

A NEW SPECIES OF *PROGRADUNGULA* FORSTER AND GRAY
(ARANEAE: GRADUNGULIDAE) FROM VICTORIA

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Abstract

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Progradungula otwayensis, sp. nov., from the Otway Ranges in Victoria is described and notes on its biology are given.

Introduction

Progradungula carraiensis Forster and Gray from north-eastern New South Wales and *Macrogradungula moonya* Gray from north-eastern Queensland are the only two cribellate species of the primitive araneomorph family Gradungulidae currently known. *P. carraiensis* is only known from the type locality, Carrai Bat Cave in New South Wales (Gray, 1983), although Gray (Forster et al., 1987) suggests it may be slightly more widespread. *M. moonya* is known from the Boulder Creek region, near Tully in Queensland (Forster et al., 1987). Recent collecting in the *Nothofagus* forests of Otway Ranges in Victoria has revealed an undescribed species of *Progradungula* occurring at a number of sites.

Morphological descriptions are of the holotype male. For comparative purposes descriptive terminology and form follow Forster et al. (1987), except for leg spination which follows Platnick and Shadab (1975). Moran (1985), when describing *Gradungula brindabella* (now placed in *Kaiya*), noted the asymmetrical distribution of the leg spines in that species and adopted a simplified notation as a result. As the species described here displays a similar asymmetrical spine distribution, numbers and positions of leg spines given are those of the right legs only and should be taken as an approximation rather than absolute. Measurements are in millimetres. All material is housed in the Museum of Victoria (NMV).

Progradungula Forster and Gray

Progradungula Forster and Gray, 1979: 1053. Type species *Progradungula carraiensis* Forster and Gray, by original designation.

Diagnosis. See Forster et al. (1987) for diagnoses of this and other gradungulid genera.

Progradungula otwayensis sp. nov.

Figures 1–3

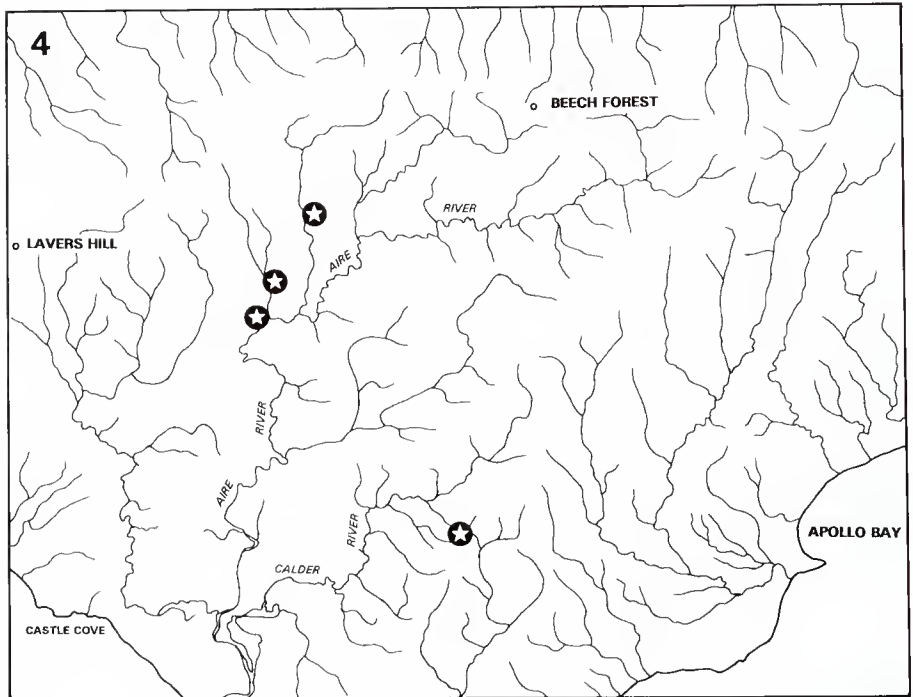
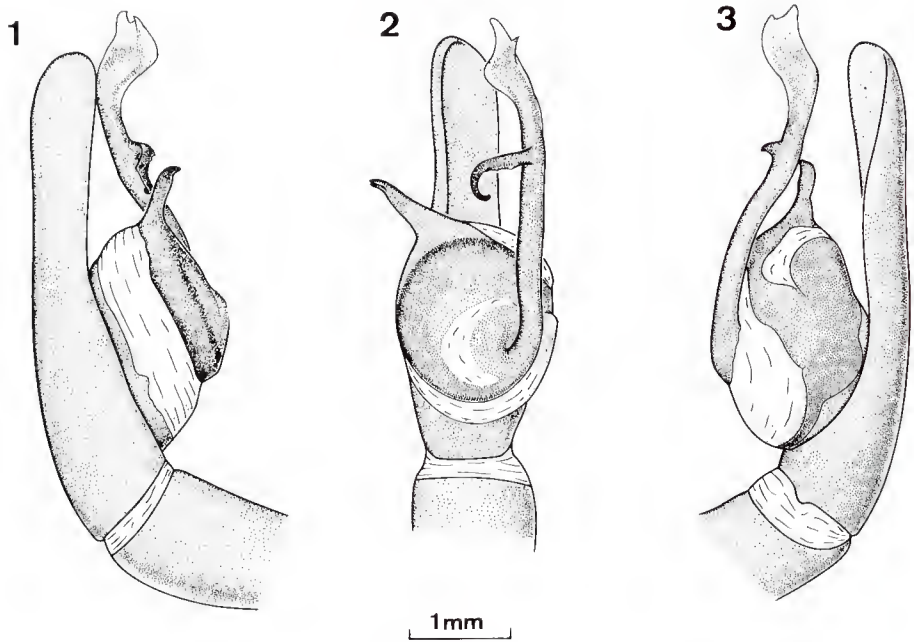
Material examined. Holotype: ♂, Victoria, Otway Ranges, Aire Crossing Track, 0.5 km N of Aire River crossing, 38°42'S, 143°29'E, 31 Jan 1995, G. Milledge, K3260 (NMV).

Paratypes: Vic. 3 ♂ juvs., 1 ♀ juv. same data as holotype, K3261; 2 ♂ juvs., Otway Ranges, Young Creek Rd, 0.2 km NE of Ciancio Creek crossing, 38°42'S, 143°29'E, 31 Jan 1995, G. Milledge, K3262; 3 juvs., Otway Ranges, Phillips Track, 0.5 km N of Triplet Falls, 38°40'S, 143°29'E, 30 Jan 1995, G. Milledge, K3263; 3 juvs., as above except 20 Feb 1992, K2473–5; 1 juv., as above except 17 Mar 1992, K2476; 1 juv., Otway Ranges, Maits Rest, 10 km W of Apollo Bay, 38°45'S, 143°19'E, 20 Feb 1992, G. Milledge, K2477 (all NMV).

Etymology. Specific name refers to the region where this species has been collected.

Diagnosis. This species can be separated from *P. carraiensis* by the presence of a single preembolic process on the male palpal embolus.

Description. As in *P. carraiensis* except as follows. Carapace 5.42 long, 3.98 wide. Abdomen 5.40 long, 4.75 wide. Colour: carapace pale fawn except for orange-brown eye region and pale grey patch anterior to fovea, chelicerae dark brown; abdomen light mauvish grey with paler mid-dorsal stripe on anterior half and 3 pairs of pale dorsolateral chevrons on posterior half; legs pale fawn proximally becoming darker brown distally. Eye sizes and interdistances: AME 0.15, ALE 0.29, PME 0.25, PLE 0.25, AME-AME 0.18, AME-ALE 0.26, PME-PME 0.26, PME-PL 0.31, ALE-PL 0.08; MOQ length 0.69, front width 0.48, rear width 0.76. Cheliceral stridulatory area small, similar to that of *Macrogradungula* (Davies, 1993), also present in juveniles but less well developed. Cheliceral groove with 4 large promarginal teeth and 3–4 much smaller retromarginal denticles. Labium 0.69



Figures 1–3. Right palp of holotype male of *Progradungula otwayensis* (hairs omitted). 1, prolateral; 2, ventral; 3, retrolateral.
 Figure 4. Distribution of *Progradungula otwayensis*.

long, 0.85 wide. Sternum 2.75 long, 1.81 wide. Leg formula 1423. Spination: femora: I d1-0-1, p3-4-4, r3-3-3, v0-1-0; II d2-2-1, p3-3-4, r3-2-3, v0-3-0; III d1-1-1, p1-3-4, r3-3-4, v2-2-0; IV d1-4-1, p1-3-1, r4-1-3, v1-0-0; tibiae: I d1-0-1, p3-2-2, r2-1-2, v1-1-1; II d1-0-1, p2-2-2, r1-1-2, v2-2-3; III d1-1-1, p1-1-2, r2-1-1, v3-2-2; IV d1-1-0, p2-2-1, r1-1-2, v4-3-1; tarsi I p2-1-0, r2-1-0, v3-3-1; II p2-2-2, r2-1-1, v4-4-3; III p3-2-2, r2-1-2, v3-4-4; IV 3-2-2, r2-1-2, v4-3-4.

	I	II	III	IV	Palp
Femur	10.64	8.07	7.41	8.55	3.04
Patella	2.37	2.18	1.52	1.90	0.76
Tibia	10.92	8.36	6.56	8.08	2.95
Metatarsus	11.40	9.12	7.60	9.31	—
Tarsus	2.56	2.28	1.80	2.25	1.80
Total	37.89	30.01	24.89	30.09	8.55

Palpal bulb (figs 1-3) with single parembolic process on embolus, tip of embolus with membranous area more expansive and indentation more pronounced than that shown in the illustration of *P. carraiensis* by Gray (1983). Palpal spination: femur: d0-1-2, p0-0-1, r0-1-1; tibia: p0-2-0.

Distribution and habits. Known from several localities in the Otway Ranges (fig. 4). So far this species has only been collected from the vicinity of *Nothofagus cunninghamii* trees and later instars appear dependant on the hollows that are often found in the bases of older trees for daytime retreats (although one web has been seen in the hollow stump of a nearby eucalypt). Web structure and defensive behaviour are similar to that described for *P. carraiensis* (Gray, 1983; Forster et al., 1987) although the web structure of *P. otwayensis* has not been as closely studied. The catching ladder and supporting web is sometimes constructed several metres from the retreat, to which it is attached by a single sturdy guyline, but more commonly it is constructed in the vegetation surrounding the base of the tree or in the sucker-like shoots growing from the tree trunk. It may be attached to the ground but more often is built amongst the vegetation, up to two metres above ground. The spiders are only active at night and assume their catching position an hour or so after sunset. The egg case is unknown.

Remarks. As noted in the introduction, the leg spine count of the holotype for this species is variable so, although the overall number appears to be significantly lower than that of *P. carraiensis*, further adult specimens are required before the usefulness of this character can be ascertained. The lack of an adult female for the description of this species means it may be misplaced in *Progradungula*. This is because Gray (Forster et al., 1987) used female characters to separate *Macrogradungula* from *Progradungula*, as no male of *Macrogradungula* was available. However, due to the similarities in dimensions and form of the body, and of the cheliceral teeth, of the male of this species and that of *P. carraiensis*, it is reasonable to place it in *Progradungula*.

The presence of the cheliceral stridulatory area in this species and in *Macrogradungula*, but apparently not in *P. carraiensis*, would appear significant. However, it seems that this feature is present in the male holotype of *P. carraiensis* but was overlooked in the original description (M. Gray, pers. comm.). More specimens are needed before the relationships between *Macrogradungula* and *Progradungula* can be clarified.

Although this species has been collected from a number of sites in the Otway Ranges, its apparent dependence on mature *N. cunninghamii* trees for refuges may make its survival somewhat precarious unless areas where Myrtle Beech occurs are preserved.

References

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