Myrmicine Ants of the Genera *Ochetomyrmex* and *Tranopelta* (Hymenoptera: Formicidae)

by

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ABSTRACT

The species of the myrmicine ant genera *Ochetomyrmex* and *Tranopelta* (Hymenoptera: Formicidae) are revised. Both genera are currently put in the tribe Ochetomyrmecini. Because the tribe is not clearly defined, the genera are treated separately. Both genera are confined to Neotropical Region with the following species: *Ochetomyrmex semipolitus* Mayr (= *Ochetomyrmex mayri* Forel) **new synonymy**: = *Ochetomyrmex subsolitus* sensu Wheeler) **new synonymy**: = *Ochetomyrmex argentinus* (Kusnezov) **new synonymy**: = *Ochetomyrmex bolivianus* (Kusnezov) **new synonymy**, *Ochetomyrmex neopolitus* Fernández sp.n. (= *Ochetomyrmex subsolitus* sensu Kempl), *Tranopelta gilva Mayr (= Monomorium amblyops Emery) **new synonymy**: = *Monomorium heyeri* Forel) **new synonymy**: = *Tranopelta gilva brunnea* Forel; = *Tranopelta heyeri* Forel; = *Tranopelta heyeri colombica* Forel) **new synonymy**: = *Tranopelta gilva albida* Mann; = *Tranopelta amblyops* Emery; *Tranopelta gilva amblyops* Emery) and *Tranopelta subterranea* (Mann) (= *Monomorium (Mitara) subterraneus* Mann).

RESUMEN


INTRODUCTION

The Myrmicinae ant genera *Ochetomyrmex* Mayr and *Tranopelta* Mayr consist of small, monomorphemic or weakly polymorphic species confined to the Neotropical Region. The workers inhabit the litter or soil, their cryptic habits plus minuteness explain why they are rarely seen in

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collections. Only a few females and males are known. More material needs to be collected for these genera to solve some taxonomic problems and to confirm conclusions drawn in this paper, especially females and males associated with workers.

Throughout most of their history both genera have been classified in the tribe Ochetomyrmecini. However, the existence of the tribe is precarious (Bolton, per. com.), so both genera are treated here without tribal assignment, until the status of Ochetomyrmecini and other related taxa will be clarified.

METHODS AND MATERIALS

Measurements were made using a Nikon SMZ 2T stereomicroscope at 80X magnification and a fiber ring lamp. The following abbreviations are used (all measurements in mm):

HL Head length: Maximum length, in full face view, from the apex of the clypeal bidentate plate to middle of vertex
HW Head width: Maximum width in full face view (in males including eyes)
EL Eye length: Maximum diameter of the eye
SL Scape length: Excluding basal condyle, in straight line distance
WL Weber length: As proposed in Kugler (1994)
PL Petiole length: In dorsal view
PPL Postpetiole length
GL Gaster length
TL Total length
CI Cephalic index HW/HL
SI Scape index: SL/HW.

Specimens were borrowed from several institutions and curators as follows:

CWEM W.P. MacKay and Emma E. Mackay Insect Collection, University of Texas, El Paso, Texas.
CEPLAC Centro de Pesquisas do Cacau, Comissão do Plano de Lavoura, Ilhabela, Bahia, Brazil (Jacques Delabie).
IAvH Insect Collection, Instituto Humboldt, Claustro de San Agustín, Villa de Leyva, Colombia.
LCAM Los Angeles County Museum of Natural History, Los Angeles (Roy R. Snelling).
MCZ Museum of Comparative Zoology, Cambridge.
MIZA Instituto de Zoológia Agrícola, Facultad de Agronomía, Universidad Central de Venezuela, Maracay, Venezuela (John E. Lattke).

MZSP Museu de Zoologia, Universidade de São Paulo, Brazil (C.R.F. Brandão).
PSWC P.S. Ward Insect Collection, University of California, Davis.

THE STATUS OF THE TRIBE OCHETOMYRMECINI

Emery (1914, 1921) created the tribe Ochetomyrmecini with the genera *Ochetomyrmex* and *Wasmania* defined by "Una carêne sur la joue, limitant latéralment la fosse antenneaux chez l’ouvrrière et la femelle; antennes de l’ouvrière et de la femelle de 11 articles, celles du mâle de 13". Brown (1953) added the genus *Blepharidatta* Wheeler to the tribe on account of the "closely relation" of *B. brasiliensis* with *Wasmania*, genus that, in turn, Brown put it as sister genus of *Ochetomyrmex* by clypeal configuration. Kusnezov (1957) put *Brownidris* in the tribe Solenopsidini and suggested (Kusnezov 1963:59) that *Ochetomyrmex* and *Wasmania* in Ochetomyrmecini could be either congeneric or closely related. Ettershank (1966) put *Brownidris* and *Tranopelta* in the Megalomyrmex genus group due to antennae with 7 to 12 segments with club, clypeus with median area defined, carinated, anterior tentorial pits about halfway between the antenna sockets and lateral margins of clypeus and the petiole pedunculated. Kempf (1975) transferred *Ochetomyrmex* from Ochetomyrmecini to Solenopsidini (sensu Ettershank) and put the tribal name under synonymy with Solenopsidini, leaving *Wasmania* and *Blepharidatta* without a tribal name "... because it seems that the whole classification, generic and tribal, of the lower Myrmicinae needs urgent overhauling" (Kempf 1975:358). Bolton (1987) in his redefinition of the *Solenopsis* genus group (Solenopsidini), excluded *Ochetomyrmex* and *Tranopelta*, and proposed potential traits to unite both genera. Wheeler & Wheeler (1985) emmended the tribal name. Bolton (1994, 1995) considers *Ochetomyrmex* and *Tranopelta* as sole members of the tribe. In the Bolton’s keys (1994) these two genera key out well.

*Ochetomyrmex* and *Tranopelta* share several characters: 11-segmented antennae with 3-segmented club; broad clypeus; palps 3.2 (4.3 in T. *subterranea*); large and well developed metapleural glands; petiole with ventral carinae bifurcated posteriorly in a Y shape; postpetiole broadly attached to the gaster, with sharp anteroventral process; open marginal cell. However, none of the above characters are synapomorphic for both genera (that is, the tribe Ochetomyrmecini); and any of them may be shared with other myrmicine ants. The ventral carinae of the petiole (Fig. 1B), a potential synapomorphy for both genera, is present...
in other few myrmicine ants, such as *Cephalotes*, *Tetramorium* or
*Adlerzia*.

Although the early classifications put ochetomyrmecines in or near
the solenopsidines (Emery 1921, Ettershank 1966). Bolton (1987)
excludes *Ochetomyrmex* and *Tranopelta* from the Solenopsis group,
mainly because both genera lack the median apical seta that defines
Solenopsidei. Emery (1921) puts Ochetomyrmecini (along with other
tribes) in their "Myrmecinini" (defined loosely by front wing traits now
useless) and Ettershank did not provide any synapomorphy to link the
Megalomymex genus group (then containing *Tranopelta*) with the
other genus group close to *Solenopsis* or *Pheidologeton*. Kugler (1978, 1979)
has studied the sting apparatus of myrmicine ants as potential tool for
disclosing phylogenetic relationships in the subfamily. However, he did
not include *Ochetomyrmex* and put *Tranopelta* as "unplaced" in his
preliminary classifications of the subfamily based on stings.

So, the best decision at present is treating both genera as *incertae
sedis* in Myrmicinae until the classification of Myrmicinae can be
clarified.

Genus *Ochetomyrmex* Mayr

*Ochetomyrmex* Mayr. 1878: 871; Kempf, 1975: 355 (review); Bolton.

(synonymy).

Type species: *Ochetomyrmex semipolitus* Mayr, by monotypy.

Diagnosis: *Worker*. Monomorphic. Mandibles with four to five teeth.
Palpal formula 3.2. Median portion of clypeus gently convex. Antennae
11-segmented with 3-segmented club. Compound eyes well developed,
multifaceted, with angular inferior orbits, situated slightly behind the
mid-length of head. Head without antennal scrobes. Mesosoma with
promesonotum and propodeum separated by the metanotal groove in
lateral view. Propodeum with spines. Propodeal spiracles round, large,
conspicuous. Bulla of metapleural gland large and bulging, with dorsal
margin approaching propodeal spiracle. Petiole with differentiated
peduncle and node. Petiolar spiracle situated at midway between
propodeal lobes and node. Petiole with dentiform ventral process. Petiole
ventrally with median carina that diverges posteriorly. Workers smooth
to finely sculptured, sparsely to moderately hairy.

*Female*. Larger than worker, length around 8 mm. Masticatory border
of mandible with a well-developed apical and subapical tooth only. Basal
tooth inconspicuous. Palpal formula 4.3. Median portion of clypeus
anteriorly subtruncated, with a denticule in each corner. Front wing with
open marginal cell. Petiolar spiracle situated in front of the mid-length
of the peduncle. Postpetiole broadly attached to the gaster. Dorsal
pilosity short and dense.

*Male*. Size: Total length about 7 mm. Mandibles with 3 to 4 teeth.
Clypeus strongly bulging medially. Mandibles subtriangular with four
teeth, apices slightly overlapping when closed. Petiole lacking both
subpetiolar process and a ventrally bifurcated carina.

Distribution: *Ochetomyrmex* is restricted to South America, ranging
in lowland tropical forests east of the Andes and nesting in leaf-litter.

Comments. The following combination of characters, unique among
myrmicine ants, allows the separation of *Ochetomyrmex* from all other
genera: Antennae with 11 segments and a 3-segmented club, mandibles
with 4 to 5 teeth, propodeum with spines, petiole with ventrally
bifurcated carinae and postpetiole with ventrally posterior process.

*Ochetomyrmex* closely resembles *Wasmannia*. During the course of
this revision it was common to encounter specimens of *Ochetomyrmex*
eroneously identified as *Wasmannia* and Wheeler (1916) wrongly
described one ochetomyrmicine with the generic name *Wasmannia*. In
1914, Emery created the Ochetomyrmecini to include both *Ochetomyrmex*
and *Wasmannia*. Kempf (1975) clearly pointed out differences between
these two genera based on the workers and sexual forms. *Wasmannia*
presents a roughly striated promesonotum, inconspicuous metanotal
groove, elongated propodeal spines, inconspicuous bulla of the
metapleural gland and a petiole lacking bifurcated carinae. *Wasmannia*
(along with *Blepharidatta*) is more closely related to Attini than to
Ochetomyrmecini (Schultz & Meier 1995).

**SYNONYMIC LIST OF SPECIES**

*Ochetomyrmex semipolitus* Mayr
  = *Ochetomyrmex mayri* Forel new synonymy.
  = *Wasmannia subpolita* Wheeler new synonymy.
  = *Ochetomyrmex subpolitus* (sensu Wheeler).
  = *Brounidi*rus *argentinus* *Kusnezov* new synonymy.
  = *Ochetomyrmex argentinus* (*Kusnezov*).
  = *Brounidi*rus *bolivianus* *Kusnezov* new synonymy.
  = *Ochetomyrmex bolivianus* (*Kusnezov*).

*Ochetomyrmex neopolitus* new species
  = *Ochetomyrmex subpolitus* sensu Kempf.
KEY TO WORKERS OF THE SPECIES OF OCHETOMYRMEX

1. Frontal carinae stretching posterad as fine rugulae and surpassing the posterior border of eye (Fig. 1A); frons with minute reticulate sculpture; clypeus normally with one or more fine longitudinal rugulae (Fig. 1A) .................................................. O. semipolitus
- Frontal carinae never surpassing posterior margin of eye (Fig. 1D); head smooth and shining, devoid of microsculpture; clypeus normally smooth and shining ........................................ O. neopolitus n. sp.

Ochetomyrmex semipolitus Mayr
(Figs. 1A, 1B, 1C, 1G; Map 1)


Worker measurements: Paratype [LACM] (other workers, N=5): HW 0.45 (0.41 – 0.50) HL 0.53 (0.50 – 0.54) SL 0.34 (0.30 – 0.39) EL 0.13 (0.10 – 0.12) WL 0.50 (0.45 – 0.55) PL 0.18 (0.18 – 0.25) PPL 0.15 (0.10 – 0.14) GL 0.79 (0.56 – 0.57) TL 2.23 (1.85 – 2.14) CI 86 (83 – 93) SI 75 (73 – 78).

Diagnosis of worker: Frontal carinae diverging caudally as longitudinal rugulae, easily surpassing posterior margin of eye and ending near the posterior lateral corner (Fig. 1A). One to three longitudinal carinae on clypeus. Frons with minute, reticulate sculpture.

Worker description. Head in frontal view nearly as broad as long, with convex to nearly straight posterior margin concave in Fig 1A; occipital corner narrowly rounded; sides of head convex, slightly narrower anteriorly. Mandible with strongly convex basal border, masticatory border with four teeth (occasionally five), basal and sub-basal smaller, apical tooth larger than subapical tooth. Median surface of clypeus convex, anterior border convex. Frontal carinae diverging caudally as longitudinal rugulae, easily surpassing posterior border of eye and ending near posterior lateral corner. Compound eyes multifaceted behind the middle of the head’s median line. Scape fails to reach posterior head border by 1.5 times of their apical width. Mesosoma as

Fig. 1 Ochetomyrmex spp. O. semipolitus worker A: Full face view of head; B: petiole ventral view; C: petiole dorsal view; G: Lateral view of mesosoma, petiole and postpetiole. O. neopolitus sp. n. D: Full face view of head; E and F: dorsal view of petiole in different workers; H: full face view of queen; I: full face view of male; J: fore wing of queen; K: microsculpture of worker (scale 50 μm); L: lateral view, worker. All figures (except B, C, E, F and K) redrawn from Kempf (1975).
in Figure 1G. Promesonotum in dorsal view longer than broad. Dorsum of pronotum with feebly carinated anterior border; promesonotal suture dorsally obsolete, laterally impressed. Propodeal dorsal margin nearly flat in side view, with two small teeth, subtriangular to spiniform in shape, much longer than broad. Metapleural lobes prominent and rounded. Propodeal spiracle situated in front of base of propodeal teeth. Bulla of the metasternal gland large and bulging. Petiole with anterior peduncle more or less as long as node, as long as broad or longer than broad. Two carinae in cephalic dorsum, each carina extending from frontal lobe, several concentric carinae situated between inferior orbits of eyes and antennal receptacles, some longitudinal carinae between inferior orbits of eyes and mandibular bases, one to three longitudinal carinae on clypeus. Parts of head, mesosoma, petiole and postpetiole with minute rugulae, pronotal sculpturing sometimes feebly and hard to see. Four to five rows of erect and short setae on head, six to eight erect and short setae over mesosomal dorsum, two on propodeal dorsum, four on petiole, two on postpetiole and several on gaster. Most head setae less than 0.05 mm long. Mesosoma, petiole and postpetiole brown; head, gaster and appendages darker.

Queen and male: Not examined. The female and male of *O. argentinus* (Kusnezov) and the female of *O. bolivianus* (Kusnezov) maybe the sexual forms of this species (see below).


Distribution: Colombia, Guyana, Surinam, Brazil, Bolivia, Argentina (Map 1).
Comments. Judging from the available material and from reading the descriptions of names associated with Ochetomyrmex, several conclusions can be drawn. Only two species of Ochetomyrmex can be clearly separated: O. semipolitus and O. neopolitus new species. O. semipolitus has the following diagnostic characters: carinæ or rugulæ extending posterad from the frontal lobes and surpassing the posterior eye orbits; one or more longitudinal rugulæ on clypeus; fine reticulæ on head and propodeum. O. neopolitus is characterized by: frontal carinæ never surpassing the anterior orbits of eyes; cephalic dorsum smooth and shining, devoid of microsculpture; clypeus normally smooth and shining; propodeum smooth and shining, with no apparent microsculpture.

Kempf (1975), in his redescription of O. subpolitus (= O. neopolitus), points out the petiole's peduncle is as wide as long, but there are specimens of O. neopolitus with peduncles longer than wide or of similar length and width. The peduncle of the syntype of O. majri (=O. semipolitus) is as wide as long, and the peduncle of the paratype of O. semipolitus becomes narrower as it approaches its insertion with the propodeum. The propodeal spine is also variable in shape as in O. subpolitus: they may be low and subtriangular or very high and spiniform. Furthermore, there is a slight variation on the distinctive characters of the head: the cotype of Ochetomyrmex, described by Wheeler (1916) as O. subpolitus (=O. semipolitus), has a clypeus with no carinæ and a smooth pronotum, devoid of microsculpture (typical of O. neopolitus). Nevertheless, these specimens have a distinctive characteristic that classifies them as O. semipolitus: the fine carinæ or rugulæ that surpass the eyes and extend up to the posterior margin of the head. Perhaps the shiny and smooth clypeus induced Wheeler to believe that it was a different species, but besides these specimens, no other worker of O. semipolitus lacks rugulæ in the clypeus. The diagnostic characters that set the two species apart lie on the head, since the features of the rest of the body are of little use when trying to distinguish between species.

Based on the known distribution for Ochetomyrmex, O. semipolitus has a wider distribution than O. neopolitus. O. semipolitus ranges from Guyana to Brazil and northern Argentina. Kempf (1975) suggests that O. argentinus and O. bolivianus may be the sexes of O. semipolitus. o. bolivianus are considered synonyms because I can't recognize more than two species, being O. semipolitus wider in geographical extension. Records of Roraima (Guyana), Surinam and Ecuador, listed by Kempf (1975:362) as O. subpolitus, should not be taken as records for O. semipolitus.

Ochetomyrmex neopolitus new species
(Figs. 1D-F, 1H-L; Map 1)


Worker measurements. Holotype (Paratypes, N=5): HW 0.51 (0.50–0.54) HL 0.64 (0.56 – 0.54) SL 0.50 (0.41 – 0.48) EL 0.15 (0.13 – 0.14) WL 0.70 (0.59 – 0.68) TL 2.63 (2.30 – 2.69) CI 83 (88 – 89) SI 94 (79 – 88).

Diagnosis: Frontal carinæ never surpassing the posterior level of eyes. Dorsum of head smooth and shining. Clypeus normally without rugulæ. Ventral petiolar carinæ as in O. semipolitus.

Worker description. Head as broad as long, with convex sides and feebly convex to convex posterior border with medially impressed vestigial occipital border in full face view. Frontal carinæ somewhat diverging caudally, terminating anterior of level of middle of eyes, but continuing further back by faint rugulæ not reaching beyond the posterior border of orbit of eyes. Scapes nearly touching posterior border. Clypeus never with carinæ or rugulæ. Mandibles with four conspicuous teeth, subbasal smaller.

Four rows of erect setae over frons and vertex, occiput with one transverse row of 6-8 hairs, pronotum with two transverse rows, the first with 4, the second with 2-4 setae, mesonotum with two pairs of setae, basal face of propodeum with a single pair, petiole and postpetirole each with three pairs. Most of head setae are more than 0.06 mm in length. Mesosoma, petiole and postpetirole brown; head, gaster and appendages darker. Body yellowish-brown.

Queen measurements: HW 1.58 HL 1.38 SL 0.80 EL 0.38 WL 2.28 GL 2.5 TL 7.63 CI 114 SI 58.


Distribution: The known distribution for *O. neopolitus* suggest that this species is found in northern South America, from Colombia to Guyana and in the Brazilian Amazon (Map 1).

Comments: Wheeler (1916) described *O. subpolitus* based on three different series of workers collected in Guyana. This author affirms that his description is based on "numerous workers taken at Turkei and Kaiteur (Lutz) and Kauwa Creek, Roraima (Crampton)." From Wheeler's description and from examinations of different material (Turkei and Kaiteur, collected by Lutz), it is clear that Wheeler is describing the workers of *O. semipolitus*. As it was mentioned in the Discussion of this species, the workers from the first two locations have a clypeus lacking carinae, and a smooth pronotum, with no sculpture (partial diagnostic characters of *O. neopolitus*). This is probably why Wheeler thought these workers were an undescribed species. However, all the material studied show these workers belong to *O. semipolitus* (with rugulae extending beyond the eyes), with variation in some other morphological traits.

Kempf (1975) studied material from Guyana, collected by Crampton, and redescribed it as *O. subpolitus*. Kempf was also able to describe a male and a female, thanks to a collection that had the two sexual forms associated with workers from Napo, Ecuador. However, the material described by Kempf is considered a new species, *O. neopolitus*. It seems likely then, that Wheeler did not examine the series from Kauwa Creek, but instead, based his descriptions solely on the material collected by Lutz. Kempf apparently did not compare the material in his hands, collected by Crampton, with other relevant material available in Crampton's collection, such as the syntype of *O. mayri* Forel (= *O. semipolitus*).

**Genus Tranopelta Mayr**

*Tranopelta* Mayr, 1866:512 (worker): Ettershank 1966:107 (generic revision)

Type species: *Tranopelta gilva* Mayr, by monotypy.

**Diagnosis** (modified from Ettershank, 1966:107): Worker. Length between 2 and nearly 6 mm. Slightly polymorphic, with simple continuous allometry leading to large-headed workers. Mandibles with four to five teeth. Canthellus of mandible just meeting the basal margin, trilium distinct and closed. Labrum cleft, distal edge of lobes straight or rounded. Palpal formula 3,2; 4,3 in major workers of *T. subterranea*. Eyes poorly to moderately developed, with 3 to nearly 30 facets. Antennae 11–segmented with 3–segmented club. Head without antennal scrobes. Mesosoma with promesonotum and propodeum continuous in side view, only broken by clearly defined metanotal groove. Propodeum rounded, without spines. Propodeal spiracles round, large, conspicuous. Bulla of metapleural gland bulging, with dorsal margin approaching propodeal spiracle. Propodeal spiracle ovoid to round, partly constricted in the larger workers. Petiole with differentiated peduncle and node. Petiolar spiracle situated midway between propodeal lobes and node. Petiole with dentiform ventral process, sometimes developed as a narrow spine. Posterior end of petiole with sides forming distinct carinae converging in middle of the posteroventral face. Postpetiole with distinct anterior ventral process; more or less broadly attached to gaster. Workers smooth to finely sculptured, sparsely to moderately hairy.

**Queen:** Larger than workers, around 12 mm in length. Antennal club scarcely differentiated. Palpal formula 4,3. Dorsal pilosity short and dense.

**Male:** Size: about 7 mm in length. Mandibles with 3 teeth, touching when closed. Petiole with neither subpetiolar process nor bifurcated carinae in ventral view.
Comments. *Tranopelta* shows a moderate type of polymorphism with "minor" and "major" workers that may differ in some characteristics, mainly in the head. Major worker with palps 4,3 (Ettershank 1966). The available material (types and dry material) was not dissected and therefore confirmation of the information provided by Ettershank (1966) was not possible.

The following combination of characters distinguishes *Tranopelta* from any other ant genera: Antennae with 11 segments and a 3-segmented club, mandibles with 4 to 5 teeth, propodeum lacks teeth or angles, petiole with ventrally bifurcated carinae, postpetiole with anterior ventral process, and moderate polymorphism.

Despite the fact that several species and subspecies are in one way or another associated to *T. gilva*, recognizing more than one species was not possible in this study. The characters postulated by previous studies to distinguish the species or subspecies are subject to variation in the workers as well as in the females. Two species, ranging from Costa Rica to Argentina, are recognized.

SYNONYMIC LIST OF SPECIES

*Tranopelta gilva* Mayr  
= *Monomorium amblyops* Emery **new synonymy**.  
= *Monomorium heyeri* Forel **new synonymy**.  
= *Monomorium (Marti) heyeri* Forel.  
= *Tranopelta gilva brunea* Forel.  
= *Tranopelta heyeri* Forel.  
= *Tranopelta heyeri columbica* Forel **new synonymy**.  
= *Tranopelta gilva albida* Mann  
= *Tranopelta amblyops* Emery  
= *Tranopelta gilva amblyops* Emery

*Tranopelta subterranea* (Mann)  
= *Monomorium (Mitara) subterraneus* Mann

KEYS FOR WORKERS OF SPECIES OF *TRANOPELTA*

1 Workers ........................................... 2  
- Females ........................................... 3  
- Males ............................................. 4

2(1) Promesonotum and propodeum each strongly convex in side view, clearly split by a deep metanotal groove (Fig. 3A); scapes approaching the vertexal border (Fig. 3B,C); Ecuador, Brazil, Bolivia ........................................... *T. subterranea*

3(1) Scape of antennae surpassing the vertexal border (Fig. 3F); eyes < 0.50 mm in length .................................. *T. subterranea*

- Scape of antennae not surpassing the vertexal border (Fig. 2F); eyes > 0.50 mm in length .................................. *T. gilva*

4(1) Eyes closer to posterior clypeal margin than to ocellus (Fig. 3G); mandibles crossing when closed (Fig. 3G) .......... *T. subterranea*  
- Eyes equidistant between ocelli and clypeal margin (Fig. 2G); mandibles never touching (Fig. 2G) .................................. *T. gilva*

*Tranopelta gilva* Mayr  
(Figs. 2A - I; Map 2)


Diagnosis: Propodeum and promesonotum continuous in lateral view, only interrupted by metanotal groove; scape ending before posterior border.

Worker measurements (n=4): HW 0.46 – 1.03 HL 0.50 – 1.20 SL 0.32 – 0.54 EL 0.038 – 0.099 WL 0.53 – 1.20 PL 0.20 – 0.38 PPL 0.15 – 0.28 GL 0.63 – 1.20 TL 2.06 – 4.37 CI 88 – 92 SI 52 - 68

Worker description. Feebly polymorphic. Head as long as broad (in minors) or longer than broad (in majors). Posterior border of head concave; lateral margins of head slightly concave to nearly straight in minors. Mandibles with four stout teeth, the apical and subapical teeth larger in majors, sometimes five teeth in minors. Mandibles smooth and shining with longitudinal striae. Anterior margin of clypeus sinuous, medially concave. Clypeus never carinate; median apical seta absent.
Fig. 2. Tranopelta gilva. A: Worker; B: petiole and postpetiole (worker from Brazil); C, D and E: Heads, "minor" to "major" workers; F: full face view of queen head; G: full face view of male head; H: queen front wing; I: lateral view, petiole and postpetiole of queen.

Map 2. Distribution of species of Tranopelta species. Costa Rican record of *T. gilva* not included.
Frontal lobes short. Antennal scrobes absent. Eyes minute (with 3-4 facets) to moderate (around 12 facets) in size. Scape short, ending distantly from vertexal border, shorter in majors. In side view, promesonotum and propodeum continuous. Promesonotal suture impressed laterally. Metanotal groove clearly impressed in the dorsum. Propodeum gently rounded, without spines. In dorsal view, mesosoma constricted towards metanotal constriction. Propodeal spirelle large, circular to ovoid to elliptical. Bulla of metapleural gland big and bulging. Inferior propodeal plates sometimes connected above the foramen by a faint carinae. Petiole pedunculate, node distinct. Subpetiolar process varies from a faint projection to a conspicuous spine (Figs. 2A, B). Petiole ventrally with a median carinae posteriorly bifurcated as a "Y." Ventral petiolar carinae variable in side view, forming one to two spines or angles, sometimes connected by translucent lamella of various development. Postpetiopole with distinct anteroventral process, posterior process small or absent. Postpetiopole narrowly or broadly attached to the gaster. Gaster sometimes white, translucent and soft. Body smooth and shining with fine sculpture in the sides of the mesosoma and venter of petiole and postpetiopole. Short pilosity of whitish color, erect and sparse on the body dorsum. Body light brown to yellowish, sometimes partially to completely white.

Queen measurements (n=1): HW 1.70 HL 1.50 SL 0.90 EL 0.57 WL 3.45 PL 0.80 PPL 0.70 GL 4.5 AA 11.75 TL 11.41 CI 113 SI 53

Head broader than longer. Posterior margin of head in frontal view convex, sides convex; eyes at midpoint of head. Scapes short, ending at about 2/3 of the head length from posterior margin. Mandibles with five to six teeth, apical tooth largest. Mandibles slightly to well striated. Mesosoma modified as in myrmicine queens. Promesonotum dorsally with impressed longitudinal central line and two short lateral lines. Front wing as in Figure 2H. Propodeal spiracles large, varying from circular to ovoid, sometimes medially constricted. Subpetiolar process variable: anterior spine absent, short or well developed; median carinae feebly impressed to well developed. Postpetiopole broadly attached to gaster (Fig. 2I). Body with fine and densely punctate all over. Pubescence all over the body, especially on head and gaster. Pilosity erect and sparse, yellow brown in color.

Male measurements (n=1): HW (including eyes) 1.22 HL 1.00 SL 0.33 EL 0.55 WL 2.25 PL 0.48 PPL 0.50 GL 1.5 TL 5.9 CI 123 SI 27

Head approximately as broad as long. Mandibles short, not touching when closed. Mandibles with 3 teeth, apical tooth bigger and separated from other two. Clypeus medially concave. Front wing as in Figure 2H. Propodeal spiracle circular. Sculpture and pubescence as in female. Long and curved hair on ocellar triangle and clypeus.

Table 1. Comparison of different attributes in a sample of workers and females of *T. gilva* from several localities. First column: Geographical location of the sample. Second: variation in head width (HW), head length (HL), and cephalic index (CI). Third: number of eye facets. Fourth: Number of mandibular teeth and type of mandibular striation. Fifth: Configuration of the subpetiolar process: development of spine and carinae. Sixth: Taxonomic name as shown on the label of the specimen (when written).

<table>
<thead>
<tr>
<th>Locality</th>
<th>Head measurements</th>
<th>No. Eye facets</th>
<th>No. of mandibular teeth / mandibular striation</th>
<th>Subpetiolar process</th>
<th>Taxonomic name as shown on the label</th>
</tr>
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<tbody>
<tr>
<td>Pará, Brazil</td>
<td>HW 063 HL 059 CI 113</td>
<td>5</td>
<td>4 / present</td>
<td>Two spines present and connected by lamella</td>
<td><em>Tranopelta gilva var. albida</em> (?) MZSP</td>
</tr>
<tr>
<td>Pará, Brazil</td>
<td>HW 050 HL 056 CI 89</td>
<td>4</td>
<td>4 / feeble</td>
<td>As above</td>
<td><em>Tranopelta gilva var. albida</em> (?) MZSP</td>
</tr>
<tr>
<td>Napo, Ecuador</td>
<td>HW 079 HL 083 CI 95</td>
<td>8</td>
<td>4 / feeble</td>
<td>Posterior spine more developed</td>
<td><em>Tranopelta heyeri</em> var. columnica MZSP</td>
</tr>
<tr>
<td>Rio de Janeiro, Brazil</td>
<td>HW 1.042 HL 1.14 CI 91</td>
<td>5</td>
<td>4 / absent</td>
<td>Small spine developed anteriorly</td>
<td><em>T. amblyops</em> MZSP</td>
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<tr>
<td>Idem</td>
<td>HW 1.002 HL 1.12 CI 89</td>
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<td>4 / absent?</td>
<td>Idem</td>
<td>Idem MZSP</td>
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<tr>
<td>Bahia, Brazil</td>
<td>HW 046 HL 059 CI 79</td>
<td>4</td>
<td>5-6 / present</td>
<td>Idem</td>
<td>No name MZSP</td>
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<tr>
<td>Belem, Brazil</td>
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<td>4</td>
<td>4 / present</td>
<td>Two spines present and connected by lamella</td>
<td>No name MZSP</td>
</tr>
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Table 1 (cont.). Comparison of different attributes in a sample of workers and females of *T. gigata* from several localities. First column: Geographical location of the sample. Second: variation in head width (HW), head length (HL), and cephalic index (CI). Third: number of eye facets. Four: Number of mandibular teeth and type of mandibular striation. Five: Configuration of the subpetiolar process: development of spine and carinae. Six: Taxonomic name as shown on the label of the specimen (when written).

<table>
<thead>
<tr>
<th>Locality</th>
<th>Head measurements</th>
<th>No. Eye facets</th>
<th>No. of mandibular teeth / mandibular striation</th>
<th>Subpetiolar process</th>
<th>Taxonomic name as shown on the label</th>
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<td>WORKERS</td>
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<tr>
<td>Idem</td>
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<tr>
<td></td>
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<td></td>
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<td>Bahia, Brazil</td>
<td>HW 069</td>
<td>7</td>
<td>4 / moderate and strongly impressed</td>
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<td>No name MZSP</td>
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<td></td>
<td>HL 078</td>
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<td></td>
<td>Ci 89</td>
<td></td>
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<tr>
<td>Porto Alegre,</td>
<td>HW 096</td>
<td>12</td>
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<td>Without spines</td>
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<td>HL 1.06</td>
<td></td>
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<td>Ci 91</td>
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<tr>
<td>Surinam, Guyana</td>
<td>HW 073</td>
<td>9</td>
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<td>T. heyeri MZSP</td>
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<td></td>
<td>HL 081</td>
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<td></td>
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<td>Campo Grande,</td>
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<td>4 / moderate</td>
<td>One spine developed anteriorly</td>
<td>T. heyeri MZSP</td>
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<tr>
<td>Brazil</td>
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<td>Quindío, Colombia</td>
<td>HW 055</td>
<td>6</td>
<td>5 / densely striated</td>
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<td>No name IAvH</td>
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<td></td>
<td>HL 055</td>
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<tr>
<td>Idem</td>
<td>HW 053</td>
<td>5</td>
<td>4-5 / present</td>
<td>One spine developed anteriorly</td>
<td>No name IAvH</td>
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<td></td>
<td>HL 053</td>
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<td>Nariño, Colombia</td>
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<td></td>
<td>Ci 94</td>
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Table 1 (cont.). Comparison of different attributes in a sample of workers and females of *T. gigata* from several localities. First column: Geographical location of the sample. Second: variation in head width (HW), head length (HL), and cephalic index (CI). Third: number of eye facets. Four: Number of mandibular teeth and type of mandibular striation. Five: Configuration of the subpetiolar process: development of spine and carinae. Six: Taxonomic name as shown on the label of the specimen (when written).

<table>
<thead>
<tr>
<th>Locality</th>
<th>Head measurements</th>
<th>No. Eye facets</th>
<th>No. of mandibular teeth / mandibular striation</th>
<th>Subpetiolar process</th>
<th>Taxonomic name as shown on the label</th>
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<td>WORKERS</td>
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<td>Paraná, Paraguay</td>
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<td>HL 083</td>
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<tr>
<td>Kartabo, Guyana</td>
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<td>13</td>
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<td>No name LACM</td>
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<td></td>
<td>HL 078</td>
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<td></td>
<td>Ci 90</td>
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QUEENS

<table>
<thead>
<tr>
<th>Locality</th>
<th>Head width</th>
<th>No. teeth</th>
<th>Propodeal spiracle</th>
<th>Subpetiolar process</th>
<th>Name / Museum</th>
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</thead>
<tbody>
<tr>
<td>Kalacoon,</td>
<td>HW 1.63</td>
<td>6</td>
<td>Circular</td>
<td>With spine developed</td>
<td><em>T. gigata</em> / LACM</td>
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<tr>
<td>Guyana Brit.</td>
<td></td>
<td></td>
<td></td>
<td>anteriorly, connected</td>
<td></td>
</tr>
<tr>
<td>Costa Golfito,</td>
<td>HW 1.98</td>
<td>5-6</td>
<td>Ellipsoid</td>
<td>With spine developed</td>
<td><em>T. gigata</em> / LACM</td>
</tr>
<tr>
<td>Costa Rica</td>
<td></td>
<td></td>
<td></td>
<td>anteriorly</td>
<td></td>
</tr>
<tr>
<td>Idem</td>
<td>HW 1.93</td>
<td>5</td>
<td>Ovoid</td>
<td>With spine developed</td>
<td>No name / LACM</td>
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<tr>
<td>Rio Claro, Brazil</td>
<td>HW 2.08</td>
<td>5</td>
<td>Ellipsoid</td>
<td>Spine reduced, feebly</td>
<td>No name / LACM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>carinated</td>
<td></td>
</tr>
<tr>
<td>Campinas, Brazil</td>
<td>HW 2.03</td>
<td>7</td>
<td>Ellipsoid with medial</td>
<td>Spine absent, carinae</td>
<td><em>T. amblyops</em> / MZSP</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>constriction</td>
<td>moderately impressed</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spine reduced</td>
<td></td>
</tr>
<tr>
<td>Utiariti, Brazil</td>
<td>HW 2.35</td>
<td>7</td>
<td>Ellipsoid with medial</td>
<td></td>
<td><em>T. gigata</em> / MZSP</td>
</tr>
</tbody>
</table>
as justification for naming new species or new subspecies. The present study revealed no morphological characters that could separate any of the synonymized names into discrete entities; perhaps the use of molecular characters could shed more light on this situation.

Tranopelta subterranea
Mann
(Figs. 3A - 1; Map 2)

Mononomorium (Mutara) subterraneum Mann, 1916:444 (worker); Tranopelta subterranea: Emery, 1919:61 (combination in Tranopelta and junior synonym of Crematogaster huberi); Emery 1922:193 (revived from synonymy).

Worker measurements:
Lectotype [here designated] (other material N=3): HW 0.92 (0.71 - 1.33) HL 0.99 (1.00 - 1.34) DA 0.42 (0.43 - 0.50) SL 0.92 (0.92 - 1.09) EL 0.10 (0.10 - 0.13) WL 1.17 (1.34 - 1.54) PL 0.42 (0.45 - 0.50) PPL 0.29 (0.28 - 0.38) GL 1.30 (1.29 - 1.64) TL 4.38 (4.59 - 5.64) CI 93 (71 - 100) SI 100 (81 - 129).

Diagnosis: Propodeum and promesonotum clearly convex in lateral view, separated by a broad metanotal groove. Scapes approaching or surpassing the vertexal border.

Worker description. Feebly polymorphic. Head as long as broad (minors) to broader than long (majors). Posterior border of head slightly convex or flat (minors) to concave (majors). Lateral sides of head slightly concave and parallel (minors) to concave and narrower anteriorly (majors). Mandibles with five stout teeth, the apical and subapical teeth larger in majors. Mandibles smooth and shining with several longitudinal carinae, feebly impressed. Anterior margin of clypeus sinuous, concave in the middle. Clypeus never carinate, without median apical seta. Frontal lobes short. Antennal scrobes absent. Eyes minute (with 3-4 facets) to moderate (around 12 facets) in size. Scape ending near or surpassing slightly the head border. In side view, promesonotum forms a convexity clearly separated from the propodeum, which is also concave. Metanotal groove deep. Pronotal suture impressed dorsally and broad laterally. Propodeum gently rounded, without spines. Bulla of metapleural gland bulging. Petiole pedunculated, node distinct. Subpetiolar process varies from a faint projection to a conspicuous spine. Petiole ventrally with a median carina posteriorly bifurcated in Y shape. Postpetiole with distinct anterior process, and a second transverse carinae. Postpetiole more or less broadly attached to gaster. Head with feebly short striae on posterior part (towards vertex) and clypeus. Dorsum of pronotum with microwrinkle. Dorsum of mesonotum with scattered and irregular transverse striae. Dorsal and posterior declivitous face of propodeum with transverse striae extending onto sides. Peduncle of petiole and postpetiole with dense microsculpture, less marked on petiolar node. First tergum smooth and shining. Moderate pilosity on dorsum (except propodeum), consisting of erect hairs, larger on promesonotum. Color brownish yellow, with same hair color. Antennal club with denser pubescence than other segments.

Queen measurements (n=1): HW 1.95 HL 1.65 SL 1.25 EL 0.43 WL 3.55 PL 0.95 PPL 0.50 GL 3.9 TL AA 10.5 11.10 CI 118 SI 64.

Queen (undescribed). Head broader than long in frontal view, posterior margin straight, occipital corner narrow, sides slightly convex, subparallel. Eyes in middle of head. Scapes surpassing vertexal margin. Mandibles with six stout teeth, the apical tooth largest. Mesosoma modified as in myrmicine queens. Promesonotum dorsally with impressed longitudinal central line and two short lateral lines. Front wing as in Figure 31. Petiole ventrally with one central carinae and several short and irregular carinae toward posterior border of petiole (Fig. 3D).

Postpetiole broadly attached to gaster.

Head, mesosoma, petiole, and postpetiole with dense microsculpture (isodiametrically granulose). Dorsum of gaster with fine and dense punctuation. Body and wings with dense pubescence. Short and erect
pilosity over body, except propodeum. Head, promesonotum and gaster dark brown, otherwise rest of body lighter.

Male measurements (n=1): HW (including eyes) 1.28 HL 0.95 EL 0.53 SL 0.38 WL 2.35 PL 0.60 PPL 0.50 GL 2.4 TL 6.95 CI 135 SI 30.

Male (undescribed). Head approximately as broad as long. Mandibles narrow, touching when closed and with 3 teeth, the apical tooth largest and separated from the other two (Fig. 3H). Clypeus nearly straight in the middle. Eyes closer to posterior clypeal margin than to occellar area. Front wing as in Figure 3l. Ventral surface of petiolo devoid of central carina, instead several longitudinal, very short carinae (Fig. 3E). Sculpture and pubescence as in the female, hair longer.


Distribution. Ecuador, Bolivia, Brazil (Map 2).

Comments. From the LACM collection, there are 3 workers with the following labels: "Rio Madeira Mamoré Brazil Mann & Baker / Madeira Mamoré R.R. Co. Camp 39 / Type 35 9081 / Tranopetta subterranea Mann" A Lectotype and two paralectotypes were designated. From the same collection, there are two workers with the following labels: "Rio Madeira Mamoré R.R. Co. Camp 39 / Cotypes / Collection of W.S. Creighton purchased by LACM 1974 / Tranopetta subterranea Mann". Both workers were designated as paralectotypes and deposited in IAvH and USNM. This species comprises the largest workers of the tribe. The shape of the mesosoma easily distinguishes it from T. gilva. In the key, other characteristics are provided to further distinguish males and females of both species. The male and female are described for the first time. Apparently, these ants are subsoil inhabitants.

ACKNOWLEDGEMENTS

Special thanks to Dr. Carlos R. F. Brandão (MZSP) and Roy R. Snelling (LACM) for the loan of important material under their care. Also thanks to Fabiana Cuezzo (Universidad de Tucumán) and Charles Delabie (CIPLAC). Partial support came from the NSF grant DEB No. 9972024 to Dr. Michael Sharkey (University of Kentucky) and Brian Brown.
REFERENCES


