium by biosecurity officers of the Auckland and Bay of Plenty regions. Their collections of *Austrostipa ramosissima* and *Stipa gigantea* provide first New Zealand records, though the latter appears to be known here only as a cultivated plant, so far.

The treatment of the stipoid grasses in Flora NZ V (Edgar & Connor 2000) is not straightforward. One faces first a key to a dismembered *Stipa*, its parts being treated as the genera *Acnatherum*, *Anemanthele*, *Austrostipa*, *Nasella* and *Piptatherum*. The key characters are those of the florets. But the usual patience and hand-lens may not suffice for the keying-out of some taxa.

A problem comes in the first couplet, which deals with the character of the lemma:
Margins of lemma overlapping; lemma 5-7-nerved, *versus*
Margins of lemma contiguous; lemma 3-nerved.

These lemmas are thick, and often hairy and silicified too, and their nerves can only be determined by dissection; there is no ribbing that might be visible with a x 10 lens. So one depends on the nature of the margin, and it is here that two species fall into the wrong lead. In my observation, our coastal *Austrostipa stipoides* never has overlapping lemma margins. And our forest grass *Anemanthele lessoniana* sometimes has contiguous lemma margins as required, but sometimes these are overlapping, at least distally and before the lemma becomes expanded by the developing grain.

The next problem comes in the second couplet, with the second-mentioned but easier-to-use character that separates *Austrostipa* from *Nasella* being:
lemma coriaceous ... *Austrostipa*
lemma silicified, tuberculate ... *Nasella*

The three nasellas now found in New Zealand do possess a lemma densely encrusted with purple scabrities and tubercles (something like a orc's tuxedo, perhaps). But so do *Austrostipa verticillata* and *A. ramosissima*, and although their stiffening is not as extreme as in, for example, *N. trichotoma*, one would probably not describe these lemmas just as coriaceous (as in, say, *Austrostipa stipoides*, where tubercles are lacking).

A third problem comes in the last couplet, which distinguishes between the two genera whose florets have a deciduous awn, that is, the native *Anemanthele* and the Eurasian *Piptatherum*:
Floret laterally compressed; stamen 1 ... *Anemanthele*
Floret dorsally compressed; stamens 3 ... *Piptatherum*

As grass florets go, these are not exceptionally small (c. 2 mm long) but they are certainly small enough to make the shape difference hard to detect with a lens. Luckily there are easier differences to use, at least as concerns the single weedy species of *Piptatherum* in New Zealand.

Presented below then is a simplified key to the stipoid grasses in the Auckland region, that is, it omits those found only in the South Island (mostly in Marlborough and Canterbury). Also included in the key is the non-stipoid *Microlaena polynoda*, bush rice-grass. In Flora NZ V, in the accounts of *Anemanthele lessoniana* and *M. polynoda*, it is noted that these two unrelated native grasses might be confused with one another, but no hints for the novice are given.