How they do dangle - the nuts of cutty grass and some other sedges

Rhys Gardner

The spikelet of a cutty grass (*Gahnia* spp.) is a tight ovate cluster of scales with 1-2 flowers, and at maturity bears a solitary terminal nut, with the staminal filaments of this flower remaining firmly attached to the nut base. "Ingenious" researches by the German taxonomist Benl (see Kern 1971, for an English summary; see also Cheeseman 1914) found that there are several different ways of displaying the distinctively coloured nuts. Our gahnias, and three other of our sedges, show two of these mechanisms.

We have:

A. The braiding-mechanism - *Gahnia* spp., *Machaerina sinclairii*. After anthesis the filaments around the maturing nut lengthen greatly and become entangled with others from different flowers. In those gahnias with 2-flowered spikelets the entanglement is primarily with the already-lengthened filaments from the male flower, which remain attached to the spikelet axis, so when the nuts eventually fall free of their surrounding scales they are dangled at "double arm's-length", rather like a trapeze artiste and her catcher. *Machaerina sinclairii* has several-flowered spikelets and may show a similar formation (see the Figure, but I do not believe that the dangling is always as regular as this). *Gahnia lacera* has 1-flowered spikelets, and the entanglement of the filaments is with those of other spikelets and with the glume apices and spikelet axes, to make a fluffy, nut-bearing mass.

B. The fixing-mechanism - *Baumea tenax, Morelotia affinis*. After anthesis, the apical edges of the uppermost glume inroll strongly to clasp the staminal filaments about their middle. The lower glumes may fall, but this uppermost one persists. The nut then comes loose and dangles, held by the filaments and sometimes also by the style. In *Baumea tenax*, the uppermost glume spreads widely at maturity and the nut either falls free or perhaps is levered free (there is a small basal stalk which might assist in this). In *Morelotia affinis*, the basal part of the uppermost glume is rather firm, and contracts into a horseshoe shape, apparently acting to squeeze the ripe nut off.

FIGURE (See opposite page)

A. *Machaerina sinclairii* After Cheeseman (1914, pl. 211).
B. *Morelotia affinis* Mature glume, with firm contracted base.
C. *Gahnia setifolia* Ripe seed-head; dangling nuts eaten by moas ?
D. *Baumea tenax*
   Left: spikelet soon after anthesis.
   Middle: upper glume spreading.
   Right: upper glume fully spread, the dangling ripe nut with shiny yellow-orange body, and black tip and stipe.

REFERENCES

Cheeseman, T. F. 1914: Illustrations of the New Zealand Flora, John Mackay, Govt Printer, Wellington.
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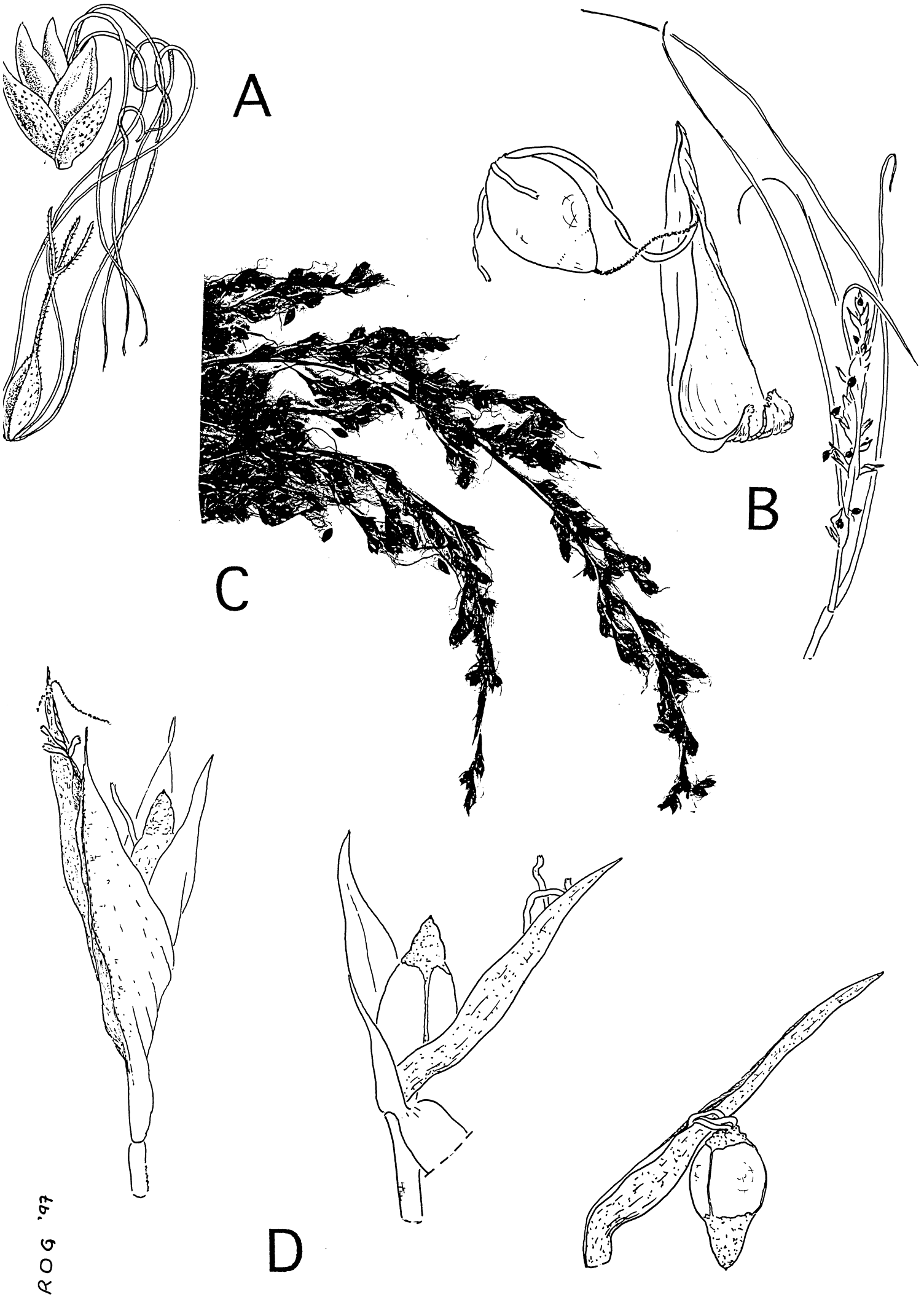
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