

On the taxonomy of *Meranoplus puryi* FOREL, 1902 and *Meranoplus puryi curvispina* FOREL, 1910 (Insecta: Hymenoptera: Formicidae)

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Abstract

Study of type material of *Meranoplus puryi* FOREL, 1902 and *M. puryi curvispina* FOREL, 1910 has revealed that the two taxa are distinct species, separable by external traits and morphometric measures. A lectotype is designated for each species. Redescriptions, description of gynes, and distributional data are presented.

Key words: Formicidae, Myrmicinae, *Meranoplus*, *M. puryi curvispina*, *M. puryi*, lectotype designation, redescription, description of gynes.

Zusammenfassung

Untersuchungen der Typen von *Meranoplus puryi* FOREL, 1902 und *M. puryi curvispina* FOREL, 1910 haben gezeigt, dass beide Taxa eigenständige Arten darstellen, die sowohl anhand morphologischer Merkmale, als auch aufgrund morphometrischer Messungen getrennt werden können. Für beide Arten werden Lectotypen festgelegt. Wiederbeschreibungen, eine Beschreibung der Gynen sowie Verbreitungsdaten werden präsentiert.

Introduction

In his study on Australian *Meranoplus* F. SMITH, TAYLOR (1990: 39) synonymized *Meranoplus puryi curvispina* with *M. puryi* on the basis of type material. In the course of a forthcoming revision of the genus *Meranoplus* in Australia, numerous types from various collections have been studied. Re-examination of all available syntypes of both taxa, housed in ANIC, MHNG and NHMB, and further non-type material has shown that the synonymization cannot be maintained. Moreover, the two forms represent distinct, clearly separable species.

Material and Methods

Specimens were studied with an Olympus SZH10 Research Stereo binocular microscope. Measurements were taken with an ocular grid from dry and point-mounted specimens at magnifications from 80x - 140x. Illustrations were prepared with camera lucida equipment, attached to the binocular.

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Abbreviations of morphometric measures and indices:

AL	Alitrunk Length: length of alitrunk, measured in lateral view from anterior pronotal tooth to caudalmost part of basal propodeal lobe
CI	Cephalic Index: $HW \times 100 / HL$
CS	Cephalic Size: arithmetic mean of HL and HW
EL	Eye length: maximum length of compound eye, measured in lateral view
EW	Eye width: maximum width of compound eye, measured in lateral view
EYE	$(EL + EW) / CS$
HL	Head Length: length of head, measured from mid-point of posterior margin to mid-point of anterior clypeal margin
HW	Head Width: maximum width of head behind compound eyes, measured in full face view
OD	Ocellar Distance: distance between inner margins of posterior ocelli, measured in queens
PI	Petiolar Index: $PTDW \times 100 / PPDW$
PMD	Promesonotal Diameter, measured from apex of pronotal antero-lateral projection to apex of mesonotal postero-lateral projection of opposite side.
PMI	Promesonotal Index: $PW \times 100 / PML$
PML	Promesonotal Length: length of promesonotal shield, measured from anterior mid-point of pronotum behind collar, that is the mid-point of a virtual line, where the anterior pronotal margins meet, to mid-point of hind margin of mesonotum (lamella included) above propodeal declivity (measured in workers only)
PSL	Propodeal Spine Length: length of propodeal spine in lateral view measured from mid-point of propodeal spiracle to spinal apex
PPDW	Postpetiolar Dorsal Width: maximum width of postpetiole, measured in dorsal view
PPLL	Postpetiolar Lateral Length: length of postpetiole, measured in lateral view (Fig. 7)
PPLH	Postpetiolar Lateral Height: height of postpetiole, measured in lateral view (Fig. 7)
PPLI	Postpetiolar Lateral Index: $PPLL \times 100 / PPLH$
PTDW	Petiolar Dorsal Width: maximum width of petiole, measured in dorsal view
PTLI	Petiolar Lateral Index: $PTLL \times 100 / PTLH$
PTLL	Petiolar Lateral Length: length of petiole, measured in lateral view (Fig. 7)
PTLH	Petiolar Lateral Height: height of petiole, measured in lateral view (Fig. 7)
PW	Pronotal Width: maximum width of pronotum, measured posterior to base of antero-lateral pronotal projections (angles) in dorsal view
REL	Relative Eye Length: EL / HL
SL	Scape Length: length of antennal scape, excluding basal condylar bulb, measured in caudal view
SI1	Scape Index 1: $SL \times 100 / HW$
SI2	Scape Index 2: SL / CS
TL	Total Length: length of out-stretched individual from mandibular apex to apex of gaster

Depositories of studied material (acronyms follow ARNETT & al. (1993))

ANIC	Australian National Insect Collection, Canberra, Australia
BMNH	The Natural History Museum, London, U.K. [= British Museum of Natural History]
MCZC	Museum of Comparative Zoology, Cambridge, USA
MHNG	Muséum d'Histoire naturelle, Geneva, Switzerland

MVMA	Museum Victoria, Melbourne, Australia
NHMB	Naturhistorisches Museum, Basle, Switzerland
NHMW	Naturhistorisches Museum, Vienna, Austria
PSWC	Philip S. Ward Collection, University of California at Davis, CA, USA
QMBA	Queensland Museum, Brisbane, Queensland, Australia
SAMA	South Australian Museum, Adelaide, South Australia, Australia
USNM	National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
WAMP	Western Australian Museum, Perth, Western Australia, Australia

Taxonomy of species

Meranoplus curvispina FOREL, 1910 stat.n. (Figs. 1 - 3, 8, 9, 12; Tab. 1)

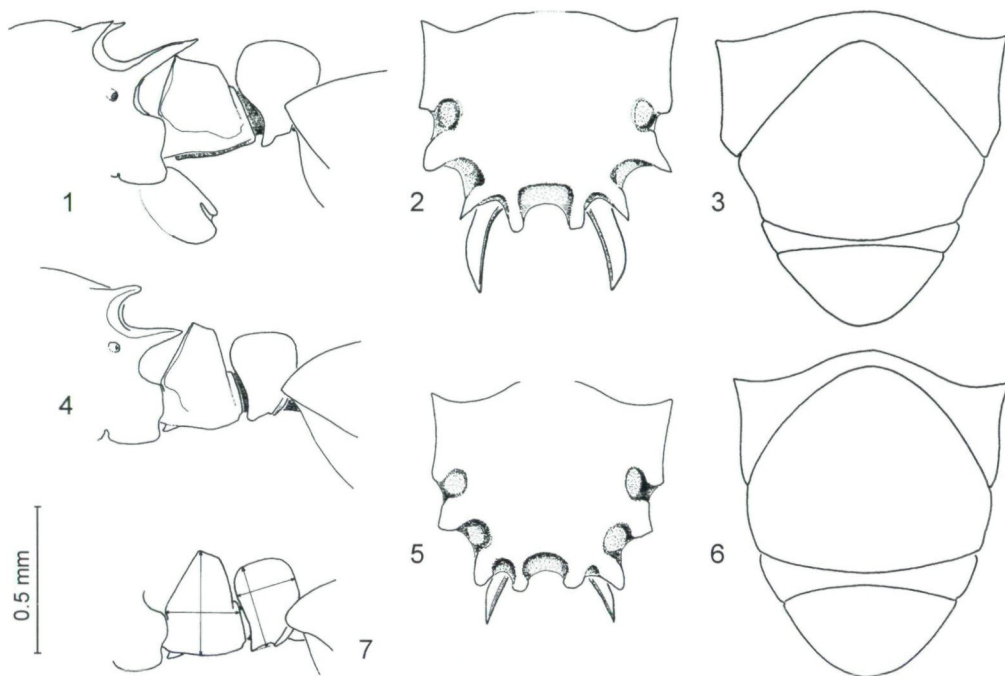
Meranoplus puryi var. *curvispina* FOREL, 1910: 47 (worker) (New South Wales, Australia). - TAYLOR & BROWN 1985: 68 (subsp. of *puryi*), TAYLOR 1987: 39 (catalogue; subsp. of *puryi*); TAYLOR, 1990: 39 (= junior synonym of *puryi* FOREL, 1902), BOLTON 1995: 251 (catalogue), SHATTUCK 1999: 143 (listed). - Five syntype workers were studied. The top specimen of two mounted together on the same pin (MHNG) is here designated as **lectotype**: "Typus [printed on red label] \ M. Puryi Forel ♀ v. curvispina Forel type N.S.W. (Walcher) 230? 231? \ v. M. curvispina For \ Coll. Forel." (Fig. 9). **Paralectotypes** in MHNG (1 ex.), NHMB (2 exs.), one with gaster missing, together on one pin, additionally labelled "Cotypus \ Sammlung Dr. F. Santschi Kairouan", and ANIC (1 ex.), original labels lacking, thus the specimen apparently was removed from the type series (see TAYLOR 1990), "curvispina R. W. Taylor Accession 68. FOR. 107". Since syntypes are spread in various collections, a lectotype is here designated. - **stat. n.**

Type locality: New South Wales, Australia (no detailed locality given in original description).

Additional material examined (386 workers, 7 gynes): **Queensland:** Warwick, 11.7 km W 28°35'S 151°55'E, 30.XI.1997, Eastwood & McArthur (SAMA); 30 km SW Warwick, 13.V.1974, P.J.M. Greenslade (ANIC); Mt. Scoria, 200m, vine scrub. Intercept. 9843, 24°32'S 150°36'E, 21.X.-19.XII.2000, Cook & Monteith, *ibid.*, 20.XII.2000-23.III.2001, 1991 (QMBA); N. Stradbroke Is. Enterprise, Scribbly Gum #3, 70m, sweeping, 50942, 27°36'S 153°27'E, 10.I.2002, Burwell (QMBA); Cooloola, Noosa Plain, ii.1976/77, P.J.M. Greenslade (ANIC); St George, 2.I.1965, B.B. Lowery (ANIC); Thallon, 7.I.1965, B.B. Lowery (ANIC); 45 km N Bowen, Bruce h'way, 7.IV.1981, B.B. Lowery (ANIC); 18 km W Paluma, 3.XI.1980, B.B. Lowery (ANIC). **New South Wales:** Frenchs Forest, Sydney, 400 ft., 30.VIII.1956, B.B. Lowery (ANIC); St Marys, Sydney, 9.X.1966 (ANIC); Lane Cove, Riverview College, Sydney, 17.V.1965, B.B. Lowery (ANIC); Cowan, N Sydney, 500 ft., 1.III.1959, B.B. Lowery (ANIC), *ibid.*, 24.III.1962, Weatherill (ANIC); 3 miles E Berry, 150 ft., 28.XII.1959, B.B. Lowery (ANIC); Penrith, 100 ft., 16.VII.1960, B.B. Lowery (ANIC); Rosedale, SE Batemans Bay, 7.XII.1975, B.B. Lowery (ANIC); 1 km S Bateau Bay, 27.XII.1977, B.B. Lowery (ANIC); 5 km N Tathra, 8.VIII.1979, B.B. Lowery (ANIC); 5 km N Barmedman, 18.IV.1978, B.B. Lowery (ANIC); Berowra, 31.VI.1976, B.B. Lowery (ANIC); 12 km W Bungonia, 17.V.1978, B.B. Lowery (ANIC); Bomaderry Ck., Nowra, 21.XI.1959, B.B. Lowery (ANIC); Jindalee SF, 26.III.1979, B.B. Lowery (ANIC); Falcon bridge, Blue Mts., 4.X.1971, L. Weatherill (ANIC); Barellan, 18.III.1979, B.B. Lowery (ANIC); Glen Emu, 40 mi. N Balranald, 10.X.1970, B.B. Lowery (ANIC); Emu Vale, nr Deniliquin, 1974, V. Valentine (ANIC); 2 mi. N Roto, 10.XII.1965, B.B. Lowery (ANIC); M. Trundle, 9.I.1964, B.B. Lowery (ANIC); 34 km S Hilston, 17.IV.1978, B.B. Lowery (ANIC); 4 km NW Merrimula, 14.VII.1978, B.B. Lowery (ANIC); N-NSW, Gibraltar Range, 29°30.95S 152°21.538E, 21.IX.1999, Holt (Euc WdLnd 873) (QMBA); Ku-ring-gai NP, Bobbin Head, N Sydney, 13.XI.1987, Buschinger (NHMW); Bobbin Head, 33°95'S 151°09'E, 2.II.1966, Mew (SAMA); Tahmoor, nr. Picton, 22.I.1966, Nikitin (BMNH); Cheltenham, 13.XI.1960, Nikitin (BMNH); Royal National Park, 34°09'S 150°01'E, 26.XII.1974, Ward (PSWC); Royal National Park, 34°08'S 151°05'E, 10.XI.1991,

T. Gush (ANIC); Kuring Gai Chase, Sydney, 22.IX.1974, Ward (PSWC, ANIC); *ibid.*, 28.II.1979, B.B. Lowery (ANIC); Leumeah, 50 m, 34°03'S 150°52'E, 27.-28.III.1976, Ward (PSWC); 11 km W Gilgandra, 31°38'S 148°44'E, 4.IX.1983, Ward (PSWC); Oatley, Mann (USNM); 40 km NNW Louth, Lake Mere, 30.X.1986, P.J.M. Greenslade (ANIC); Murwillumbah, Mt. Nullum, 300ft., 2.IX.1966, B.B. Lowery (ANIC); Coffs Harbour, 3.V.1951, W.L. Brown (MCZC). **Victoria:** Box-ironbark study, Site RW-8. Mitchell Link Tk, 200m W of Mitchell Tk., 36°45'36"S 144°49'23"E, Pitfall Traps, 13.XI.-17.XII.1995, Hinkley & Lillywhite (MVMA); Box-ironbark study, Site RW-18, Bilston Rd., 0.35km ENE from junction with Friesland Hill's Rd., 36°45'50"S 144°59'04"E, Pitfall Traps, 13.XI.-17.XII.1995, Hinkley & Lillywhite (MVMA); Heathcote nr. Bendigo, 1800 ft., 24.V.1961, B.B. Lowery (ANIC); *ibid.*, 5.XI.1961, Nikitin (BMNH); Djerriwarrah Ck., nr. Melton, Eucalyptus behriana mallee, 7.X.1951, W.L. Brown (MCZC). **South Australia:** Kangaroo Island, Kohinoor, 13.I.1973, P.J.M. Greenslade (ANIC); Kangaroo Island, 6 km E Parndana, 17.I.1973, P.J.M. Greenslade (ANIC); Koonamore, 24.-27.ii.1973, P.J.M. Greenslade (ANIC); Murray Bridge, 7.IV.1969, B.B. Lowery (ANIC); Wilpena chalet, Flinders Ranges, 10.XII.1961, B.B. Lowery (ANIC); Wilpena Pound, 18.VI.1972, B.B. Lowery (ANIC); Flinders Range, Oraparinna, 9./11.IV.1977, P.J.M. Greenslade (ANIC); Innamincka, Candradecka Dam, 1.7 km WSW 27°13'04"S 140°50'55"E, 14.XI.1996, Stony Desert Survey (SAMA); Hamilton Ck, sand dune, 24°44'S 134°59'E, Birks (SAMA); 11.6 km SE Maryinna Hills, 27°40'18"S 132°54'59"E, 22.-27.III.1995, Pitjantjara Lands Survey (SAMA); 1.2 km S Custon, 36°26'46"S 140°55'10"E, 5.-8.XII.1995, Box Bulloak Survey (SAMA); Woakwine Forest, 37°16'S 139°56'E, 8.I.1997, McArthur & Fargher (SAMA); 5.2 km ESE Strangways Springs, Stuart Creek Stn., 29°10'59"S 136°35'49"E, 25.-30.IX.1995, Stony Desert Survey (SAMA); Riverdale, 35°58'37"S 136°51'36"E, 9.-15.III.1995, Herbert (SAMA); 5 km SE Optima Energy, 30°37'S 138°23'E, 2.-5.XII.1997, NWFR Survey (SAMA); Brownlow, 35°39'39"S 137°37'41"E, 17.-23.iii.1995, Herbert (SAMA); 7.5 km NW Apollo Bore, 29°52'40"S 137°36'15"E, iv.1995, L.Eyre Sth Survey (SAMA); Salt Creek, 8 km S, 36°12'S 138°40'E, iii.1994, Plant control comission (SAMA); Tandanya Kitchen, 35°53'S 136°50'E, 15.III.1995, Herbert (SAMA); 8.3 km N Tandanya Kitchen, 35°53'24"S 136°49'33"E, 9.-15.III.1995, Herbert (SAMA); 2.4 km W Western River, 35°41'04"S 136°36'22"E, 9.-15.III.1995, Herbert (SAMA); 1.5 km N Kurralinga, 35°53'S 136°50'E, 15.III.1995, Herbert (SAMA); 4.9 km SE Stokes Bay, 35°39'24"S 17°14'09"E, 17.-23.III.1995, Herbert (SAMA); Screech-Owl Ck., 29°52'S 137°36'E, 27.iv.1995, WMC & RGS Exped. (SAMA); Musgrave Ra., 9 km ENE Mitchel Knob, 18.-21.X.1994, 26°10'05"S 131°52'41"E, Pitjantjatjara Lands Survey (SAMA); 6.4 km W Mt Lindsay, Mulga, 27°01'36"S 129°48'54"E, Pitjantjatjara Lands Survey (SAMA); Puttapa Station, 0.6 km S Puttapa Gap, 30°43'S 138°24'E, 9.-12.XII.1997, NWFR Survey (SAMA); Cummins, 16 km E 34°16'S 135°54'E, 6.XII.1986, Forrest (SAMA); Woodlana, 3.4 km E, 35°38'30"S 137°22'13"E, 17.-23.III.1995, Herbert (SAMA); 12.2 km WSW Keilira telephone exch., 36°43'48"S 140°01'13"E, 1.-6.III.1996, SEFauna Survey (SAMA); Beachport, Salt Lake Track, 37°29'S 140°00'E, 24.II.1999, traps, McArthur (SAMA); Mt. Freeling Stn, 3.8 km WSW Yudnamutana Bore, 30°11'09"S 139°14'34"E, pitfalls, 16.-27.XI.1998, Flinders Ra surv YUH00401 (SAMA); 8.2km ESE Sentinel Hill, pitfalls, 26°07'13"S 132°31'11"E, X.1997, Pitjantjara Land Surv SEN09 (SAMA); Cape Cassini, 3.6 km SSE, 35°36'40"S 137°20'14"E, 17.-23.III.1995, Herbert (SAMA); Messent CP, 36°03'S 139°46'E, sedgeland, 12.-17.XII.1994, Owens (SAMA); Pine Hill Soakage, 6.5 km SSE, 36°36'12"S 140°54'33"E, 24.ii.-I.III.1997, SEFauna Survey; Mt. Coffin, 16 km SSE, 30°39'S 138°35'E, 9.-12.XII.1997, NWFR (SAMA); Goolwa, 35°30'S 138°47'E, I.1984, Greenslade (SAMA); Mount Remarkable, 1300', S. Flinders Ranges, 24.XI.1951, W.L. Brown (MCZC). **Western Australia:** Durokoppin Reserve, 27 km N Kellerberrin, III./VII./XI.1987, Lobry de Bruyn (WAMP); Whitby Range, 50 km E Warburton, 15.XI.1977, J.E. Feehan (ANIC); 46 mi. SSW Coolgardie, 6.XI.1969 (ANIC); Thomas River Station, 110 km E Esperance, yate-paperbk.-wattle for., 26.-28.I.1955, E.O. Wilson & C.P. Haskins (MCZC, NHMW).

Description of worker: Small species. Mandible carinulate-striate, masticatory margin armed with four teeth. Clypeus laterally rugulose, interspaces shiny and glabrous, occasionally with faint microsculpture; anterior clypeal margin produced into an apron consisting of only few to several stout apically rounded denticles (Fig. 8). Frontal triangle unsculptured and shiny, partly with faint microsculpture. Dorsal part of head above antennal scrobes less trapezoid than in following species, lateral frontal margins evenly narrowing anteriorly from occipital corners towards clypeus, slightly sinuate, anteriorly slightly diverging; ventral part of head below antennal scrobes wider than dorsal part,



Figs. 1 - 7: (1 - 3): *Meranoplus curvispina*: (1) mid-body, lateral view, lectotype worker (2) promesonotal shield, dorsal view, lectotype worker, (3) gyne, mesosoma, dorsal view. (4 - 6): *M. puryi*: (4) mid-body, lateral view, lectotype worker (5) promesonotal shield, dorsal view, lectotype worker, (6) gyne, mesosoma, dorsal view; (7) Measurements of nodes.

genae and compound eyes prominent and visible from above. Frons in anterior half rugulose with only sparse transverse meshes, posteriorly densely and regularly reticulate, particularly so in vertexal area; meshes ca. 40 - 50 μm wide, interspaces glabrous or with microsculpture; with decumbent pubescence consisting of fine arcuated hairs (ca. 70 - 90 μm), and single longer erect setae (ca. 120 - 160 μm). Antennal scrobes almost reaching posterior corners of head, glabrous and shiny anteriorly, distinctly transversally carinulate in posterior half, with additional faint microsculpture between carinulae. Genae roughly carinate to rugulose; posterior corners of head reticulate. Compound eyes in dorsal view situated behind middle of lateral sides of head; maximum diameter of eye 0.21 ± 0.01 [0.18, 0.24] mm with 14 - 17 ommatidia in the longest row (REL 0.26 ± 0.02 [0.23, 0.31]).

Promesonotal shield (Fig. 2) wider than long, overhanging lateral sides of alitrunk, propodeum overhung by posterior mesonotal projections. Anterior pronotal angles provided with stout acute anteriorly projecting spines, lateral sides slightly concave; promesonotal suture invisible, at its level laterally with small circular translucent fenestra on each side of shield at lateral margin; posterior to fenestra with acute posteriorly directed spine; at hind margin of mesonotal shield with four projections, lateral ones acute and postero-laterally directed, paramedian ones posteriorly directed, shorter and apically bluntly rounded; all projections connected by lamellate translucent areas.

Declivity of propodeum glabrous and shiny, anteriorly with microsculpture and occasional carinulae immediately below mesonotal shield; propodeal spines robust and long, situated in upper propodeal half, in dorsal view distinctly diverging and arcuated inwards. Suture between dorsal alitrunk and propodeum situated in the angle where posterior mesonotal margin meets declivity. Promesonotal shield reticulate throughout, meshes ca. 40 - 70 μm wide, in lamellate areas rugose or unsculptured; with pilosity consisting of shorter decumbent hairs (80 - 120 μm) and longer outstanding ones (ca. 150 - 270 μm). Lateral sides of alitrunk roughly rugose to rugulose.

Petiole in lateral view widely triangular, tapering from base to crest, with anterior face meeting dorsum at an acute angle and forming a sharp low transverse lamellate ridge; dorsal face longer than in *M. puryi*, obliquely meeting posterior face in a wide angle; anterior petiolar face smooth, dorsum lateral sides and posterior face rugose to rugoreticulate; medioventral low lamella with anterior denticle, not as offset as in *M. puryi*. Postpetiole nodiform in profile, almost as high as petiole, all surfaces reticulate. Petiole and postpetiole with similar long, posteriorly directed hairs.

First gastral tergite, at least anteriorly, distinctly striate, changing into microreticulation posteriorly, with decumbent pubescence (80 - 120 μm) and outstanding erect setose hairs (150 - 220 μm).

Colour: uniformly ferrugineous, frequently bicoloured with the head, or head and mesosoma darker.

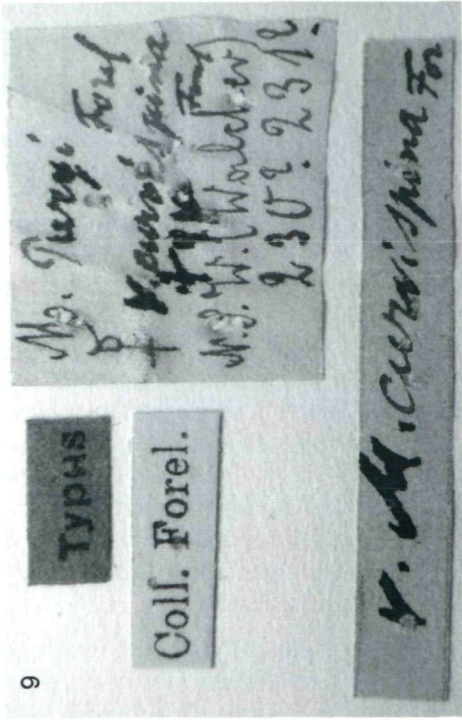
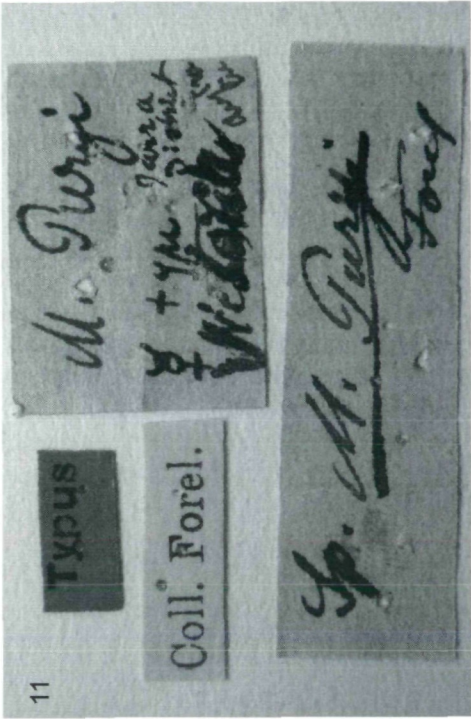
Description of queen: Head as in worker, ventro-laterally bordered by distinct lamellate, interrupted carina; Clypeus laterally rugulose, with anterior clypeal margin denticulate. Eyes of medium size EYE: 0.42 ± 0.00 [0.42, 0.43], with 17 - 18 ommatidia in the longest row (REL: 0.25 ± 0.00 [0.25, 0.26]); OD: 0.29 ± 0.01 [0.29, 0.30]. Pronotum reticulate throughout, lateral sides posteriorly angulate. Mesonotum rugulose reticulate, somewhat triangularly and more narrowly inserted into pronotal rear border (Fig. 3). Propodeum anteriorly rugulose, propodeal spines depressed and apically rounded (Bobbin Head) or acute and narrow (Kurralinga). Petiole in lateral view with anterior face straight and glabrous, with similar low transverse lamellate crest as in worker. Postpetiole as in worker. Gaster entirely microreticulate. Antennal club and dorsum of head fuscous, remainder of body uniformly ferrugineous.

General Distribution (Fig. 12): Widely distributed in southern parts of Australia, reaching Townsville in the north-east.

Biology: No details upon the biology of the species are known. Label data make it likely that *M. curvispina* nests in the ground. This corresponds with TAYLOR & BROWN (1985).

Meranoplus puryi FOREL, 1902 (Figs. 4 - 6, 10, 11, 13; Tab. 1)

Meranoplus puryi FOREL, 1902: 456 (worker). - TAYLOR & BROWN 1985: 68, TAYLOR 1987: 39 (catalogue); TAYLOR, 1990: 39 (= senior synonym of *curvispina* FOREL, 1910), BOLTON 1995: 251 (catalogue), SHATTUCK 1999: 143 (listed). - Two syntype workers (MHNG), mounted together on one pin, were studied. The top specimen is here designated as **lectotype**: "Typus [printed on red label] \ M. Puryi ♀ type Yarra district Victoria Australie \ Sp. M. Puryi Forel \ Coll. Forel." (Fig. 11). The second specimen (MHNG) and one further specimen in ANIC, "puryi R. W. Taylor Accession 68. FOR. 106"



Figs. 8 - 9: *Meranoplus curvispina*: (8) clypeus, (9) original labels of lectotype.
Figs. 10 - 11: *Meranoplus puryi*: (10) clypeus, (11) original labels of lectotype.

(original labels lacking, thus the specimen was apparently removed from the type series, (see TAYLOR 1990), are **paralectotypes**. Since syntypes are spread in various collections, a lectotype is here designated.

Type locality: Yarra district [37°S 145°E], Victoria, Australia.

Additional material examined (73 workers, 8 gynes): **New South Wales:** "Tweed R." [?either Tweed River (28°13'S 153°33'E) or Tweed Range (28°29'S 153°09'E) are possible as localities], N.S.W., W.W.F., 20.X.1903, W.W. Frogatt collection (MVMA); Leura, W M Mann (USNM); 150km W Sydney, Blue Mountains, Hartley Vale, 14.XI.1987, Buschinger (NHMW); Mt Wilson, Blue Mts, 3000 ft., 22.V.1959, B.B. Lowery, dry sclerophyll (ANIC); Waterfall, by sweeping, 23.XI.1959, Nikitin (BML); Loddon R. [= Loddon Creek] nr. Bulli, 34°20'S 150°55'E, 1.X.1969, Nikitin, by net sweeping on river banks (BML).

Description of worker: Small species. Mandible carinulate, masticatory margin armed with four teeth. Mid-portion of clypeus glabrous and shiny, slightly concave, in particular laterally with longitudinally to obliquely arranged carinulae (ocasionally clypeus in its posterior area distinctly transversely carinulate); area around carinulae feebly sculptured; anterior clypeal margin entire and concave, antero-lateral corners protruding as small dents (Fig. 10). Frontal triangle unsculptured and shiny, partly with faint microsculpture. Dorsal part of head above antennal scrobes trapezoid, lateral sides evenly narrowed from posterior corners towards clypeus, slightly sinuate; ventral part of head below antennal scrobes considerably wider than dorsal part, genae and compound eyes distinctly prominent and visible from above. Frons anteriorly longitudinally carinate to rugose with only few transverse meshes, posteriorly densely reticulate, particularly so at rear, meshes with ca. 35 - 60 µm diameter; with dense, erect and arcuated hairs (ca. 100 - 190 µm), longest positioned at posterior corners. Antennal scrobes almost reaching posterior corners of head, distinctly transversely carinulate, particularly so in posterior half, with additional microsculpture inbetween. Genae carinate to rugulose, posterior ventro-lateral corners of head reticulate. Compound eyes in dorsal view situated behind middle of lateral sides of head. Maximum diameter of eye 0.19 ± 0.01 [0.17, 0.19] mm with 12 - 14 ommatidia in its longest row (REL 0.24 ± 0.01 [0.24, 0.25]).

Promesonotal shield (Fig. 5) wider than long, overhanging lateral sides of alitrunk; propodeum overhung by posterior mesonotal projections. Anterior pronotal corners provided with stout anteriorly projecting short spines or teeth; pronotum more or less parallelsided; promesonotal suture invisible, at its level laterally a small circular translucent fenestra on each side of shield at or near lateral margin; posterior to fenestra with rectangular posteriorly directed stout tooth; at hind margin of mesonotal shield with four, apically bluntly rounded (lateral ones occasionally acute) projections, which overhang propodeal declivity. Anterior propodeal part (below mesonotal shield) carinulate, glossy below; lateral sides at about middle of propodeal length provided with medium-sized and considerably diverging lateral spines; Suture between dorsal alitrunk and propodeum situated in angle where posterior mesonotal margin meets the declivity. Promesonotal shield reticulate throughout, meshes ca. 45 - 70 µm wide, in lamellate areas rugose or unsculptured; with long erect pilosity (ca. 100 - 250 µm). Lateral sides of alitrunk roughly rugose to rugulose.

Petiole in profile triangular, tapering from base to crest, with narrow oblique dorsal face; anterior petiolar face smooth, posterior face and lateral sides rugulose to carinate, dorsum with reticulum; ventral face with distinctly offset, small anteriorly projecting

Table 1: Morphometric data of workers and gynes of *Meranoplus curvispina* and *M. puryi*.

	<i>curvispina</i> worker (n = 41)	<i>puryi</i> worker (n = 14)	<i>curvispina</i> gyne (n = 3)	<i>puryi</i> gyne (n = 4)
TL	3.44 ± 0.19 [2.93, 3.88]	3.28 ± 0.14 [2.93, 3.48]	4.34 ± 0.08 [4.28, 4.45]	4.59 ± 0.14 [4.43, 4.80]
HL	0.80 ± 0.04 [0.70, 0.90]	0.79 ± 0.03 [0.74, 0.83]	0.96 ± 0.01 [0.94, 0.95]	0.94 ± 0.01 [0.93, 0.96]
HW	0.80 ± 0.04 [0.69, 0.90]	0.79 ± 0.04 [0.70, 0.84]	0.94 ± 0.02 [0.91, 0.96]	0.95 ± 0.02 [0.93, 0.96]
CI	99.96 ± 2.14 [94.12, 104.62]	100.03 ± 2.51 [99.92, 104.84]	99.51 ± 1.66 [97.28, 101.26]	101.17 ± 0.98 [100.00, 102.67]
CS	0.80 ± 0.04 [0.69, 0.90]	0.79 ± 0.03 [0.72, 0.83]	0.94 ± 0.00 [0.92, 0.96]	0.95 ± 0.01 [0.93, 0.96]
EYE	0.44 ± 0.02 [0.41, 0.51]	0.40 ± 0.01 [0.38, 0.43]	0.42 ± 0.00 [0.42, 0.43]	0.45 ± 0.02 [0.43, 0.47]
SL	0.56 ± 0.02 [0.48, 0.63]	0.54 ± 0.02 [0.49, 0.56]	0.61 ± 0.02 [0.58, 0.63]	0.61 ± 0.01 [0.59, 0.63]
SI 1	70.63 ± 1.32 [68.12, 73.44]	68.15 ± 1.81 [65.48, 71.16]	64.60 ± 1.15 [63.05, 65.79]	64.24 ± 0.50 [63.51, 64.94]
SI 2	70.60 ± 1.36 [68.12, 73.95]	68.14 ± 1.43 [66.62, 71.16]	64.45 ± 1.61 [62.18, 65.79]	64.61 ± 0.67 [63.51, 65.16]
PML	0.68 ± 0.04 [0.60, 0.78]	0.66 ± 0.03 [0.58, 0.71]	- -	- -
PW	0.86 ± 0.05 [0.74, 0.99]	0.79 ± 0.04 [0.70, 0.85]	1.00 ± 0.02 [0.98, 1.03]	1.02 ± 0.03 [0.98, 1.06]
PMI	126.62 ± 4.32 [120, 137.25]	119.62 ± 4.16 [108.85, 124.07]	- -	- -
PMD	0.99 ± 0.05 [0.88, 1.13]	0.94 ± 0.05 [0.84, 1.03]	- -	- -
AL	0.82 ± 0.04 [0.69, 0.90]	0.81 ± 0.03 [0.75, 0.85]	1.10 ± 0.03 [1.06, 1.13]	1.18 ± 0.01 [1.16, 1.18]
PSL	0.34 ± 0.03 [0.29, 0.41]	0.27 ± 0.01 [0.25, 0.29]	0.36 ± 0.03 [0.34, 0.40]	0.33 ± 0.03 [0.29, 0.35]
PTLL	0.29 ± 0.02 [0.23, 0.33]	0.25 ± 0.01 [0.21, 0.26]	0.32 ± 0.01 [0.31, 0.33]	0.34 ± 0.02 [0.31, 0.35]
PTLH	0.36 ± 0.03 [0.29, 0.44]	0.36 ± 0.01 [0.34, 0.38]	0.41 ± 0.01 [0.40, 0.41]	0.43 ± 0.02 [0.39, 0.45]
PTLI	80.59 ± 5.07 [66.67, 92.59]	66.24 ± 2.76 [62.07, 71.43]	77.62 ± 1.29 [75.85, 78.88]	79.58 ± 1.06 [77.78, 80.54]
PTDW	0.31 ± 0.02 [0.28, 0.38]	0.29 ± 0.02 [0.25, 0.35]	0.36 ± 0.01 [0.36, 0.39]	0.41 ± 0.04 [0.35, 0.45]
PPLL	0.27 ± 0.02 [0.24, 0.31]	0.24 ± 0.01 [0.21, 0.25]	0.28 ± 0.02 [0.25, 0.30]	0.29 ± 0.02 [0.26, 0.31]
PPLH	0.34 ± 0.02 [0.30, 0.43]	0.31 ± 0.01 [0.29, 0.33]	0.39 ± 0.02 [0.38, 0.41]	0.42 ± 0.03 [0.38, 0.45]
PPLI	78.30 ± 4.47 [70.97, 88.71]	76.70 ± 1.44 [73.91, 80.00]	71.35 ± 3.41 [66.67, 74.67]	68.68 ± 1.23 [66.67, 69.87]
PPDW	0.32 ± 0.02 [0.29, 0.38]	0.29 ± 0.02 [0.25, 0.34]	0.39 ± 0.02 [0.36, 0.41]	0.42 ± 0.05 [0.35, 0.46]
PI	97.09 ± 3.71 [88.89, 104.35]	98.31 ± 3.19 [92.00, 103.70]	97.98 ± 2.86 [93.94, 100.00]	97.97 ± 2.24 [94.59, 100.00]

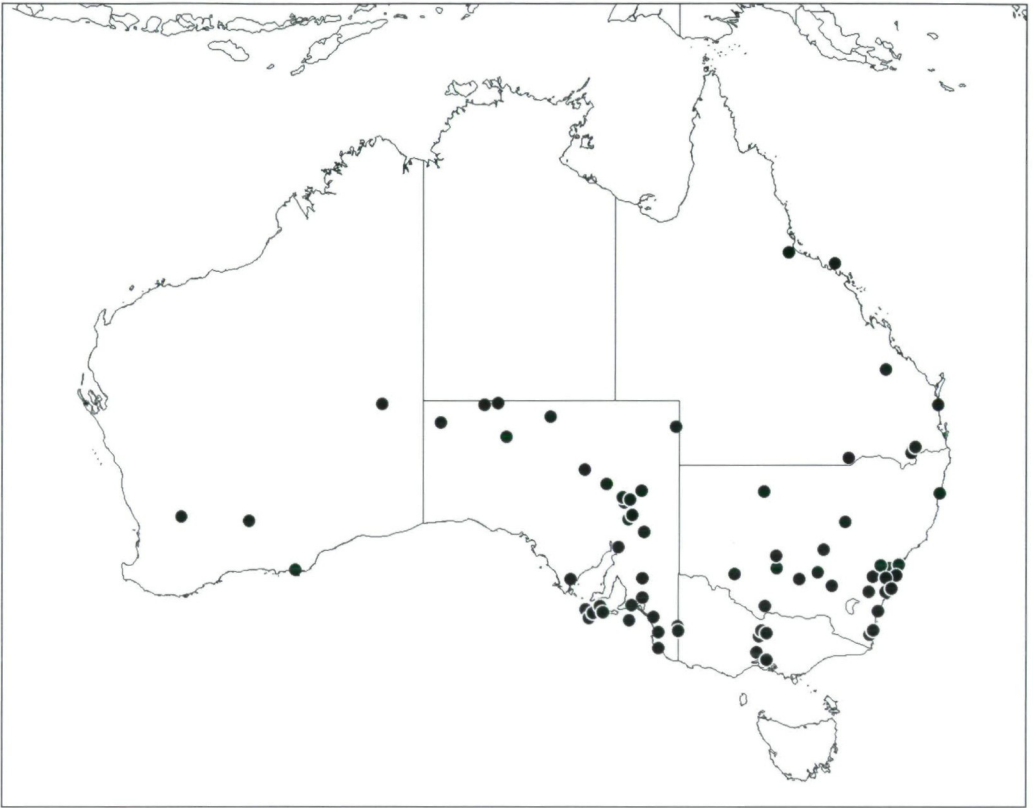


Fig. 12: Distribution of *Meranoplus curvispina*.

denticle. Postpetiole in profile nodiform, distinctly lower than petiole, all surfaces reticulate. Petiole and postpetiole with similar long, posteriorly directed hairs.

First gastral tergite distinctly striate, at rear microreticulate, with similar posteriorly directed pilosity.

Colour: brown with head slightly darker than remainder of body; specimens from "Tweed R." and Leura usually have the head, alitrunk, petiole and postpetiole of a darker brown, and the gaster markedly brighter.

Description of queen: Head dark brown, shape in dorsal view as in worker; clypeus somewhat pronounced, medially concave, in particular laterally rugulose, or whole clypeus transversely rugulose, anterior clypeal margin entire, laterally produced into short stout denticles. Ventrolateral border of head less distinct than in *M. curvispina*. Eyes of medium size EYE: 0.45 ± 0.02 [0.43, 0.47], with 16 - 18 ommatidia in the longest row (REL: 0.26 ± 0.01 [0.25, 0.27]); OD: 0.29 ± 0.01 [0.25, 0.27]. Pronotum entirely reticulate, lateral sides uniformly sinuate. Mesonotum longitudinally rugose to rugose-reticulate, anterior margin roundly inserted into rear of pronotum (Fig. 6). Propodeal spines distinctly depressed, apically rounded. First gastral tergum distinctly striate anteriorly, posteriorly with delicate microreticulum. Head, anterior mesosoma, petiole, postpetiole and appendages irregularly darker brown with brighter patches, gaster ferruginous.

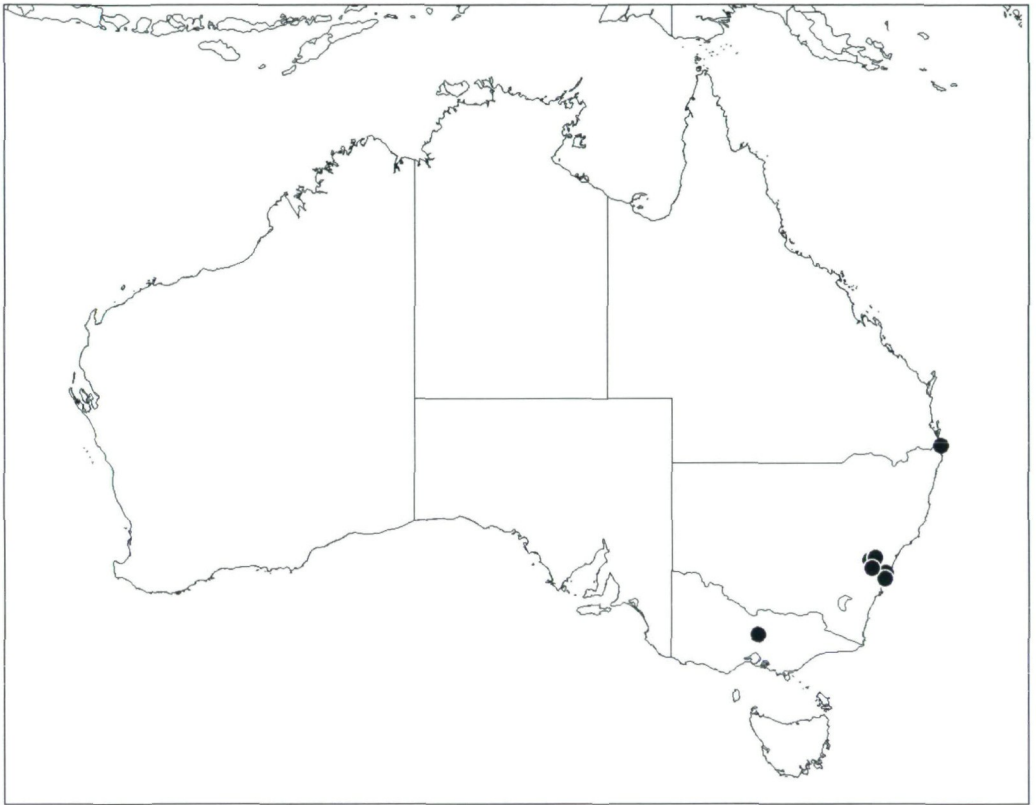


Fig. 13: Distribution of *M. puryi*.

General distribution (Fig. 13): Known from the type locality (Victoria) and New South Wales.

Biology: No details upon the biology of the species are known. Label data make it likely that *M. puryi* nests in the ground. This corresponds with TAYLOR & BROWN (1985).

Discussion and differential diagnosis

The taxa treated here are only two of a whole set of smaller species, which seem to belong to one or several groups of related forms. Since many of these still await description (Schödl, in prep.), I refrain from constituting a species group. However, following the key to species groups as presented by ANDERSEN (2000) leads to "miscellaneous groups".

Although superficially similar, *Meranoplus curvispina* and *M. puryi* can easily be distinguished from each other by several traits: shape of anterior clypeal margin: anterior clypeal margin produced into apron consisting of stout apically rounded denticles in *M. curvispina*, anterior margin entire in *M. puryi*; shape of promesonotal shield: appendages of promesonotal shield more distinctly developed in *M. curvispina*, shield somewhat more elongate in *M. puryi*; petiolar structure: petiole distinctly narrower

dorsally in *M. puryi*; different shape and length of propodeal spines: spines in *M. curvispina* long and arcuated, shorter and almost straight in *M. puryi*.

In gynes the differing shape of the pro-mesonotal suture, the anterior clypeal margin (as in workers) and the petiolar structure (as in workers) are reliable means for separation.

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