DACETINE ANTS OF PANAMA: NEW RECORDS AND DESCRIPTION OF A NEW SPECIES (HYMENOPTERA: FORMICIDAE: MYRMICINAE: DACETINI)

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Abstract.—Pyramica and Strumigenys are the most speciose dacetine (Formicidae: Myrmicinae: Dacetini) genera in the world. A new ant species in the Pyramica aberti group is described from leaf-litter surveys conducted in the Canal Zone, Panama. Pyramica panamensis, new species, is similar to P. fridericimuelleri, P. nigrescens, and P. parsauga, but differs from those species in having strongly reduced eyes and a distinct promesonotal carina. A couplet is added to Bolton’s (2000) key to Pyramica in order to accommodate the new species. New Central American records for two species in the dacetine genera Pyramica and one in Strumigenys are reported, and a checklist of the known Panamanian dacetine species is presented.

Resumen.—Los géneros Pyramica y Strumigenys contienen el mayor número de especies dentro de los dacetinos (Formicidae: Myrmicinae: Dacetini) en el mundo. Se describe una nueva especie dentro del grupo aberti, coleccionada en hojarasca en la zona del Canal de Panamá, Panamá. Pyramica panamensis sp nov. es similar a las especies P. fridericimuelleri, P. nigrescens, y P. parsauga, pero se diferencia de estas en la presencia de ojos fuertemente reducidos y una carena promesonotal distintiva. Adiciones a la clave taxonómica para la identificación de las especies del género Pyramica para el Neotrópico (Bolton 2000) fueron necesarias para incluir P. panamensis. Dos especies en el género Pyramica y una en el género Strumigenys son reportados como nuevos registros para América Central, y se presenta una lista de las especies conocidas dentro de la tribu para Panamá.

Key Words: Central America, leaf litter, Pyramica panamensis, systematics, taxonomy

Ants (Hymenoptera: Formicidae) are one of the most ecologically important groups of insects due to their relative abundance in terrestrial ecosystems, especially in the tropics. Leaf-litter ants in particular are increasingly employed in biodiversity surveys (Agosti et al. 2000). Ants of the tribe Dacetini, worldwide in distribution and generally predaceous, are commonly encountered in such
surveys. The tribe includes ants that are morphologically distinct (e.g., antennal segment numbers are reduced, mandibles are elongate and traplike; hairs, especially on the head, are scalelike; and spongiiform lobes occur on the petiolar and postpetiolar segments). A recent revision of the tribe (Bolton 2000) permits the accurate identification of known species and, consequently, the recognition of species hitherto unknown to science. Intensive ecological work in Panama on ants, including dacetine ants (Kaspari and Weisner 2000, Kaspari et al. 2001), requires that Panamanian dacetine ant taxonomy remain current.

Of the nine dacetine genera, Pyramica Roger and Strumigenys Fr. Smith are the most speciose, Pyramica being more speciose than Strumigenys in the Neotropics (Bolton 2000), and the only ones with worldwide distributions. Both genera occur throughout the Americas, but are more abundant in the Neotropics (Brown 1962, Bolton 2000), where their mostly cryptic species are typically encountered inhabiting leaf litter, rotten wood, or soil (Brown 1953, Dejean 1991). Entomobryid and isomitid collombolans appear to be the main prey items of Pyramica and Strumigenys, but some species also feed on mites, termites, and ant larvae (Wilson 1954, Bolton 2000).

The New World tropics contain 85 described species of Strumigenys and 100 species of Pyramica. Here we present new species records for Central America and describe a new species, P. panamensis, within the P. alberti (Forel) species group. The P. alberti species group is broadly distributed in the Neotropical Region and frequently collected. Pyramica panamensis appears to be closely related to P. fridericomulleri (Forel), P. nigrescens (Wheeler), and P. parsanga Bolton. A list of dacetine ants from Panama is presented, along with a modification of Bolton’s (2000) key to accommodate P. panamensis.

**Materials and Methods**

Measurements and terminology follow Bolton (2000). Specimens examined were borrowed from or have been deposited in the following collections:

- **JTLC** J. T. Longino Collection, Evergreen State College, Olympia, Washington, U.S.A.
- **MZSP** Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil.
- **USNM** National Museum of Natural History, Smithsonian Institution, Washington, DC, U.S.A.

The holotype of P. panamensis was examined and measured using a Leica MZ125 stereomicroscope and photographed using a ProgRes 3012 digital camera (Jenoptik) attached to Leica MZ16 stereomicroscope. Specimens of P. cincinnata (Kempf), P. denticulata (Mayr), P. fridericomulleri, P. nigrescens, and Strumigenys perparva Brown were photographed using a JVC KY-F70B video camera mounted on a Leica M420 microscope. All images were prepared using Auto-Montage Version 3.04 software (Synoptics Ltd.) and Photoshop® (Adobe Inc.).

**Taxonomic Treatment**

**Genus Pyramica Roger 1862**

*Pyramica cincinnata* (Kempf 1975)  
(Figs. 1–2)

This is the first record for this species for Central America. *Pyramica cincinnata* has been recorded previously only from Brazil (Bolton 2000). The Panamanian specimens are slightly larger than the ones examined by Bolton (2000).
Figs. 1–6. Frontal and lateral views. 1–2, Pyramica cincinnata. 3–4, P. denticulata. 5–6, Strumigenys perparva.

Measurements (measurements in parentheses from Bolton [2000]): TL 1.85–1.89 (1.6–1.8), HL 0.47 (0.46–0.48), HW 0.34 (0.30–0.32), CI 72 (65–68), ML 0.08–0.09 (0.07–0.08), MI 17–20 (15–18), SL 0.24 (0.20–0.22), SI 68 (67–69), PW 0.20 (0.19–0.21), AL 0.52–0.53 (0.43–0.47).
Material examined.—2 workers, labeled “PANAMA, Panama Prov.: Gamboa, Pipeline Road nr. Rio Frijolito; 09°09′00″N 79 43′56″W, 18 viii 2003; litter sample; J. Sosa-Calvo,” “USNM No. 00445071, 00445072.” PARATYPES: 2 workers, labeled “BRAZIL, Amazonas: Ponta Negra, N. of Manaus; Sept. 1962; W. L. Brown.” Deposited in the MZSP.

Pyramica denticulata (Mayr 1887)  
(Figs. 3–4)

This is the first record for this species for Central America. Pyramica denticulata has been recorded previously from Trinidad, Suriname, Guyana, French Guiana, Brazil, Bolivia, Paraguay, Venezuela, Colombia, Ecuador, and Argentina (Bolton 2000, Lattke and Goitia 1997).

Material examined.—2 workers and 1 gyne, labeled “PANAMA, Panama Prov.: Gamboa, Pipeline Road between Rios Frijoles and La Seda; 72 m, 6 vi 2002 to 8 vi 2002; litter sample; C.J. Marshall,” “USNM No. 00411461, 00411459, 00411798.” 1 gyne, labeled “BRAZIL, Sao Paulo: Agudos, 4 iii 1953; berlese: W. Kempf.” 3 workers, labeled “BRAZIL, Sao Paulo: Agudos, 6 iii 1955; C. Gilbert.” 3 workers, labeled “SURINAME. (no locality), 15 vii 42: Geijkses (coll).”

Pyramica panamensis Sosa-Calvo, Shattuck, and Schultz, new species  
(Figs. 11–12, 15)

Diagnosis.—Pyramica panamensis is a member of the P. alberti species group and is most similar to P. fridericimuelleri (Figs. 7–8, 13), P. nigrescens (Figs. 9–10, 14), and P. parsanga. Pyramica panamensis can be distinguished from these species by the presence of small eyes and promesonotum with a complete median longitudinal carina.

Description.—Holotype worker: TL 1.8, HL 0.50, HW 0.35, CI 70, ML 0.11, MI 22, SL 0.28, SI 80, PW 0.23, AL 0.48. Possessing characters of alberti complex. Masticatory margin of mandibles with a series of acutely triangular apical teeth (mandibles closed in holotype and basal region not visible). Anterior clypeal margin broadly and very shallowly convex between points where outer margins of closed mandibles intersect clypeal margin. Apicosceral hair flagellated, long, and fine. Eye very small, with only 2 ommatidia in longest row and only 4 in total. Promesonotum with a well-developed median longitudinal carina that extends through the entire length of pronotum and most of mesonotum. Pronotum dorsally entirely sculptured with fine punctuation. Petiolar node in dorsal view slightly broader than long, with sides slightly converging anteriorly. Lateral spongiform lobes of node extending forward almost to anterolateral angles.

Gyne and male: Unknown

Type material.—Holotype worker, labeled “PANAMA: Panama Prov.: Gamboa, Pipeline Road between Rios Frijoles and La Seda; 72 m, 6 vi 2002 to 8 vi 2002; litter sample; C. J. Marshall.” “USNM, No. 00410482.”

Distribution and natural history.—Pyramica panamensis is known only from its type locality, Soberania National Park in Gamboa, Panama Province. This species was collected from leaf-litter samples taken in a successional rain forest containing P. cinctumata, P. denticulata, and S. perparva. None of the species closely related to P. panamensis (P. fridericimuelleri, P. nigrescens, and P. parsanga) are known from this particular lowland rain forest (Bolton 2000), although P. fridericimuelleri, the species apparently most closely related to P. panamensis and one of two species (the other P. alberti) within the P. alberti species group that occur in Panama, is

found in the Chiriqui Mountains and Costa Rica. The other two species in the *P. alberti* group, however, are found in the northern part of Central America (*P. nigrescens*) or reported exclusively from Costa Rica (*P. parsauga*). The natural history of *P. panamensis* remains unknown.
Pyramica panamensis shares with *P. parsauga* the reduced eyes (about 4 facets in total), but can be distinguished by promesonotal dorsum bearing a median longitudinal carina and dorsum of propodeum reticulate (smooth in *P. parsauga*). With *P. fridericimuelleri* and *P. nigrescens*, *P. panamensis* shares the fine median longitudinal carina on the promesonotal dorsum, the anterior clypeal margin, which in full face view is shallowly convex between the points where outer margins of the fully closed mandibules intersect the clypeal margin, and the sculpture on the dorsum of the mesosoma (most similar to *P. nigrescens*). *Pyramica panamensis* can be separated from *P. fridericimuelleri* and *P. nigrescens* by the compound eye composed of 4 facets (approximately 10 facets in *fridericimuelleri* and *nigrescens*), and the disc of the petiolar node slightly broader than long and with the sides only slightly converging anteriorly (intermediate between *fridericimuelleri* and *nigrescens*).

**Genus Strumigenys F. Smith 1860**

*Strumigenys perparva* Brown 1958  
(Figs. 5–6)

This is the first record for this species for Central America. *Strumigenys perparva* has been recorded previously from Trinidad, Venezuela, Colombia, Bolivia, Guyana, Suriname, and Peru (Bolton 2000).

**Material examined.**—4 workers and 1 gyne, labeled “PANAMA. Bocas del Toro: Km 26 rd. to Chiriqui Grande; 09°01’34.92”N 82°18’20.04”W; 2 vi 2002 to 4 vi 2002; litter sample; C.J. Marshall,” “USNM No. 00410903, 00410910.” 1 gyne, labeled “Panama Prov.: Gamboa, Pipeline Road between Rios Frijoles and La Seda; 72 m, 6 vi 2002 to 8 vi 2002; litter sample; C.J. Marshall,” “USNM No. 00445073.”  
**PARATYPE.** 1 worker, labeled “BRA-
ZIL. Sao Paulo: Agudos; 6 iii 1955; C. Gilbert.” 2 workers, labeled “SURI-
NAME, Tambahredjo; vi 1959; I. v. d. Drift.”

Modification of Bolton’s (2000) Key to Neotropical Pyrmina species

Here we add two couplets (number 48a and 48b) to Bolton’s (2000, p. 137)
key in order to accommodate P. panamensis.

47. Basal lamella of mandible followed distally by a long edentate second lamella
that extends forward about half exposed length of fully closed mandible, lamellae separated
only by a minute cleft; mandibles relatively long, MI 27–33 ................. 48a
   – Basal lamella of mandible immediately followed distally by tooth row, without
a second lamella that extends forward for half exposed length of fully closed mandi-
ble; mandibles shorter, MI 19–24 ................. 48b

48a. Eye small, with only 4 ommatidia in total .............................................. 49
   – Eye larger, with 10 or more ommatidia in total ........................................ 49

48b. Promesonotal dorsum without a median longitudinal carina. Pronotal dorsum
entirely smooth and shining. Propodeal dorsum smooth and shining ........... 48a
   – Promesonotal dorsum with a median lon-
gitudinal carina. Pronotal and propodeal
dorsum entirely sculptured with fine punc-
tation .......................................................... 49

49. Basal tooth row of mandible consisting only of narrowly triangular high acutely
sharp teeth. Disc of petiolar node in dorsal view as long as broad and with the sides of node
converging anteriorly ............... 48b
   – Basal tooth row of mandible consisting of alternating high narrow acutely triangular
teeth and lower bluntly rounded broader teeth; tooth 4 from base particularly broad
and rounded. Disc of petiolar node in dorsal
view much broader than long, roughly transversely rectangular, sides not conver-
ging anteriorly ......................... 49

Checklist of Dacetini of Panama (modified from Bolton 2000)

Genus Acanthognathus Mayr 1887

A. brevicornis M. R. Smith 1944
A. ocellatus Mayr 1887

Genus Pyrmina Roger 1862

P. alberti (Forel 1893)
P. brevicornis (Mann 1922)
P. cincinnata (Kempf 1975)#
P. crenamenta Bolton 2000
P. denticulata (Mayr 1887)#
P. depressiceps (Weber 1934)
P. fridericimulleri (Forel 1886)
P. gundlachi Roger 1862
P. lalassa Bolton 2000
P. margaritae (Forel 1893)
P. metopia (Brown 1959)
P. myllorhapha (Brown 1959)
P. panamensis new species#
P. probatrix (Brown 1964)
P. schulzi (Emery 1894)
P. subedentata (Mayr 1887)
P. trieaces (Brown 1960)
P. wheeleri (Smith 1944)
P. zeteki (Brown 1959)

Genus Strumigenys F. Smith 1860

S. biolleyi Forel 1908
S. cordovensis Mayr 1887
S. deltsquama Brown 1957
S. dolichognatha Weber 1934*
S. elongata Roger 1863
S. emmae (Emery 1890)
S. extirpa Bolton 2000
S. fairchildi Brown 1961
S. godmani Forel 1899
S. humata Lattke & Gotitá 1997
S. lacacoca Brown 1959
S. lanuginosa Wheeler 1905
S. longispinosa Brown 1958
S. louisianae Roger 1863
S. ludia Mann 1922*
S. marginiventris Sanstchi 1931
S. perparva Brown 1958#
S. planeti Brown 1953*
S. preeva Brown 1954
S. rogeri Emery 1890
S. smithii Forel 1886
S. tococae W. M. Wheeler & Bequaert 1929*
S. trinidadensis Wheeler 1922

* From Kaspari’s ants of the Barro Colorado Island Monument (BCIM),

# New record for Panama

Unmarked (with either * or #) indicates recorded in Bolton (2000)

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LITERATURE CITED


