

Identifying *Deyeuxia avenoides* and *D. quadriseta* (Gramineae)

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These two native grasses are sufficiently alike in habit, leaves, ligule and inflorescence as to make it wise to check any field identification by the dissection of a spikelet. Elizabeth Edgar's meticulous descriptions (Edgar & Connor 2000) contain three critical features: the length of the lemma compared to that of the two more or less equal glumes; the degree of elongation of the lemma apex; and whether or not there is a curious little plumose elongation of the spikelet axis, the rachilla prolongation.

The species may be characterized:

D. avenoides Lemma \pm as long as glumes; lemma apex usually elongated into two small bristles (that come from the inner pair of lateral nerves) but sometimes two very small additional ones from the other pair of laterals, or sometimes the lemma apex \pm entire and acute; rachilla prolongation almost always present as a strap-like structure, 0.5-1 mm long, its upper part with long hairs that reach halfway or more up the lemma.

D. quadriseta Lemma c. 3/4 length of glumes; lateral nerves of lemma usually excurrent into four bristles

of up to c. 0.5 mm long; rachilla prolongation almost always lacking, always less than 0.3 mm long (including its hairs, if any).

Tips for a successful dissection are as follows:

1. Grass spikelets, especially dry ones, are exasperatingly evasive; detain them on a piece of double-sided sellotape stuck to a microscope slide or card. Then observations can be made and remade and a library of named specimens built up.

2. Whether or not the glumes exceed the lemma is easily ascertained, but be sure that the lemma (the floral scale that bears the awn on its back) and its more internal parts, i.e. the floret as a whole, has not come loose at its base, as happens naturally when the floret readies itself for dispersal.

3. The bristles at the apex of the lemma are tricky to examine, even the larger ones of *D. quadriseta* mostly being quite a bit less than a millimetre long. A compound microscope could replace the handlens here. Also, since the palea is almost as long as the lemma its tip could be mistaken for part of the latter; the tip can be entire and acute but is sometimes bifid

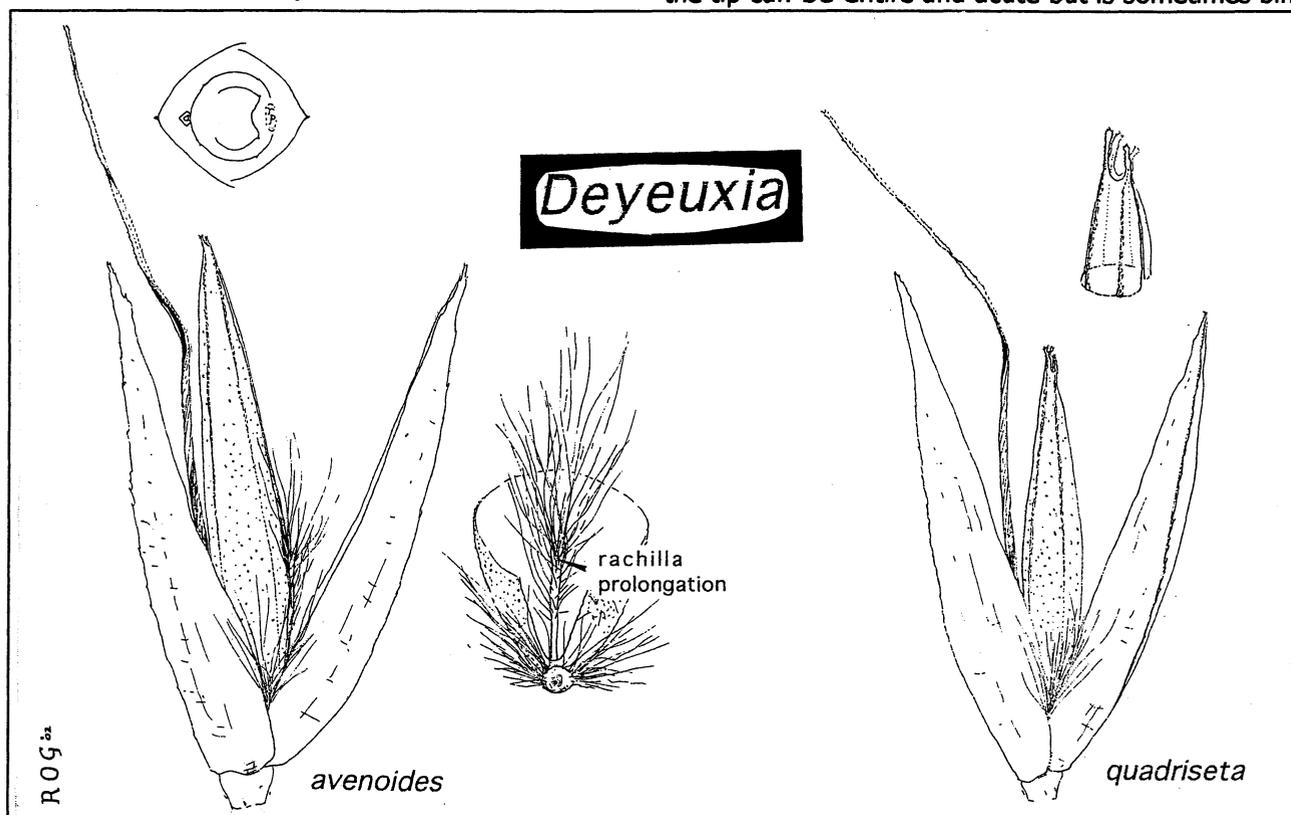


Figure 1: *D. avenoides* and *D. quadriseta*.

***D. avenoides* Spikelet x 15; enlargement showing rachilla prolongation (not to scale); AK 4098, hab. Taurewa. In the floral diagram note the awn attached to the back of the lemma and the rachilla prolongation situated opposite.**

***D. quadriseta* Spikelet x 15, AK 207089, hab. Te Paki; enlargement showing lemma apex, AK 230458, hab. Chatham I., x 25.**

and then, in *D. avenoides*, can cause one to suppose there might be four rather than two bristles to the lemma apex.

4. Finding the *D. avenoides* rachilla prolongation for the first time is a memorable experience. It is located at the front of the lemma, i.e., on the opposite side to the awn. The back of the palea has a deep groove in which it stands. Its long hairs are conspicuous, but do not confuse them with the hairs that arise from the edge of the callus; these latter ones do not exceed c. 1/3 of the lemma. Sometimes too in dissection the sides of the lemma shatter to form

longitudinal strips but these do not carry hairs.

D. quadrisetata used to be "very common" in Auckland's original grassy and scrubby bracken cover at the time of European settlement (Kirk, cited by Esler 1991). Nowadays it has to be searched for, in the gumland scrub and road cuttings of the Waitakere foothills and along the clay clifftops of the Manukau.

D. avenoides was not mentioned by Kirk; to judge by the AK collections Great Barrier would seem to be its stronghold in the larger region.

References

- Edgar, E., Connor, H. E. 2000: Flora of New Zealand. Vol. V Gramineae. Manaaki Press, Lincoln.
Esler, A. E. 1991: Changes in the native plant cover of urban Auckland, New Zealand. N.Z. J. Botany 29: 177--196.

Calystegia tuguriorum in Auckland

Mike Wilcox

Calystegia tuguriorum (Forst.f.) Hook.f. (Convolvulaceae) is one of the native bindweeds. It also occurs in Chile. The small heart-shaped leaves, showy white flowers and yellow seeds are characteristic. The leaves are sometimes blistered through attack by an insect or mite. In Auckland, this low scrambler is usually encountered on basalt volcanic rock terrain, typically at forest margins or in open, rocky sites. It is plentiful in the rock forest at the Otutaata Stonefields, Mangere, has been recorded from Almorah Rd rock forest in Mt Eden, and is abundant in the crater of Mt Wellington where it is a fine sight when in full bloom. Ti Point, Whangateau Harbour, is another place where it occurs, again on open rocky outcrops.



Calystegia tuguriorum, Mt Wellington crater, 11 Dec 2001