

THE AUSTRALIAN ANTS OF THE *POLYRHACHIS RELUCENS* SPECIES-GROUP  
(HYMENOPTERA: FORMICIDAE: FORMICINAE)

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The Australian ants of the *Polyrhachis relucens* species-group, traditionally placed in the subgenus *Myrma* Billberg, are reviewed. Four species are recorded, including *Polyrhachis andromache* Roger, 1863, and *Polyrhachis rufofemorata* Fr.Smith, 1859, and two, *P. inusitata* and *P. foreli*, which are described as new. A key to species is provided, and all are illustrated. Notes on distribution and nesting habits are included.

□ *Formicidae, Polyrhachis, relucens-group, Australia, systematics.*

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Four species of the *Polyrhachis relucens* species-group are recorded from Australia, two of which are described as new. The ants of this group are traditionally assigned to the subgenus *Myrma* Billberg and can be characterised by the following combination of characters:

1. Dorsum of mesosoma convex in profile; lateral margins distinct, with margination interrupted only at the sutures.
2. Pronotum armed with a pair of relatively long, straight, more or less anteriorly-directed spines.
3. Propodeum either unarmed or with tubercles or small teeth.
4. Promesonotal suture and propodeal groove distinct.
5. Petiole scale-like, usually armed with a pair of dorsal spines or denticles, each with a laterally oriented tooth or blunt angle below its base.
6. First gastral tergite basally truncated or shallowly concave.
7. Anterior clypeal margin arcuate, often bluntly truncated medially.
8. Mandibles at their bases finely longitudinally striate.
9. Frontal carinae forming sharply raised, lamellate flanges; the area between them relatively narrow.

The illustrations were prepared using a Zeiss (Oberkochen) SR Stereomicroscope and camera lucida. All depict the primary types, except those of the geographically variable *P. rufofemorata* Fr.Smith, where a typical Australian specimen, characterised by gracile stature and spinose petiole, is illustrated. The measurements (in mm) and indices are those of Kohout (1988a). The abbreviations for institutions and depositories are as used by Taylor and Brown (1985) and Kohout (1988a). Some distribution records are cited using

1-degree coordinates, following Taylor (1987). Most of the specimens studied are lodged in the ANIC, QM and RJK collections.

***Polyrhachis andromache* Roger, 1863**  
(Figs 1, 1a, 6, 10)

*Polyrhachis Hector* Fr.Smith, 1859:142. Holotype worker. INDONESIA: Aru I.(A.R.Wallace), OUM (Examined). Nom. preocc. Junior homonym of *Polyrhachis Hector* Fr.Smith, 1857.

*Polyrhachis andromache* Roger, 1863:8, 46. Replacement name.

Full reference citations with synonymy are given by Kohout (1988b) and are not repeated here.

DIMENSIONS OF HOLOTYPE

TL 8.82; HL 2.32; HW 1.81; CI 78; SL 2.82; SI 156; PW 1.21; MTL 2.82.

ADDITIONAL MATERIAL EXAMINED

NEW GUINEA: Ighibirei, vii-viii 1890, L.Loria. PAPUA NEW GUINEA: Eastern Highlands Prov., Kratke Ra., Mt Piora, 12 June 1966, O.R. Wilkies. Northern Prov., Popondetta, 15 i 1971, B.B.Lowery; Oro Bay, 30mi S of Popondetta, 14 i 1971, B.B.Lowery. Western Prov., Middle Morehead Riv., 08.50 S x 141.30 E, August 1967, R.Pullen. AUSTRALIA: Queensland, Torres Strait, Badu I., 18 ii 1984, J.H.Sedlacek. Cape York Penins., Bamaga, 21 i-12 ii 1984, J.H.Sedlacek; 10.53 S x 142.23 E, 18-24 March 1987, RJK acc. 87.5. Lockerbie Scrub, January 1975, G.B.Monteith; xii 1983, J.H.Sedlacek; 9-11 xii 1986, J.Gallon; 10.46 S x 142.29 E, 19-23 March 1987, RJK acc. 87.19, 25, 49, 59, 73. Iron Range, 1-3 vii 1976, P.Filewood; 1-17 vii 1978, S.van Dyck; 12.43 S x 143.18 E, 26-31 July 1981, RJK acc. 81.130, 166, 194, 197, 214, 215; 17 iii 1984, J.Sedlacek. West Claudie Riv., 3-10 xii 1985, G.B.Monteith and D.Cook; East Claudie Riv., 6 xii 1985, G.B.Monteith and D.Cook.

## WORKER

Dimensions: TL 7.58-9.73; HL 2.12-2.50; HW 1.65-2.01; CI 78-82; SL 2.56-2.97; SI 145-158; PW 1.18-1.51; MTL 2.59-3.07 (30 measured).

Mandibles with 5 teeth. Clypeus in profile almost straight; the anterior margin entire. Sides of head in front of eyes shallowly concave, slightly converging anteriorly; widely rounded behind. Eyes convex, in full face view usually only marginally breaking the outline of the head. Frontal carinae sharply raised. Pronotal dorsum with a pair of long, divergent, somewhat flattened spines; their dorsolateral borders continuous with the pronotal margins. Mesonotal dorsum transversely convex, wider than pronotum at the base, the lateral margins converging strongly posteriorly. Propodeal dorsum almost flat, with margins converging into weakly upturned posterior angles. Petiole with two posterodorsally directed spines and, between them, a more or less distinct, small intercalary tooth. A somewhat flattened, deeply emarginated tooth, is situated laterally below the level of the base of each spine. First gastral tergite shallowly concave basally.

Mandibles finely, regularly striate, with numerous piliferous pits. Head and lateral branches of mesosoma finely reticulate; dorsum of mesosoma, petiole and the gaster shagreened.

A few long, erect, somewhat undulated hairs scattered on dorsum of the head and mesosoma. Such hairs are relatively more abundant and posteriorly directed on the gaster. Bright golden or, less frequently, silvery pubescence more or less obscuring the underlying sculpturation, and abundant all over the body, except on the mandibles and tips of the spines.

Generally black, with coxae, femora, tibia and proximal and distal ends of the antennal scapes yellow or light yellowish-brown.

## FEMALE

Dimensions: TL 9.98-11.59; HL 2.50-2.74; HW 2.01-2.21; CI 79-82; SL 2.87-3.12; SI 136-143; PW 2.03-2.22; MTL 3.06-3.22 (7 measured).

Female almost identical to worker apart from its larger size and the characters identifying full sexuality. The pronotal spines are shorter and downturned, and the dorsum of petiole armed with 3 distinct teeth (Fig. 1a).

Males and immature stages are present in the ANIC and RJK spirit collections.

## REMARKS

Colonies of *P. andromache* usually nest in tree or other plant cavities (as in hollow internodes of

a standing dead bamboo *Bambusa forbesii* at Iron Range), but occasionally build pocket-like nests of silk and debris against tree trunks (Kohout, 1988b). The known distribution is from Moluccas to New Guinea and northern Australia, where the species has been recorded from Torres Strait Islands and Cape York Peninsula as far south as Iron Range (Grid cells 6/145, 8/141, 9/142, 10/142, 10/143, 12/143).

***Polyrhachis foreli* sp. nov.**  
(Figs 2,2a,7,11)

*Polyrhachis (Myrma) relucens* r. *andromache* var. *andromeda* Forel, 1915:110. Syntype workers. AUSTRALIA: Queensland, Bellenden Ker (E.Mjöberg) NHRM, GMNH, ANIC (Examined). (An inadmissible infrasubspecific name).

## MATERIAL EXAMINED

HOLOTYPE: AUSTRALIA: Queensland, NE. Tully, nr Clump Point, 17.52 S x 146.07 E (type locality), 30 April 1969, ex rotting wood piece, R.W. Taylor acc. 69.123 (worker).

PARATYPES: data as for holotype (5 nidoparatype workers, 1 nidoparatype dealate female, 3 nidoparatype alate females, 4 nidoparatype males and immature stages - larvae and pupae of 2 males and 1 female); c. 6 km W of South Mission Beach, 17.56 S x 146.02 E, 18-19 July 1980, RJK acc. 80.60 (19 paratype workers).

## TYPE DEPOSITION

Holotype (Type no. 7734), 3 nidoparatype workers, 2 nidoparatype females (1 dealate, 1 alate), 4 nidoparatype males and 2 paratype workers in ANIC; 2 nidoparatypes (1 worker, 1 alate female) and 2 paratype workers in QM; 2 nidoparatypes (1 worker, 1 alate female) in BMNH; 4 paratype workers in RJK; 1 paratype worker each in AM, BPBM, GMNH, MCG, MCZ, NHRM, NHMW, NMV, OUM, USNM. ZIK.

## WORKER

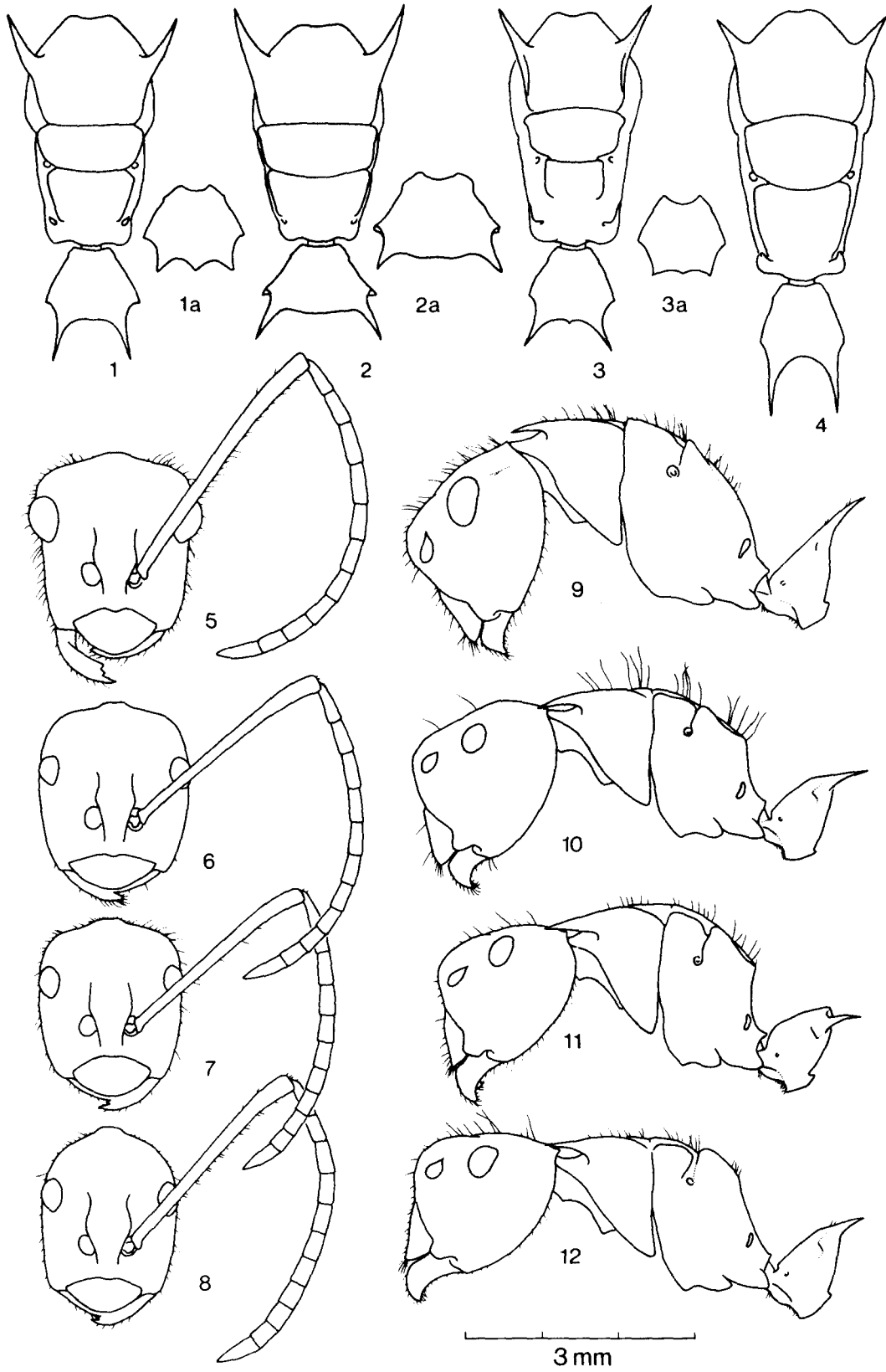
Dimensions (holotype cited first): TL 8.62, 8.16-9.37; HL 2.28, 2.21-2.46; HW 1.87, 1.75-1.96; CI 82, 78-82; SL 2.71, 2.59-2.90; SI 145, 145-153; PW 1.59, 1.50-1.75; MTL 2.84, 2.71-3.06 (25 measured).

FIGS 1-4. Dorsal view of mesosoma and anterior view of petiole (pilosity omitted): 1, *P. andromache*; 2, *foreli*; 3, *rufofemorata*; 4, *inusitata*.

FIGS 1a-3a. Anterior view of petiole (females): 1a, *P. andromache*; 2a, *foreli*; 3a, *rufofemorata*.

FIGS 5-8. Head in full face view (right antennae omitted): 5, *P. inusitata*; 6, *andromache*; 7, *foreli*; 8, *rufofemorata*.

FIGS 9-12. Lateral view (antennae, legs and gaster omitted): 9, *P. inusitata*; 10, *andromache*; 11, *foreli*; 12, *rufofemorata*.



## ADDITIONAL MATERIAL EXAMINED

AUSTRALIA: Queensland, Cape York Penins., Iron Ra., 1-3 July 1976, P. Filewood; 12.43 S x 143.18 E, 26-31 July 1981, RJK acc. 81.182. West Claudie R., 3-10 xii 1985, G.B. Monteith and D. Cook. Cooktown, Staudinger et Bang-Hass. Home Rule Stn., 32km S of Cooktown, Oct-Nov 1974, T.P. Tebble. Shipton's Flat, 35km S of Cooktown, 22 April 1982, G.B. Monteith. Mt Finnigan, 37km S of Cooktown, 19-21 April 1982, G.B. Monteith. Gap Creek, Twelve-mile Scrub, 15.50S x 145.19E, V. Davies and R. Monroe. Helenvale, 10-20 July 1976, P. Filewood. Cape Tribulation, 29 xii-8 i 1983, G.B. Monteith; 16.04S x 145.27E, 6 xii 1985, RJK acc. 85.3. Yarrabah, c. 9km E of Cairns, 16.54S x 145.51E, 22, 24 July 1980, RJK acc. 80.119. N Bell Peak, 20km S of Cairns, 16 Sept 1981, G.B. Monteith and D. Cook. Bellenden Ker Landing, Russell R., 1-9 Nov 1981, Qd Museum/Earthwatch Exp.; ditto, 4 viii 1975, B.B. Lowery. Babinda, 1920, J.F. Illingworth. Hinchinbrook I., Gayundah Ck, c. 10m, 8-18 Nov 1984, G.B. Monteith.

## WORKER

Dimensions: TL 7.36-10.33; HL 1.96-2.46; HW 1.59-2.00; CI 78-82; SL 2.40-2.91; SI 145-153; PW 1.31-1.78; MTL 2.31-3.12 (25 measured).

Mandibles with 5 teeth, which reduce progressively in length towards the base. Clypeus in profile sinuate, convex above, shallowly concave below, the anterior margin somewhat obtusely truncated medially. Sides of head gently convex, converging anteriorly in front of eyes, and narrowly rounded behind the eyes into the weakly convex occipital margin. Eyes convex, situated well back on the head, usually not or only marginally breaking the cephalic outline. Frontal carinae with strongly raised lobes; area between them more than twice as wide behind than in the front. Pronotum with dorsum almost flat between a pair of long, horizontal, anteriorly directed, somewhat dorso-medially flattened spines. Outer borders of spines acute and continuous basally with the pronotal margins. Mesonotal dorsum wider than pronotum at the base, strongly transverse; lateral margins slightly raised, acute. Propodeum with narrowly rounded anterior angles, its sides converging posteriorly, terminating in more or less distinct, short, transverse tubercles, which are sometimes produced into small, posteriorly directed teeth. Declivity abrupt, concave in profile. Petiole in side view biconvex, armed with a pair of spines situated on the dorsolateral angles and separated by the transversely convex, more or less acute dorsal edge of the segment. A short, somewhat flattened, emarginated tooth on each side, situated laterally below the base of the advanced spine. Base of first gastral tergite shallowly concave.

Mandibles towards the base finely, longitudi-

nally striate, with numerous piliferous pits. Clypeus finely shagreened; anterior margin medially with a few distinct pits from which long hairs rise. Front of head shagreened; sculptural intensity more distinct laterally and posteriorly, with the dorsal face and lateral branches of occiput more or less longitudinally striate-punctate. Dorsum and sides of mesosoma fairly regularly longitudinally striate; sculptural intensity decreasing anteriorly and posteriorly, with the pronotal dorsum, spines, propodeal declivity, petiole and gaster shagreened.

Medium long, erect, silvery or golden hairs present in variable density on all body surfaces, but almost absent from the petiole and anterior face of the first gastral tergite. Leading edge of the antennal scapes occasionally with a few scattered short erect hairs. Relatively long, appressed, silvery to golden pubescence most dense on clypeus, frontal areas of head and the mesosomal dorsum.

Black throughout; only the appendages may sometimes be reddish-brown.

## FEMALE

Dimensions: TL 10.23-11.44; HL 2.50-2.67; HW 1.96-2.14; CI 77-81; SL 2.87-3.06; SI 140-148; PW 2.21-2.37; MTL 3.06-3.22 (7 measured).

The female closely resembles the worker and, besides the usual characters identifying full sexuality, differs only in the following details: In full face view eyes clearly breaking the outline of head; pronotal spines much shorter, downturned; petiole with spines shorter, and the dorsal edge between them more or less medially emarginated (Fig. 2a).

Males and immature stages are present in the ANIC spirit collection.

## REMARKS

The name-bearing specimens of the invalid infrasubspecific name, *Polyrhachis relucens andromache andromeda* Forel, 1915, are conspecific with the types of *P. foreli* (material from Forel collection has been examined). For reasons discussed by Taylor (1986), and following advice from Dr R.W. Taylor and Dr W.D.L. Ride, Chairman of the *International Commission on Zoological Nomenclature*, I have chosen not to use Forel's infrasubspecific epithet as the name for this species.

As well, the types of *P. foreli* are almost certainly closely related to the papuan name-bearing specimens of *Polyrhachis relucens decipiens papuana* Emery, 1897 (an another

invalid infrasubspecific name). Its workers and those of *foreli* are remarkably similar and share many features including the configuration of the petiolar spines. They might well be conspecific. However, examination of available queens of the two forms suggests that the queens are not conspecific. Females of *P. foreli* closely resemble their workers, while the only available putative female of the '*P. relucens decipiens papuana*' (from Emery's study series) shows significant differences. The petiolar spines, for example, are situated on the uppermost angles of the leading dorsal edge of the segment. Because of this, I doubt that the '*P. relucens decipiens papuana*' female is conspecific with the workers of Emery's series. The series thus appears to be composite and the workers and female might not have been collected together and actually represent two different species.

Colonies of *P. foreli* usually nest in old, partly rotten logs, but some were also found nesting in the ground, under stones (Taylor, pers.comm.). The known distribution ranges from Iron Range on Cape York Peninsula, south to Hinchinbrook Island (Grid cells 12/143, 15/145, 16/145, 17/145, 17/146, 18/146).

***Polyrhachis inusitata* sp.nov.**

(Figs 4,5,9)

**MATERIAL EXAMINED**

**HOLOTYPE:** AUSTRALIA: Queensland, Cape York Penins., West Claudie Riv., Iron Range area, 12.44 S x 143.14 E (type locality), 3-10 December 1985, G.B.Monteith and D.Cook (worker).

**Paratypes:** data as for holotype (1 worker). McIlwraith Ra., Leo Creek Rd., 10-20 July 1976, P.Filewood (1 worker).

**TYPE DEPOSITION**

Holotype in QM (Type no. T.11122); 1 paratype each in ANIC and RJK.

**WORKER**

Dimensions (holotype cited first): TL 10.53, 9.38-9.82; HL 2.56, 2.31-2.37; HW 1.87, 1.72-1.75; CI 73, 74; SL 3.53, 3.30-3.48; SI 189, 192-199; PW 1.61, 1.36-1.51; MTL 3.56, 3.38-3.58 (3 measured).

Mandibles with 5 teeth. Clypeus almost straight in profile, anterior margin obtusely truncated medially. Head in front of eyes converging anteriorly, its lateral margins shallowly concave. Behind the eyes the head is markedly wider, with the sides forming a blunt continuous ridge

extending on each side toward the posterior angle, where it meets a similar ridge which commences on each side at the base of mandible and separates the gena from the ventral parts of the head. Eyes large, convex, situated well back giving the face a somewhat elongated appearance; in full face view the eyes clearly break the outline of the head. Frontal carinae with strongly raised lobes. Pronotal dorsum armed with a pair of relatively short, downturned, dorsally flattened spines; their lateral borders continuous with the posteriorly converging pronotal margins. Mesonotal dorsum narrower than pronotal, feebly transversely convex. Propodeum with anterior angles somewhat upturned, sides weakly margined and only slightly converging posteriorly, terminating in ill-defined angles. Petiolar dorsum armed with a pair of relatively long, slender, subparallel spines; the lateral teeth reduced to more or less distinct denticles. Base of first gastral tergite shallowly truncated.

Mandibles finely longitudinally striate, with numerous piliferous pits. Clypeus and front of head mostly finely irregularly rugose; sculptural intensity decreasing laterally, with sides of head finely reticulate, and increasing dorsally, with occiput more or less rugose. Dorsum and sides of mesosoma reticulate-punctate. Petiole and gaster finely shagreened.

Relatively short, semierect, yellowish to brown hairs abundant on dorsum of head and mesosoma, and diluted elsewhere, particularly on the petiole, which has only a few very short hairs scattered along its lateral edge and on the spines. The hairs are relatively long on the gaster, where they are somewhat posteriorly directed. Very short, golden, appressed pubescence very dilute all over the body, except the gaster, where it is more abundant, with a distinct reddish tint on the dorsal aspect.

Black, with mandibles at the masticatory border and appendages infuscated reddish-brown.

Sexuals and immature stages unknown.

**REMARKS**

*P. inusitata* is closely allied to *P. continua* Emery from Papua New Guinea and shares with that species the curved outline of the mesosomal dorsum, the postocular and lateral ridges of the head and the slender petiole, with dorsum deeply concave between two, relatively long, erect spines. These species differ in the sculpturation of the head and body, which is irregularly reticulate-rugose in *inusitata*, while *continua* has the cephalic and mesosomal sculpturation regularly longitudinally striate. *P. inusitata* is also characterised by

having relatively short hairs abundant over most of the body, while in *continua* these hairs are distinctly longer and much diluted, with only a few breaking the outlines of the head and gaster. *P. inusitata* is markedly more slender than *P. continua*, which is a relatively robust, wider bodied species.

*P. inusitata* is apparently limited to the mid Cape York Peninsula, from the Claudie River basin at Iron Range to the McIlwraith Range (Grid cells 12/143, 13/143). It seems to be very rare and, in spite of intensive collecting within its distribution range, it has been taken only twice.

***Polyrhachis rufofemorata* Fr. Smith, 1859**  
(Figs 3, 3a, 8, 12)

*Polyrhachis rufofemoratus* Fr. Smith, 1859:142. Holotype worker. INDONESIA: Aru I. (A.R. Wallace) OUM (Examined).

*Polyrhachis merops* Fr. Smith, 1860:98. Holotype worker. INDONESIA: Bachian I. (A.R. Wallace) OUM (Examined). Synonymy by Bolton (1974).

DIMENSIONS OF *P. RUFOFEMORATA*

Holotype: TL 8.55; HL 2.18; HW 1.61; CI 74; SL 2.59; SI 161; PW 1.09; MTL 2.90.

ADDITIONAL MATERIAL EXAMINED

INDONESIA: West Irian, Cyclops Mts, Ifar, 300-500m, 23-25 vi 1963, J. Sedlacek. PAPUA NEW GUINEA: West Sepik Prov., Oenake Ra., 10km WNW of Vanimo, 03.40S x 141.12E, 15 Aug 1984, RJK acc. 84.288. Torricelli Mts, Lumi, 400-550m, 03.28 S x 142.02 E, 4-13 Aug 1984, RJK acc. 84.283; October 1984, D. Waisi. Pes Mission, <50m, c. 12km WSW of Aitape, 03.11S x 142.15E, 31 July- 3 August 1984, RJK acc. 84.154, 176. East Sepik Prov., Passam nr Wewak, 5 July 1972, R. W. Taylor. Morobe Prov., Busu Riv., nr Lae, 8 i 1968, B.B. Lowery; Bulolo, 12 xii 1967, B.B. Lowery; nr Wampit, c. 50m, c. 35km W of Lae, 06.45S x 146.40E, 24 & 27 Aug 1984, RJK acc. 84.347, 353, 365, 370, 373. Northern Prov., Popondetta, 14 i 1971, B.B. Lowery; Pongani R., c. 500m, Boikiki Plant., c. 8km NNE Afore, 09.06 S x 148.25 E, 29-30 Aug 1984, RJK acc. 84.386. Owen Stanley Ra., 500m, Mamba Plant., c. 7km WNW of Kokoda, 08.51S x 147.41E, 31 Aug-1 Sept 1984, RJK acc. 84.400, 403. Central Prov., Brown Riv., 22 i 1971, B.B. Lowery. AUSTRALIA: Queensland, Cape York Penins., Bamaga, 10.53S x 142.23E, 18 & 24 March 1987, RJK acc. 87.6. Iron Ra., 12.43S x 143.18E, 26-31 July 1981, RJK acc. 81.140, 191, 198, 211.

WORKER

Dimensions: TL 8.47-9.58; HL 2.27-2.53; HW 1.62-1.84; CI 71-77; SL 2.71-3.02; SI 154-170; PW 1.03-1.31; MTL 3.02-3.48 (35 measured).

Mandibles with 5 teeth. Clypeus sinuate in profile, convex above, concave below; median

carina more or less distinct; anterior margin truncated medially. Sides of head in front of eyes only feebly convex (almost straight in some specimens), slightly converging anteriorly; behind the eyes broadly convex. Eyes convex, in full face view not or only marginally breaking the outline of the head. Median ocellus weakly marked in some specimens. Frontal carinae sinuate with sharply raised lobes. Pronotum with a pair of long, divergent, somewhat flattened spines; their outer borders continuous, with posteriorly diverging lateral margins. Mesonotal dorsum wider than pronotum at the base, transversely convex, lateral margins acute but not laminate. Propodeal dorsum deeply concave between lateral margins, which form almost vertically raised lamellate flanges; posterior angles rounded, not acute. Petiole scale-like, with dorsal edge usually angulate or dentate, but also distinctly spinose, as in some New Guinean and all known Australian populations. Base of first gastral tergite very shallowly concave.

Mandibles finely longitudinally striate, with numerous piliferous pits. Anterior clypeal margin medially with a row of distinct pits from which long hairs arise. Sculpturation of the head and mesosoma consisting of fine to coarse reticulations, with dorsum of the head more or less longitudinally striate. Intensity of the sculpturation decreasing posteriorly, the petiole and gaster finely shagreened.

Short to medium long, semierect, yellow to rusty-brown hairs scattered all over the body. Short appressed pubescence of variable density everywhere, but almost absent from the petiole and the base of the first gastral tergite; colour of the pubescence yellow with distinct reddish tint on dorsum of head, mesosoma and gaster, more silvery on lateral and ventral surfaces of the body and appendages.

Body distinctly bicoloured; black, with the petiole, base of the first gastral tergite, coxae and femora, save for their apical portions, light to medium reddish-brown. Tips of the petiolar spines or denticles also black.

FEMALE

Dimensions: TL 9.42-10.43; HL 2.37-2.59; HW 1.68-1.89; CI 70-75; SL 2.77-3.02; SI 154-168; PW 1.61-1.91; MTL 3.17-3.53 (14 measured).

Female larger, with the usual characters identifying full sexuality. The sculpturation, pubescence and coloration is similar to that of the worker. Eyes convex, usually breaking the outline of the head. Configuration of the petiolar spines

variable, ranging from one to three, more or less acute teeth, situated along the dorsal edge of the segment between the distinct lateral angles (Fig. 3a).

Males and immature stages are present in the ANIC and RJK spirit collections.

#### REMARKS

As indicated above, *P. rufofemorata* occurs in two distinct forms, of which one has the petiole only angulate or dentate, while in the other it is distinctly spinose. This variability is occasionally accompanied by differences in other characters. For example, specimens with angulate petioles tend to be more stoutly built, while a distinctly spinose petiole is generally accompanied by more gracile stature. However, all these characters often integrate and no taxonomically significant variability seems to be present. Females of both forms are very similar and seemingly differ only in the length of the pronotal spines, which are somewhat shorter in females from colonies in which the workers have their petioles angulate.

This species is apparently lignicolous in nesting habits and most colonies were found in the hollow internodes of standing dead bamboo. The known distribution is from the Moluccas and New Guinea to Australia, where *rufofemorata* occurs on Cape York Peninsula from Bamaga south to Iron Range (Grid cells 2/140, 3/141, 3/142, 3/143, 6/146, 8/147, 9/148, 10/142, 12/143).

#### KEY TO AUSTRALIAN ANTS OF THE POLYRHACHIS RELUCENS SPECIES-GROUP BASED ON THE WORKER CASTE

1. Outline of mesosomal dorsum and declivity in side view forming a continuous curve (Fig. 9); antennal scapes relatively long (SI > 180) ..... *P. inusitata*  
Outline of mesosomal dorsum not forming a continuous curve - it consists of a clearly defined dorsum with the declivity more or less abrupt (Figs 10, 11, 12); antennal scapes relatively short (SI < 170) ..... 2
2. Petiolar spines situated relatively close together, rising from the uppermost angles of the leading dorsal edge of the node (Figs 1, 3) ..... 3  
Petiolar spines widely separated, rising from the dorso-lateral angles of the node (Fig. 2) ..... *P. foreli*
3. Propodeal dorsum concave; the lateral margins

forming almost vertically raised lamellate flanges; antennal scapes with numerous short erect hairs (Fig. 8) .....

..... *P. rufofemorata*

Propodeal dorsum more or less flat; the lateral margins distinct, but not lamellate; antennal scapes without erect hairs (Fig. 6)

..... *P. andromache*

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#### LITERATURE CITED

- BOLTON, B. 1974. New synonymy and a new name in the ant genus *Polyrhachis* F. Smith (Hym., Formicidae). *Entomol. Mon. Mag.* 109: 172-180.
- DONISTHORPE, H. 1932. On the identity of Smith's type of Formicidae (Hymenoptera) collected by Alfred Russel Wallace in the Malay Archipelago, with description of two new species. *Ann. Mag. nat. Hist.* 10(10):441-476.
- EMERY, C. 1897. Viaggio do Lamberto Loria nella Papuasias orientales 18. Formiche raccolte nelle Nuova Guinea. *Ann. Mus. civ. Stor. nat. Giacomo Doria* 38: 546-594.
1925. Hymenoptera. Fam. Formicidae. Subfam. Formicinae. In Wytzman *Genera Insect.*, fasc. 183:302 pp, 4 pls, Bruxelles.
- FOREL, A. 1915. Results of Dr. E. Mjöberg's Swedish Scientific Expeditions to Australia 1910-1913. 2. Ameisen. *Ark. Zool.* 9: 1-119, pl. 1-3.
- KOHOUT, R.J. 1988a. A new species of *Polyrhachis*

- (*Polyrhachis*) from Papua New Guinea with a review of the New Guinean and Australian species (Hymenoptera: Formicidae: Formicinae). *Mem. Qd Mus.* 25(2): 417-427, fig. 1-4.
- 1988b. Nomenclatural changes and new Australian records in the ant genus *Polyrhachis* Fr. Smith (Hymenoptera: Formicidae: Formicinae). *Mem. Qd Mus.* 25(2): 429-438, fig. 1-3.
- ROGER, J. 1863. Verzeichniss der Formiciden-Gattungen und Arten. *Berl. ent. Z.* 7(appendix to vol.): 1-65.
- SMITH, F. 1859. Catalogue of hymenopterous insects collected by Mr A.R. Wallace at the islands of Aru and Key. *J. Linn. Soc. Zool.* 3: 132-178.
1860. Catalogue of hymenopterous insects collected by Mr A.R. Wallace in the islands of Bachian, Kaisaa, Amboyna, Gilolo, and at Dory in New Guinea. *J. Linn. Soc. Zool.* 4 Suppl.: 93-143, pl. 1.
- TAYLOR, R.W., 1986. The quadrinominal infrasubspecific names of Australian ants (Hymenoptera: Formicidae). *Gen. Appl. Ent.* 18: 33-37.
1987. A Checklist of the Ants of Australia, New Caledonia and New Zealand (Hym.: Formicidae). *CSIRO Aust. Div. Entomol. Rep.* 41: 1-92.
- TAYLOR, R.W. AND BROWN, D.R., 1985. Hymenoptera: Formicoidea. *Zoological Catalogue of Australia* 2: 1-149, 306-348.