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Revisionary & Other Studies on the Ant Genus *Ectatomma*, Including the Descriptions of Two New Species

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Abstract*

The 12 species of the neotropical ponerine ant genus *Ectatomma* are keyed on the basis of the worker caste; their distributions and other natural history are revised where necessary on the basis of fresh information. The types of *E. confine* are recognized as representing a close relative of *E. ruidum*, and possibly only an extreme variant of the latter species. *E. gibbum* (Central America) and *E. goninion* (western Ecuador and western Colombia) are described as new species. *E. aztecum* (southern Mexico) is synonymized with *E. ruidum*; *E. morgani* (Amazonia) and *E. macdonaghi* (northern Argentina) are synonymized with *E. edentatum*.

Introduction

The ants of the genus *Ectatomma* are moderately large hunting species (subfamily Ponerinae, tribe Ectatommini) endemic to the American tropics. They occur in various warm habitats and are often abundant and conspicuous, so that they figure increasingly in ecological studies. As far as we know from fragmentary natural history accounts, the species appear to be generalized predators of a variety of small arthropods and earthworms, and they also collect honeydew from membracids and other Homoptera, and nectar and other juices from plant sources (Weber 1946). One species, *E. tuberculatum*, discussed under the Indian name "kelep," figured in an old controversy about its potential efficacy as a natural control of cotton pests. The possibility of employing this or other species against certain agriculturally important target insects continues to interest ecologists and economic entomologists to this day.

Ectatomma was first segregated in its present sense and summarily revised by Brown (1958) with a key to species. At that time, Brown indicated "a number of problems that can be settled only when more material from critical areas reaches the proper collections." Kempf (1962, 1975) discussed and resolved a few points at issue, but the identity of *E. confine* and two or three other species remained in doubt.

Because of the accumulation of material since 1958, most of the outstanding doubts can now be laid. The types of *E. confine* have been studied, and the Central American species to which this name had been applied with a query in 1958 is now recognized as a different, new species, *E. gibbum*, formally described in this publication. Another new species, *E. goninion*, is described from trans-Andean Colombia and Ecuador. Taxonomic, ecological, and distributional notes on some of the older forms also help to clear away some confusion, and we are able to offer a new, improved key to the 12 species now recognized.

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Methods and Materials

Measurements and ratios

TL (total length): sum of the separate axial lengths of head plus mandibles, trunk, petiole, postpetiole, and remainder of gaster, or $ML + HL + WL + \text{petiole L} + \text{postpetiole L} + \text{L rest of gaster}$.

HL (head length): dorsal-view distance from nuchal carina to anteriormost edge of clypeus. The maximum length is obtained first, and then the head is rotated slightly back so as to bring the mandibles up to a fuller dorsal view, so that HL is actually about .01 mm less than the maximum in the cases of *confine* and *gibbum*, but about .02 mm less in the larger *E. goninion*.

HW (head width): maximum distance across head in dorsal view, excluding eyes, in *Ectatomma* measured just behind the anterior angles.

ML (mandible length): from apex of clypeus to tip of the most advanced closed mandible, with position as for HL.

Eye L (eye length): maximum length of eye viewed straight on, along its main perpendicular axis.

SL (scape length): excluding radicle.

WL (length of trunk): measured from base of anterior slope of pronotum to extremity of inferior propodeal plate or angle, i.e., excluding cervical flange or shelf.

Petiole L: axial length of petiole in side view, from inferior propodeal plate to apex of posterior peduncle.

CI (cephalic index): $HW \times 100/HL$

MI (mandibulo-cephalic index): $ML \times 100/HL$

SI (scape index): $SL \times 100/HW$.

In describing sculptural details, we have followed the illustrated work, *A Glossary of Surface Sculpturing* (Harris 1979), as closely as we could.

The principal collection used, as well as the main repository for type series, was that of the Museum of Comparative Zoology at Harvard University (MCZ); but loans were also made from, and paratypes deposited in, the collections of Cornell University, British Museum (Natural History), Museum National d'Histoire Naturelle in Paris, Museu de Zoologia da Universidade de São Paulo (MZSP), Brasil, and the United States National Museum of Natural History, Washington (USNM).

Ectatomma ruidum

(Figs. 1C, D, J)

Ponera (Ectatomma) ruida Roger, 1861:306, worker, queen.

Type loc. (by present selection): "Colombia." Other original localities were "Brasil" and "Cayenne."

Ectatomma aztecum Emery, 1901:50, worker. Type loc.: Mexico: "Michoacan." Type in Museo di Storia Naturale "Giacomo Doria" in Genoa, examined. New syn.

Ectatomma aztecum, described by Emery from southwestern Mexico, now appears to be just a very hispid variant of *E. ruidum*. Samples of *E. ruidum* from Acapulco, Veracruz, and elsewhere in lowland southern Mexico approach or equal the *E. aztecum* type in the large number of erect setae. Some of the Mexican specimens tend to have the first gastric (postpetiolar) tergum with more nearly transverse costulation (less strongly arched than usual for the species) over the anterior half or more of the disc.

E. ruidum is widespread in northern South America on both sides of the Andes south to southwestern Ecuador, into the Guianas, and at least to the northern border of Brasil in the region of the tepuis (Roraima: Rio Ururicuera, Ilha Marica, leg. R. Negrett), but it does not appear to extend far into the Amazon Basin. The records for Amazonas in Kempf's Catalogue need verification; *E. ruidum* probably occurs along the northern boundaries of that state; but the record for Rondonia is hardly credible and is undoubtedly based on misidentified collections by W. M. Mann, now known to be the "morgani" phenon of *E. edentatum*. It is possible that at least some of the original syntype specimens of Roger's *E. ruidum* really also belong to *edentatum*. Our selection of Colombia as the restricted-type locality is based on the high probability that any specimens from Colombia available to Roger would agree with the present concept of *E. ruidum*.

Ectatomma confine

(Figs. 1E, F, K)

Ectatomma confine Mayr, 1870:397, worker. Type loc.: "Neugranada."

New Granada originally embraced a large part of northern South America, including part or all of the present Venezuela, Colombia, Panama, and Ecuador. *E. confine* was reported incorrectly by Mann (1916) from Brasil, and Brown (1958, p. 186, fig. 2) applied the name (with a query) to the species described here as *E. gibbum*. Since that time, WLB examined the type series of *E. confine* in the Naturhistorisches Museum in Vienna, and the series proved large enough for Dr. Max Fischer to allow a specimen to be transferred to MCZ (figs. 1E, F, K).

E. confine is essentially the same as *E. ruidum*, but differs from the latter in that the processes of the trunk—median and both lateral pronotal prominences, and (especially) the paired propodeal teeth—are distinctly larger and more acute than are the corresponding structures as seen in any of the hundred or more collections of *E. ruidum* now available to us. Also, the petiolar node is a little thicker in side view. We suspect that the *confine* type series represents a single nest- or locality-series of *E. ruidum* with moderately hypertrophied truncal processes; after all, *ruidum* is a species exceptionally variable in sculpture and other "integumental" traits. The best way to settle this question is to locate the population from which the *confine* types came and see how this population relates to the overall variation of *E. ruidum*. Meanwhile, we continue to list *E. confine* and key it as a species in question.

Measurements of the MCZ syntype worker specimen are as follows: TL 8.7, HL 1.88, HW 1.54 (CI 82), ML 0.59 (MI 31), eye L 0.48, apical antennomere L 0.47, scape L 1.98 (SI 129), WL 3.08, petiole L 0.66, hind femur L 2.87 mm.

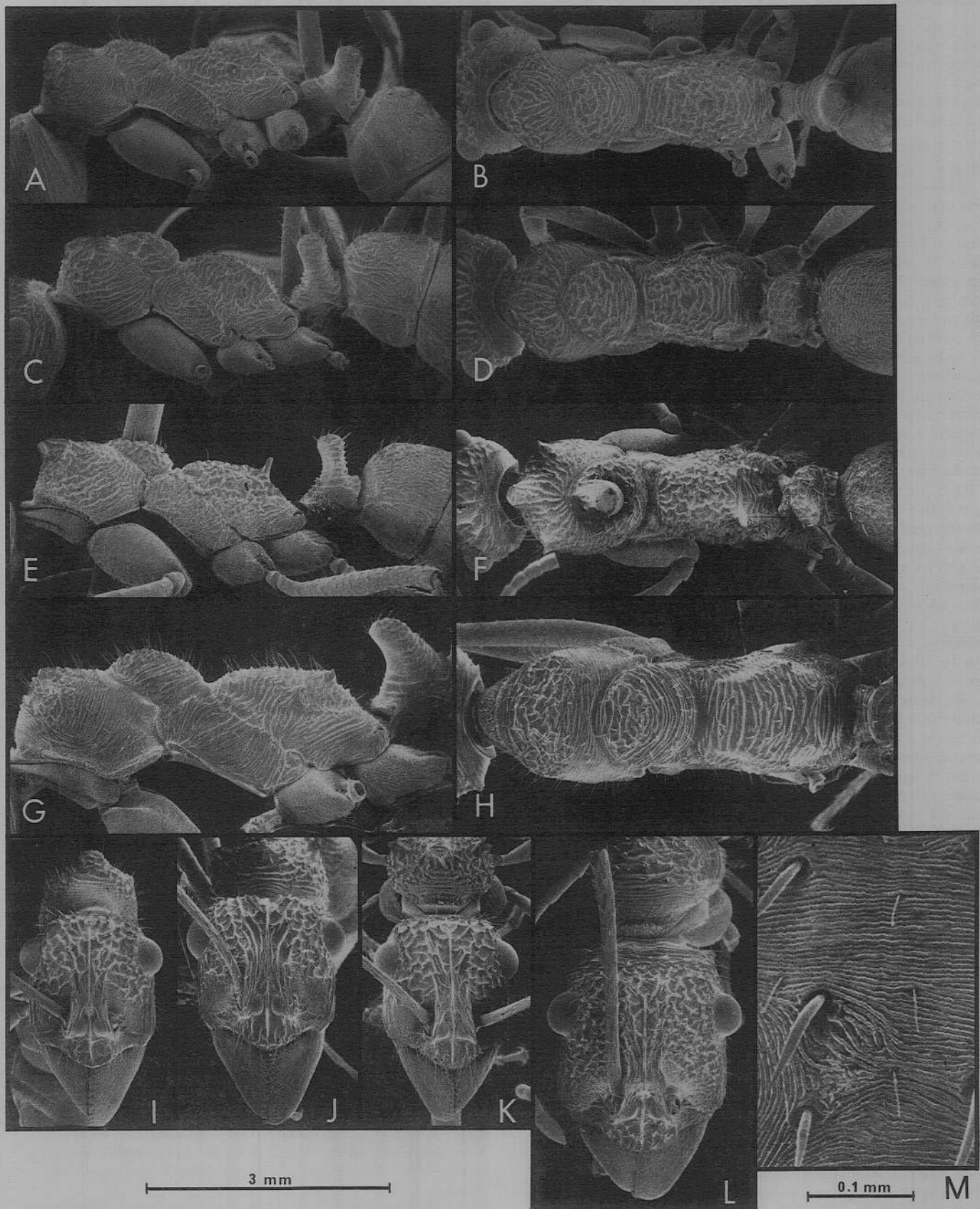


Figure 1. *Ectatomma*, workers of four species, scanning electron micrographs. *A, B, I, M, gibbum*; *C, D, J, ruidum*; *E, F, K, confine*; *G, H, L, goninion*. *A, C, E, G*, side views of trunk and petiole; *B, D, F, H*, dorsal views of trunk and petiole; *I, J, K, L*, dorsal (full-face) views of head and front views of pronotum; *M*, enlarged sculpture of disc of second gastric tergum in *gibbum*. In *F*, mesonotum of *confine* partly obscured by the cut end of a minuten pin protruding from the specimen. *A* through *L* to same scale.

Ectatomma edentatum

Ectatomma edentatum Roger, 1863:173, worker. Type loc.: "La Plata-Staaten."

Ectatomma morgani Forel, 1912:31, worker. Type loc.: "Peru." New syn.

Ectatomma edentatum race *MacDonaghi* Forel, 1915:351, worker (mermithergate?). Type loc.: Estacion Sosa, Argentina. New syn.

In the 1958 treatment of the genus, Brown suggested that *E. morgani* might be a (northern and western) geographical variant of *E. edentatum*. The much more extensive material of these two forms now available indicates to us that they are indeed representatives of a single species. The distinction between them has rested on an assumed difference in color (brown in *morgani*, blackish in *edentatum*) and in gastric sculpture (costulae more vermiculate or confused and broken in the posterior disc of gastric tergum I, striolation of tergum II finely eroded and dull in *morgani*; costulation of tergum I and striolation of II straighter and more glossy in *edentatum*).

Actually, the color and sculptural traits are distributed somewhat discordantly, although brownish, vermiculately sculptured workers are northern and western (Amazonian), whereas blackish, smoothly costulate workers are often southern (Paraguay, N Argentina, S and SE Brasil) or eastern (NE Brasil). Dark-colored (piceous) workers with essentially *morgani* sculpture are seen from Surinam and from northern Mato Grosso (SINOP, 55°37' W, 12°31' S, leg. Alvarenga), although "typical" *morgani* occurs much farther south in Bolivia (Covendo, leg. W.M. Mann).

In the northeast, *edentatum* occurs in some of the same Brazilian states as *E. muticum*, but it is not known whether the two species are ever precisely sympatric there. The records suggest that *edentatum* may tend to occupy higher elevations: Bahia, Encruzilhada, 980 m, leg. Seabra and Alvarenga. Bahia, Salvador, leg. W.W. Kempf. Pernambuco, Tapera, leg. B. Pickel. Pernambuco, Caruaru, 900 m, leg. T. Lima.

In the far west of Brasil, from Vilhena near the southern boundary of Rondonia (leg. M. Alvarenga) comes a typical specimen of *E. edentatum*; this locality appears from our maps to be well within the Amazon drainage, but lies in the foothills of the Serra do Parecis, a range that in its southeastern reaches forms the watershed between the drainage of the Amazon (northward) and the Rio Paraguai (southward). In any case, the specimen is a dealate queen that may have been blown in from elsewhere while still winged. Workers collected by Mann in northern Rondonia along the Rio Madeira near Abunã are typical *morgani*. Worker specimens from Venezuela (Yacua, leg. H.A. Beatty) and western Colombia (Rio Porce, 1020 m, leg. N.A. Weber), especially the Venezuelan specimen, tend to have gastric sculpture more like that of *edentatum* than that of *morgani*. Scattered samples of *edentatum* from central Brasil have slightly vermiculate gastric sculpture.

It is now also known for the first time that populations of the *morgani* morphotype extend into Panama (Barro Colorado Island) and even as far as the Osa Peninsula in Costa Rica (near Rincon de Osa, leg. B. Cornaby), thus approaching the range of the new species, *E. gibbum*, which may be the closest relative of *E. edentatum*.

The inconsistency and discordant distribution of the distinguishing characters of *edentatum* and *morgani* now seem to us to weigh against recognition of separate species (or subspecies), even though a majority of samples available seems to be recognizable as one form or the other.

We have not been able to locate any type specimen of *E. macdonaghi*, although we would expect the holotype to be in the British Museum. The description reads like a mermithergate (or, less likely, an ergatoid) of *E. edentatum*. Mermithergates are fairly common in some other species of *Ectatomma*, and it is easier to accept *E. macdonaghi* as a pathological form of *edentatum* than as the only known sample of a separate species.

Ectatomma gibbum new species

(Figs. 1A, B, I, M)

Holotype worker (La Selva; largest worker seen): TL 9.8, HL 2.14, HW 1.70 (CI 79), ML 0.62 (MI 29), eye L 0.50, apical antennomere L 0.50, SL 2.34 (SI 138), WL 3.60, petiole L 0.76, hind femur L 3.40 mm.

Paratype workers (5 specimens measured, including smallest specimen, from La Selva, and specimens from 3 localities in Nicaragua and Honduras): TL 7.6–9.7, HL 1.69–2.09, HW 1.30–1.65 (CI 77–80), ML 0.57–0.69 (MI 29–34), eye L 0.41–0.51, apical antennomere L 0.42–0.50, SL 1.92–2.28 (SI 137–148), WL 2.34–3.48, petiole L 0.62–0.80, hind femur L 2.68–3.28 mm.

Similar to *E. ruidum*, but a little more slender, and with the following main differences:

- Head more distinctly narrowed posteriorly, as seen in full-face view, with very prominent, convex eyes, the posterior outline arched almost evenly from eye to eye. In detail, the posterior vertex bears a weakly convex transverse crest, which even has a suggestion of median indentation (in place of the stronger impression here in *E. ruidum*); behind the crest are 4–5 fine, transverse rugulae or costulae, followed by the convex cervical flange, which completes the arch of the posterior cranial outline (fig. 1I).

- Pronotum dominated by the high, evenly rounded median eminence (fig. 1A, I), which sets off a fairly deep, but wide, round-bottomed saddle behind it, astride the pronotal suture. Lateral pronotal teeth or angles much smaller than median eminence and obtuse angled (in *E. ruidum*, lateral angles rectangular or acute and subequal to median eminence in size).

- Petiolar node a trifle thicker in side view and either unconstricted at midheight or with a very feeble, almost imperceptible constriction.

- Sculpture of first gastric tergum consisting of shallowly arched, uneven costulae, becoming finer and more variously oriented in the middle third, and this in turn passing into very fine, dense, opaque, broken striolation in about the apical third of the tergum. Superimposed on this are scattered, coarse piligerous punctures, each trailing a longitudinal or oblique "setal groove." (This sculpture is finer than in *E. ruidum*, and the coarse oblique costae on the sides of the first tergum in *E. ruidum* are replaced by finer, more longitudinal costulae in *E. gibbum*.) Second gastric segment with variously oriented, very fine, sericeous striolation (seen highly magnified in fig. 1M) like that of *E. ruidum*, but even finer.

- Color medium to dark orange brown, with dull yellowish brown legs. The color is lighter than that usually seen in fully adult *E. ruidum*.

Queen and male unknown.

Holotype (MCZ) a worker taken by wood-block trapping on the forest floor at La Selva Research Station, Heredia Province, **Costa Rica**, during October 1972 (leg. Monte Lloyd). Paratypes (14) were taken singly in wood-block traps, in Berlese funnel litter samples, and by hand collecting on the forest floor and in litter gathered in the tops of small palms in the rain forest at the type locality by M. Lloyd (various dates spread through 1972) and by W.L. Brown in January 1973. Elsewhere in Costa Rica, we have strays from Turrialba (leg. N.A. Weber) and from forest along the Rio Reventazon 3–5 km E of Turrialba (leg. W.L. Brown). Two workers from **Nicaragua**: El Tuma, Highway 5, 30 km E of Matagalpa, 330 m, (C. Kugler and J. Hahn). **Honduras**: Lancetilla, near Tela (unknown collector), and forest behind Lancetilla Botanical Gardens (leg. W.L. Brown); Corocito, 1924 (Prov. Colon, collector unknown).

E. gibbum is similar to *E. ruidum* and has been confused with it in the past. The high, rounded pronotal hump of *gibbum* is diagnostic, as are the reduced lateral pronotal teeth, the slightly thicker, usually unconstricted petiolar node, and the strongly rounded posterior outline of the head, arched almost evenly from

eye to eye. The two species are sympatric over a wide area of lowland, wet Central America, stretching at least from Honduras to Costa Rica. At the *gibbum* type locality, the Finca La Selva Station of the Organization for Tropical Studies in Costa Rica, *E. ruidum* is common foraging on the bare ground in the laboratory clearing; *E. gibbum* occupies the rain forest less than 50 m away from the clearing and is the dominant *Ectatomma* in the forest. *E. ruidum* has not been found inside this forest, either by ourselves in general and Berlese-funnel collecting or by Monte Lloyd through wood-block trapping on the forest floor. The same situation seems to hold at Lancetilla in Honduras; but in Panama, in forest on Barro Colorado Island and elsewhere near the Canal, *E. ruidum* occurs in both clearings and (together with *E. edentatum*) in the shady parts of wet forest, whereas *E. gibbum* has yet to be found in Panama. Thus it appears that *E. gibbum* vs. *E. ruidum* may represent an interesting case of ecological displacement.

E. gibbum nests have not yet been found. We assume that they are made in the soil of the forest floor, on which most workers are taken, but a few stray workers have also been found (at La Selva) in masses of dead leaves gathered in the tops of 1- to 2-meter palms in the forest understorey.

Although *E. gibbum* has not yet been reported from Guatemala or Belize, it may well extend to those countries and should be looked for there.

***Ectatomma goninion* new species**

(Figs. 1G, H, L)

Holotype worker: TL 11.8, HL 2.48, HW 1.95 (CI 79), ML 0.80 (MI 32), eye L 0.52, apical antennomere L 0.57, SL 2.92 (SI 150), WL 4.08, petiole L 0.92, hind femur L 4.20 mm.

Paratype workers (Finca Los Guadales, Colombia) range from about the size of the holotype up to that of the largest worker: TL 12.11, HL 2.56, HW 2.04 (CI 80), ML 0.81 (MI 32), eye L 0.54, apical antennomere L 0.57, SL 3.00 (SI 147), WL 4.18, petiole L 0.93, hind femur L 4.34 mm.

Three workers from Pichincha Province, Ecuador, are similar in size to the Colombian series, but the smallest measures only TL 10.8, HL 2.30, HW 1.85 (CI 80), ML 0.75 (MI 33), eye L 0.49, apical antennomere L 0.55, SL 2.66 (SI 144), WL 3.87, petiole L 0.84, hind femur L 3.85 mm.

Similar to *E. ruidum*, but differs in the following ways:

- Size larger; the smallest specimen seen (from Pichincha Prov., Ecuador) still has the head width including the eyes slightly more than 2.0 mm, which is over 0.1 mm more than the corresponding width of the largest available workers of *E. ruidum*. Smaller specimens (minims) of *E. goninion* may well exist, but these would probably still be larger than all but the very largest *E. ruidum*.

- The posterior vertex a little way in front of the cervical margin is slightly broadened and bears a transverse crest, or carina, that terminates on each side in a distinct, projecting subrectangular corner (fig. 1L) when the head is viewed in dorsal full-face. Around the crest is a broad band of fine transverse costulae, and behind it the head is rapidly narrowed toward the sharp cervical margin. The transverse crest is very slightly bowed (convex) in the holotype and paratypes, but almost perfectly straight in the Pichincha samples.

- Trunk formed and sculptured much as in *E. ruidum*. In the holotype and paratypes from Colombia, the median eminence of the pronotum is low and rounded in both front and side views, or perhaps with a bare hint of angulation anteriorly in side view (fig. 1G). As seen from the front, the median eminence is twice (or more) wider at base than high, and its sides slope through feeble concavities to the obtuse lateral pronotal angles, whence the sides of the pronotum drop nearly vertically. (In the Ecuadorian

specimens, however, the median pronotal eminence is higher, more bilaterally compressed, and more narrowly rounded at apex in both front and side views, and it is set off by deeper concavities from the obtuse lateral angles. In front view, the median eminence is less than twice as wide across its base as it is high).

- The petiolar node as seen from the side is thicker than in *ruidum*; the thickness measured just above the strongly tapered basal part is 0.40–0.42 in three Colombian workers, and there is no constriction at mid-height, as in *ruidum* (and *confine*); compare figures 1C and E with G. (In the Ecuadorean workers, the node is even thicker, more strongly tapered, and with a more broadly rounded summit; thickness in side view at midheight, above the thickest part at base of node, is 0.45–0.55 mm).

- In dorsal view, the sculpture of the first gastric segment is costate in a gently arched transverse direction over the anterior 70–75% of its surface, abruptly meeting a posterior lunate strip, occupying the apical quarter or so, which is confused rugulose in the Colombian sample, but more longitudinal rugulose in the Ecuadorean workers. The anterior costation is more transverse, more even, and more widely spaced than in *ruidum*, and is a little coarser in the Colombian than in the Ecuadorean series. In *ruidum*, the costulae are much more in the form of rugulae distributed in the shape of an inverted U, the arms being continuous posteriorly as short longitudinal rugules to the tergal margin.

- Pilosity abundant and stiffly erect over most of body, scapes, and legs, tapered, fine-pointed, similar in form and density to that of Ecuadorean samples of *E. ruidum*.

- Color piceous, in some lights with faint bronzy reflections; legs lighter in color, yellowish brown to castaneous; scapes castaneous to dark brown.

Queen (1 alate and 1 dealate) from holotype nest (Colombian) series: TL 12.1–12.6, HL 2.33–2.43, HW 2.04–2.11 (CI 88), ML 0.75–0.80 (MI 31–34), eye L 0.66–0.67, apical antennomere L 0.50–0.51, SL 2.10–2.12 (SI 100–103), WL 4.08–4.20, petiole L 0.9–1.0, hind femur L 2.90–2.96 mm. Forewing L, excluding tegula, 8.6 mm.

Much more robust than worker and lacking the diagnostic conformation of the back of the head; in form and sculpture much like the queen of *E. ruidum*, but larger. Sculpture of first gastric tergum finer than in worker, consisting of transverse costulae arched over a posterior triangular or semilunar patch of longitudinal costulation of about the same gauge. Each of these two queens has a small anteromedian indentation on the first gastric segment. Color piceous; middle and ventral parts of trunk with legs lighter in color, suffused with reddish brown.

Holotype (MCZ) part of a colony with dealate queen found at Finca Los Guadales, on a forest slope at about 760 m elevation, along the Rio Torito, 10 km SW of San Jose del Palmar, near the SE border of Choco Department, Colombia, C. Kugler leg. A winged queen was taken at the same locality, but higher up in a *Guadua* (bamboo) stand at about 800 m, 2 June 1978 (Kugler leg.).

Three workers from Ecuador all come from Pichincha Province: one from Tinalandia, 16 km SE Santo Domingo de los Colorados, forest litter (S. and J. Peck leg.); two from the University of Miami Research Station at Rio Palenque, in forest litter (leg. G.J. Umphrey).

Workers of this species are easily recognizable by their large size, squared posterior extremity of the head, and nodal shape. The divergences in pronotal form between the (type) series from the Choco in Colombia and the three specimens from Ecuador are marked and parallel weaker differences in nodal form. Together, these differences could well mark distinct local species, but we are reluctant to recognize them as such in a genus (and species-group) as variable as *Ectatomma* (and the *E. ruidum* group) when the representative material is still so scanty. For the time being, we regard the two forms as geographical variants of a single trans-Andean species.

Key to species of *Ectatomma*—workers

- 1 Body uniformly finely striate throughout (except legs); clypeus without a distinct median carina 2
 Sculpture diverse in kind or gauge over different parts of body (excluding legs); clypeus with a distinct median carina 3
- 2 Larger species (head width without eyes usually >1.7 mm); individual striae of body sculpture with rather smooth even surfaces; full body color dark brown to black; median pronotal eminence not in the form of a round-pointed shovel, at most only slightly projecting anteriorly (S America E of Andes, in clearings or savanna areas, often adjacent to forest) *quadridens*
 Smaller species (head width without eyes <1.7 mm); individual striae of head and trunk with rough, pitted, or eroded surfaces; full body color dull yellowish brown or reddish brown; median pronotal eminence flattened, concave, in the form of a round-pointed shovel with edge projecting strongly forward (C and S Brasil, mainly in cerrado or savanna) *planidens*
- 3 Opening of propodeal spiracle narrowly slitlike, usually 4 or more times longer than wide; space between compound eye and frontal carina opaque, finely longitudinally striate or obliquely rugulose, without deeply concave, shining interspaces (S America) 4
 Opening of propodeal spiracle more nearly elliptical or oval, less than 4x as long as wide; space between eye and frontal carina with 4–8 very coarse rugae separating broad, deep, more or less shining interspaces or areolets (S and C America, Mexico) 6
- 4 Vertex behind and between eyes with a prominent pair of subpyramidal teeth or tubercles; space between eye and frontal carina crossed by oblique rugulae; median eminence of pronotum very high, rising above mesonotum, its apex sharply truncate (C Brasil to N Argentina, SE Venezuela, in savanna, cerrado, arid scrub) *opaciventre*
 Vertex without paired prominent teeth or tubercles; space between eye and frontal carina densely longitudinally striate; median eminence of pronotum low, its posterior surface horizontal and on the same level as mesonotal surface 5
- 5 Antennal scape (without radicle) length < width of head across and including eyes; second gastric segment with at least its anterior half striolate-reticulate, the tiny pits arranged there in definite rows (C Brasil to NW Argentina, in cerrado, arid scrub, and savanna) *permagnum*
 Antenna scape length (without radicle) > width of head across and including eyes; second gastric segment completely finely reticulate, without striolation (Amazonian lowlands of Brasil, Peru, Ecuador, and Colombia, Guianas; in wet forest) .. *lugens*
- 6 Pronotum with median eminence not or only very feebly differentiated; dorsolateral tubercles or angles obsolete 7
 Pronotum with a well-differentiated median eminence and at least a small pair of dorsolateral (humeral) teeth or angles ... 8
- 7 Second gastric tergum (true abdominal tergum IV) completely very finely and densely striolate, sericeous or matt sculpture partly longitudinally oriented; standing hairs here abundant, many of them over 0.15 mm long; eye length subequal to or shorter than apical antennomere (SE Costa Rica to W Colombia; Trinidad and Venezuela, S to SE Brasil, N Argentina, Paraguay, and Bolivia) *edentatum*
 Second gastric segment more or less strongly shining, irregularly subaciculate in a slightly arched, transverse direction; the aciculation often loose and frequently obliterated, leaving virtually smooth the disc or large parts of it; standing hairs here sparse and very short, mostly less than 0.12 mm long; eye subequal to, or longer than, apical antennomere (NE states of Brasil: Bahia to Maranhao) *muticum*
- 8 Petiolar node as seen from the side low and thick, subtriangular, with broadly rounded summit, and anterior and posterior slopes strongly converging upward; lateral teeth of pronotum often more prominent than median eminence; color usually yellowish brown, but darker reddish brown in some samples from northern S America (Mexico to N Argentina) ... *tuberculatum*
 Petiolar node as seen from the side high and thin, at least the upper half with anterior and posterior faces vertical and subparallel, or even concave (figs. 1A, C, E, G); lateral pronotal teeth small or at least less prominent than median eminence; color reddish brown to nearly black 9
- 9 Head in perfect full-face view with posterior corners distinctly angulate; full-sized worker head width across and including eyes 2.0 mm or more (figs. 1G, H, L) (W Colombia: Choco; W Ecuador) *goninion*
 Head in perfect full-face view with posterior corners broadly rounded (figs. 1I, J, K); head width across eyes < 2.0 mm ... 10
- 10 Median eminence and lateral teeth of pronotum all well developed, prominent and sharp edged or sharp pointed; propodeal teeth slender, distinctly longer than orifice of propodeal spiracle (figs. 1E, F, K) ("New Granada," exact location unknown) *confine*
 Median eminence of pronotum well developed or not, but not so sharp edged at anterior apex; lateral teeth less prominent, usually rectangular to barely acute as seen from the side or front; propodeal teeth triangular and not longer than orifice of propodeal spiracle (figs. 1A, C) 11
- 11 Head in perfect full-face view with posterior outline transverse, nearly straight over most of the distance between the eyes or indented mesad; median eminence of pronotum low, angular in front as seen from the side; lateral teeth prominent, acute or rectangular (figs. 1C, D, J) (S Mexico to N South America and W Ecuador) *ruidum*
 Head in perfect full-face view with posterior outline arcuate from eye to eye (including posterior median flange); median eminence of pronotum very high and bluntly rounded; lateral teeth reduced to small obtuse angles (figs. 1A, B, I) (Honduras, Nicaragua, Costa Rica) *gibbum*

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