?Chionochloa bromoides GRP
Cortaderia splendens
Cyperus ustulatus AK 118407
Isolepis nodosa
Leptocarpus similis GPA, AK 118470
Microtis unifolia
*P. strigosa**
*Paspalum vaginatum**
*Poa trivialis** AEW
*R. racemosum**
Thelymitra longifolia
Cordyline australis / kaspar
*Cynodon dactylon**
Dichelachne crinita
Lachnagrostis billardierei
*Lolium perenne**
*Parapholis incurva** GRP
*Paspalum dilatatum**
Phormium tenax
Rytidosperma biannulare
*Sporobolus africanus**
*Vulpia bromoides**

* = adventive species
AEW = A.E. Wright field notebook records 16 October 1983; not recorded in 1995
AK = Auckland Museum herbarium voucher number
AKU = Auckland University herbarium voucher number
GPA = G.P. Adams (April 1968) based on herbarium specimens; not recorded in 1995
GRP = G.R. Parrish (October 1993) based on Parrish's Survey Sheet; not recorded in 1995

Gahnia pauciflora and *G. procera*, and a note on *G. lacera*

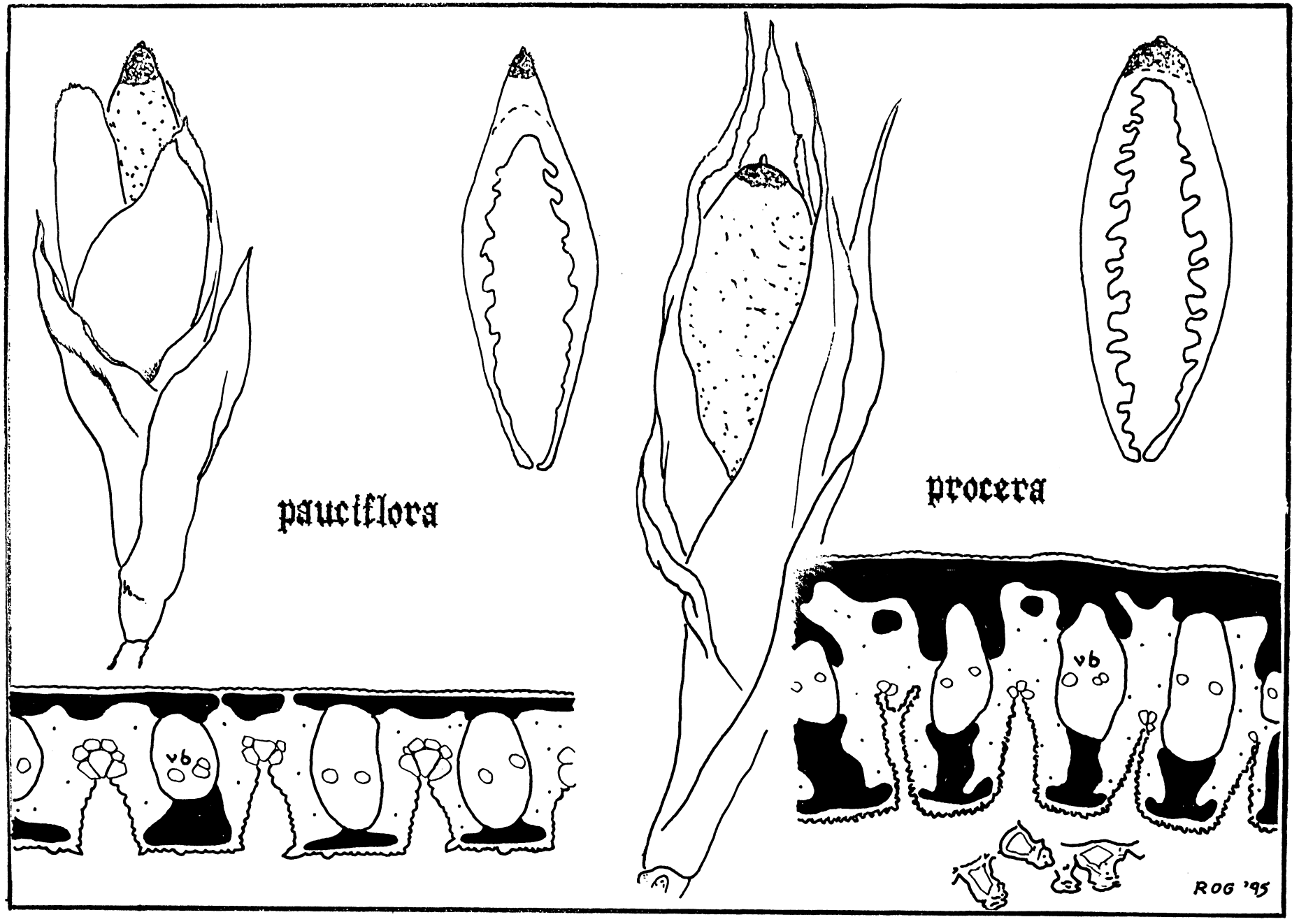
R. O. Gardner

Responding to my article on *Gahnia setifolia* and *G. xanthocarpa* (Gardner, 1995), a tramper informed me that "she didn't spend her time slogging around in that low-altitude muck" so why didn't I tell her how to distinguish the two smaller gahnias that are common in beech forest and make it into the subalpine zone. Using AK material I have hastened to produce the notes below.

Firstly, some advice on how to examine cutty-grasses. Their leaves twist through 180 ^{o} as they lean away from the culm, so the darker and scabrid surface presented to the sun is actually the blade's outer (abaxial) surface. When using a hand-lens to look at the papillae on the ridged and paler adaxial surface, bend a length of the blade over the forefinger and get as much light from the side as possible. Because the leaves of dried specimens roll up it is usually necessary to cut out a piece and rehydrate it with hot water and detergent. Double-sided sellotape on a microscope slide makes a good dissecting platform.

Gahnia pauciflora Kirk
Mid-green tussocks; leaf sheath c. 6-12 cm long, c. 10 % as long as blade; blade comparatively thin (c. 0.125 mm), the papillae on the adaxial ridges close-spaced, somewhat variable in size, mostly cylindrical-rounded, but the edges and outer face of the ridges with scattered larger whaleback-like projections (just visible at x 15). Spikelets c. 8mm long, dark brown in fruit, the lower glumes exceeded by the upper ones, the 3 innermost glumes obtuse, mucronate or sometimes emarginate; ripe nut brownish orange, c. 6 x 2.5 mm, facets us. flat or slightly concave, dark tip of nut comparatively narrow; endocarp of nut with c. 7 major transverse grooves.

Robust-panicled specimens may be confused with *G. setifolia*, which it resembles generally in the leaf sheath and blade. But the blades are seldom more than 10 mm wide, and the large whaleback-like papillae on the adaxial ridges are not present in *G. setifolia*.


pauciflora
vb
procera
vb
ROG '95

Gahnia procera J. R. & G. Forst.
Comparatively dull green tussocks; leaf sheath c. 12-20 cm long, c. 15-30 % as long as blade; blade comparatively thick, the papillae on the adaxial ridges close-spaced, rather uniform in size, apparently cylindrical and rounded at apex but under the compound microscope somewhat contorted-annulate ("trolliform"). Spikelets c. 12 mm long, very dark brown or purplish-black, the glumes 4 or 5, the lower ones at least as long as inner ones, all long-attenuate; ripe nut brownish orange, c. 6 x 2.5 mm, the facets usually slightly convex, dark tip of nut comparatively broadly rounded; endocarp of nut with c. 11 major transverse grooves.

Edgar (1970) gives the northern limit of *G. procera* as lat. 37 ^{o} 30' (Mt Te Aroha?). The northernmost AK specimen is from Mt Pureora.

The coastal cutty-grass, *Gahnia lacera*

This plant is easily learnt by those living north of 40 ^{o} S, since it is abundant in most pieces of dryish coastal forest and scrub here. Edgar (1968) described the habit of *G. lacera*, which is different from the dense tussocky growth of the other species. It forms comparatively open colonies, like "a small yellow-green bamboo", with the new rhizome segments being more or less horizontal and breaking through the bases of the scale leaves that enclose them. The leaf sheath is distinctive in having papillae, which are scattered, low, and more or less hemispherical ("sheaths ... slightly rough above", Edgar 1970: 211). The adaxial surface of the leaf blade is hardly if at all ridged, and is quite smooth (i.e., papillae and teeth are lacking). Notably, a distinct straw-colored midrib is present on the adaxial surface, a feature which none of the other NZ species have.

The small black nut of *Gahnia lacera* is also very distinctive. It is comparatively thin-walled, and only obscurely transversely ringed inside, and, unlike those of all the other NZ species, does not taste of vanilla.

References

Edgar, E. 1968. Contrasting Growth Habits in New Zealand Species of *Gahnia*. *N.Z. Journal of Botany 6*: 115-117.
Edgar, E. 1970. *Gahnia* pp.210-215 in Moore, L.B. & Edgar, E. *Flora of New Zealand. Vol II.* Government Printer, Wellington.
Gardner, R. O. 1995. Identifying *Gahnia setifolia* and *G. xanthocarpa. Auckland Bot. Soc. Jnl 50(2):* 82-83.

Notes for Figure

Leaf blades, TS Sclerenchyma dark; ground tissue stippled; vascular bundles vb. x 85.
G. pauciflora Based on ROG 4206.
G. procera Based on J. Adams, AK 109583. Below: adaxial "trolliform" papillae, x. c. 800.

Spikelets and TS nuts x 12.
G. pauciflora Based on Esler, Mt Tihia, AK 217946.
G. procera Based on Esler, Mt Tihia, AK 217949.