

THE NOMENCLATURE AND DISTRIBUTION OF SOME AUSTRALIAN AND NEW CALEDONIAN ANTS OF THE GENUS *LEPTOGENYS* ROGER (= *PRIONOGENYS* EMERY, N. SYN.) (HYMENOPTERA: FORMICIDAE: PONERINAE)

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Summary

New synonymies include: *Leptogenys* Roger, 1861 = *Prionogenys* Emery, 1895 [with new combinations *L. podenzanai* (Emery) and *L. rouxi* (Emery)]; *L. podenzanai* = *Prionogenys podenzanai malandensis* Forel; *L. conigera* (Mayr) = *L. conigera mutans* Forel; *L. diminuta* (Fr. Smith) = *L. diminuta yarrabahna* Forel; and *L. excisa* (Mayr) = *L. excisa major* Forel. The subspecies *L. conigera adlerzi* Forel, *L. conigera centralis* Wheeler, *L. conigera exigua* Crawley, *L. fallax fortior* Forel and *L. turneri longensis* Forel are elevated to species rank. Several species are illustrated.

Introduction

This is the first of several papers reviewing subspecific names current for Australian ants with the intention either of synonymising them or of raising them to species rank. I consider the subspecies category to have no real facility in formal nomenclature, a view shared by most ant taxonomists following Wilson and Brown (1953). A new generic-level synonym is also proposed. For publication details and type localities of names discussed see Taylor and Brown (1985) or Taylor (1987). General distribution is summarised using coordinates in the format 17/145 (= 17°S. X 145°E.), which specify the 1-degree grid cells from which records are known.

The Synonymy of *Prionogenys* Emery under *Leptogenys* Roger

Genus *Leptogenys* Roger, 1861

*Leptogenys* Roger, 1861, *Berl ent. Z.* 5, p. 41. Type species: *Leptogenys falcigera* Roger, 1861 (designated by Bingham, 1903).

*Prionogenys* Emery, 1895, *Annls Soc. ent. Belg.* 39, p. 348. Types species: *Prionogenys podenzanai* Emery, 1895 (by monotypy), N. Syn.

Three species-group names have been assigned to *Prionogenys*: *podenzanai* (type locality—Mt Bellenden Ker, Queensland) (Figs 1, 4); *rouxi* Emery, 1914 (Mt Canala, New Caledonia); and *podenzanai malandensis* Forel, 1915 (Malanda, Queensland). Subspecies *malandensis* is a NEW JUNIOR SYNONYM of *L. podenzanai*. Comparison of syntype-compared *podenzanai* vouchers in The Australian National Insect Collection (ANIC) with a *malandensis* syntype from the Museum d'Histoire Naturelle, Geneva, Switzerland (Forel Collection), and other ANIC specimens, indicates a single monotypic species.

The generic distinction of *Prionogenys* rests on the aberrant mandibular and ocular characters of *podenzanai* and *rouxi*, while acknowledging their close affinity to *Leptogenys*. The mandibles are relatively straight, narrow, and exceptionally long, and the eyes relatively advanced on the head (see Figs 1, 4, and the figures of Emery 1895, 1914). Post-cephalic morphology differs between the two species, within limits normal for *Leptogenys*. Both have pectinate tarsal claws, as in *Leptogenys*.

A number of lineages in *Leptogenys* (including several in Australia) have developed otherwise unusual, but equally bizarre, mandibular, ocular and clypeal characteristics, presumably as adaptations for the seizure of prey (see Figs 1-3). This is a major feature of evolution in the genus. The "*Prionogenys*" species are unusual in their particular physiognomy, but not in my opinion exceptional enough to merit generic distinction in a radiation so marked by mandibulo-cephalic eccentricity.

The similarities between *podenzanai* and *rouxi* are also likely the result of homoplasy. Wilson (1958) demonstrated that the post-cephalic morphology of *rouxi* more closely resembles that of the New Caledonian *Leptogenys acutangula* Emery than that of *podenzanai*, perhaps indicating relationship. He suggested that the "Prionogenys" habitus could have evolved convergently in *podenzanai* and *rouxi*. This argument is supported by the resemblance in post-cephalic structure between *podenzanai* and the Australian *Leptogenys mjobergi* Forel. Their mesosomal morphology is similar, distinctive among regional *Leptogenys*, and unlike *rouxi* and *acutangula*. Furthermore, the mandibles of *podenzanai* and *rouxi* differ in basic shape and dentition, and could be only superficially similar (Wilson, 1958), while the clypeus is distinctive in each. In *rouxi* it extends forwards between the mandibles as an acute triangular process (not unlike that of *L. acutangula*), while in *podenzanai* it is much shorter, and surmounted by several bristle-like hairs (a configuration readily derived from *L. mjobergi*-like ancestry).

I conclude that *podenzanai* and *rouxi* have evolved separately from more conservative *Leptogenys* stock, that their similarities were convergently acquired, and that both should be assigned to *Leptogenys*. The NEW COMBINATIONS *Leptogenys podenzanai* (Emery) and *L. rouxi* (Emery) are prescribed.

ANIC holdings show *L. rouxi* to be widespread on New Caledonia. *L. podenzanai* is a rainforest-inhabiting species, which can be locally common, and usually nests in the soil under stones. It is known at localities on the Atherton Tableland from Lake Eacham National Park south to Tully Falls, from Mt Lewis to the north, and from the Bellenden Ker Range to the east (Grid cells 16/145, 17/145). All records are from elevations above 500 metres, the highest at around 1500 m.

#### New Synonymy of some Australian *Leptogenys* Subspecies

##### *Leptogenys conigera* (Mayr), 1876

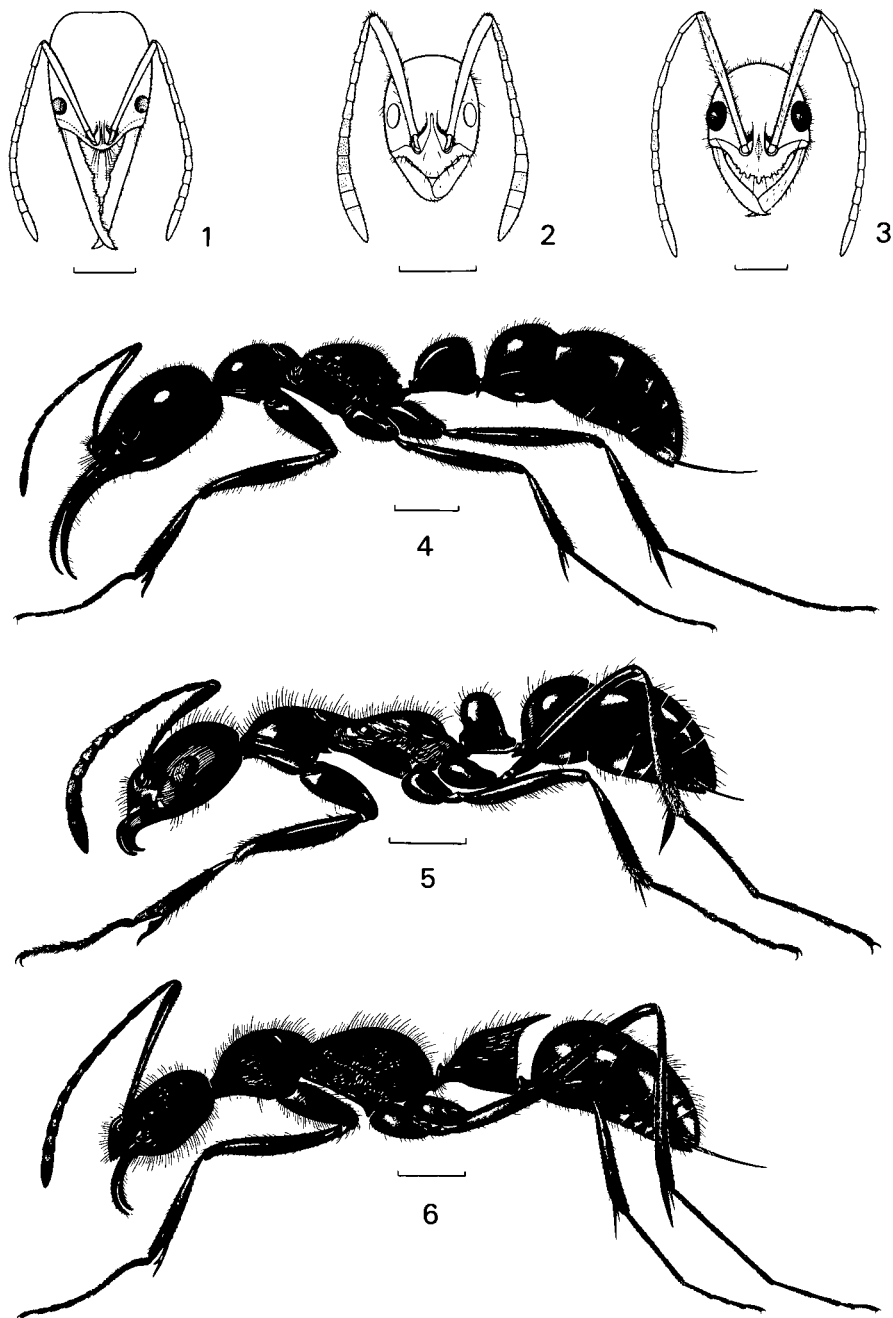
= *Leptogenys (Lobopelta) conigera mutans* Forel, 1900, N. Syn.

I have compared ANIC voucher specimens with syntypes of *conigera* in the Naturhistorisches Museum, Vienna (Mayr Collection), and with *mutans* syntypes in the Forel Collection. These specimens and others (ANIC) are almost identical, representing an apparently monotypic species. *L. conigera* inhabits dry savanna and open *Eucalyptus* woodland, and is known from the Townsville area and localities on the western slopes of the Great Dividing Range from near Mt Carbine and Dimbulah in the north, south to St George, almost at the New South Wales border (Grid cells 16/145, 17/145, 18/145, 19/146, 21/149, 22/148, 22/150, 23/150, 24/150, 25/149, 25/151, 26/150, 28/148). Judging from its habitat preferences *L. conigera* is probably more widespread than indicated.

##### *Leptogenys diminuta* (Fr. Smith), 1857

= *Leptogenys (Lobopelta) diminuta yarrabahna* Forel, 1915, N. Syn. (Figs 2, 5).

This variable species ranges from northern India, Sri Lanka and the Philippines to New Guinea, the Solomon Islands and northern Australia, including the "Top End" of the Northern Territory and Cape York Peninsula. Wilson (1958) reviewed the synonymy of *diminuta* and summarised sculptural variation in a matrix table which included specimens from Kuranda (16/145), collected not far from the *yarrabahna* type locality. Their attributes, as summarised by Wilson, are typical for material from the base of Cape York Peninsula area, and relate to the overall pattern of geographical variation in *L. diminuta*. Wilson's treatment justifies this synonymy. The ANIC has syntypes of *yarrabahna* donated from the Forel Collection.



Scale = 1mm

Figs 1-6. Facial and lateral views of three Queensland *Leptogenys* species. (1, 4) *L. podenzanai* (Topaz area, 17/145); (2, 5) *L. diminuta* (Mossman Gorge, 16/145); (3, 6) *L. longensis* (Lake Eacham National Park, 17/145). [F. Nanninga del.]

*L. diminuta* inhabits areas with marginal vegetation near the edges of rainforest, along creek beds etc. and is probably distributed across the network of suitable habitats associated with gallery forests in the "Top End" and on Cape York Peninsula. It has been taken in such places in the Northern Territory (Ooloo Crossing on the upper Daly River, and in Kakadu National Park), and west of the Atherton Tableland (e.g. near Ravenshoe). Queensland localities include Iron Range, sites along the coastal strip from Mossman and the Daintree River south to near Babinda and Tully, and Palm Island. I have never encountered *diminuta* on the Atherton Tableland proper, west of the coastal strip. It could be limited there by the severe, often frosty, winter climate. (Grid cells: Northern Territory: 12/133, 13/130; Queensland: 12/143, 16/145, 17/145, 17/146, 18/146).

*Leptogenys excisa* (Mayr), 1876

*major* = *Leptogenys (Lobopelta) excisa* Forel, 1910, N. Syn.

*L. excisa* was described from Rockhampton, Queensland, and *major* from Tweed River, New South Wales. The ANIC has syntype-compared paradigms of *excisa*, and two workers (on a single pin) with label data identical to that of the *major* types. The latter lack formal type labels, but have a characteristically folded thin paper label handwritten by Forel, which reads "*Lobopelta excisa* Mayr n.v. *major* Forel". They are presumably part of the original series, if not syntypes. Other ANIC specimens show that the characters supposed by Forel to distinguish *major* have no taxonomic significance, and indicate the presence of a single, moderately variable species ranging, in suitable rainforest habitats, from Eungella National Park, near Mackay, south through the Gladstone district, Tomewin, Burleigh Heads, Tamborine Mountain, and the MacPherson Ranges, Queensland, to Mt Warning and Tweed River, New South Wales (Grid cells 21/148, 23/150, 24/151, 27/153, 28/153). There is variation in intensity of sculpturation, shape of the relatively massive petiolar node (especially of its posterodorsal border, which usually bears a bilateral pair of swollen tumosites), and development of a comb-like series of grooves and ridges on the posterior margin of the relatively deep and complex transverse groove which follows the dorsal part of the constriction dividing the tubulate abdominal segment IV. Variability seems to be allometric rather than geographical. It is more pronounced between series from southern localities than among northern samples, which are collectively more uniform in size and habitus. There is no evident justification for dividing this apparently single species.

**Elevation to Species Rank of Some Australian *Leptogenys* Subspecies**

*Leptogenys adlerzi* Forel, 1900 [*Leptogenys (Lobopelta) conigera adlerzi*] . N. Stat.

The ANIC has three worker syntypes donated from the Forel Collection. This species, like the two following, is smaller and more gracile than *L. conigera*. *L. adlerzi* is an ordinary *Leptogenys* of "*Lobopelta*" habitus. It is broadly and probably locally sympatric with *L. conigera* in northeastern coastal Queensland, notably in the Townsville (19/146) area.

*Leptogenys centralis* Wheeler, 1915 [*Leptogenys (Lobopelta) conigera centralis*] , N. Stat.

The ANIC has two worker syntypes and a male. This species resembles *L. adlerzi* in size and habitus, but has different and distinctive proportions. All ANIC collections are from Central Australia, mostly from near Alice Springs (23/133). The petiolar nodes of *L. conigera*, *L. adlerzi* and *L. centralis* are distinctly longer than high in side view (by about 1.3 to 1.5 times).

*Leptogenys exigua* Crawley, 1921 [*Leptogenys (Lobopelta) conigera exigua*], N. Stat.

ANIC material includes topotypical specimens taken by the original collector, G. F. Hill, and identified by John Clark (probably part of the original series retained in Australia and not seen by Crawley). Other specimens identified by comparison are all from the Darwin/Kakadu National Park area (Grid cells 12/130, 12/132). *L. exigua* is similar in size to *L. adlerzi* and *L. centralis*, but has a much shorter petiolar node, which is almost as high as long in side view.

*Leptogenys fortior* Forel, 1900 [*Leptogenys (Lobopelta) fallax fortior*], N. Stat.

The ANIC has a syntype-compared voucher of *L. fallax* and five worker syntypes and two males of *L. fortior*. The latter averages larger than *L. fallax* and has a broader head (almost as wide as long in front view), slightly longer antennal scapes (which just attain the occipital border when extended), a relatively high petiolar node, the anterior and posterior faces of which converge apically in side view to a narrowly rounded summit, and longer, more dense, pilosity. The head of *L. fallax* is distinctly longer than broad, the scapes fail to reach the occipital border by about half their maximum diameter, and the petiolar node in side view is lower, with a broadly rounded summit and almost parallel anterior and posterior faces. *L. fallax* is represented in the ANIC from Lockerbie and Bamaga near the tip of Cape York Peninsula, and localities in the Cairns/Atherton Tableland area, south to Bluff (Grid cells 10/142, 16/145, 17/145, 18/145, 23/149). *L. fortior* is represented from Cape Tribulation, Mossman Gorge, Kuranda, and from Townsville and Magnetic Island, south to Byfield, near Yeppoon (Grid cells 16/145, 17/145, 19/146, 23/150, 24/151).

*Leptogenys longensis* Forel, 1915 [*Leptogenys (Odontopelta) turneri longensis*], N. Stat. (Figs 3, 6).

The ANIC has syntypes of both *turneri* and *longensis*. *L. turneri* was described from Mackay, and has since been taken in the nearby Eungella and Clarke Range areas, and in the northern part of the Paluma Range, southwest of Ingham (Grid cells 18/146, 21/148). *L. longensis* was described from Malanda on the Atherton Tableland, further north. It is well represented in the ANIC and Queensland Museum collections, ranging from Cape Tribulation south to Palmerston National Park (near Crawfords Lookout), and at higher elevations from Kuranda and the Lake Tinaroo area to Koombooloomba, south of Tully Falls (Grid cells 16/145, 17/144). These rainforest-inhabiting species carry a distinctive posterodorsal median spine on the petiolar node, which is shorter in *L. turneri* than in *L. longensis*. In addition the latter has stronger mesosomal and petiolar sculpturation. There is no evidence of intergradation, and the separate status of these species seems assured.

#### References

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