

Neotropical ants of the genus *Xenomyrmex* Forel ¹⁾

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(With 2 figures)

The ants of the genus *Xenomyrmex*, established by Forel as long ago as 1884, have since remained almost unknown to myrmecologists. Indeed, all that has been learned about these minute insects was recorded in a few pages of three papers, ²⁾ and has been summarized in half a page of Emery's revision of the Myrmicinae in the "Genera Insectorum" (1921). This literature relates to a single species, *Xenomyrmex stoll*i, discovered by Prof. O. Stoll at Guatemala City and two of its subspecies, *floridanus* Emery, taken by Pergande in Florida, and *lucayanus* Wheeler, taken by myself in the Bahamas. All three forms were based on worker specimens, though Emery described with some misgiving a male specimen of *X. floridanus*. Recently I have found among some miscellaneous ants in the Museum of Comparative Zoology three dealated females of *X. floridanus* and have taken the female of another form in Florida. Dr. Elisabeth Skwarr has sent me three undescribed forms, two of them represented by male and winged female, as well as worker specimens, which she collected in Mexico, and Dr. W. S. Creighton has given me a few workers of a distinct *Xenomyrmex* which he collected in Cuba. I have, moreover, discovered that the ant which I described ³⁾ as *Myrmecinella panamana* is a true *Xenomyrmex*, so that the genus *Myrmecinella* passes into the synonymy. This allocation and the various accessions above mentioned have suggested a revision of the generic diagnosis of *Xenomyrmex* and brief description of all the known forms.

1) Contributions from the Entomological Laboratory of Harvard University No. 341.

2) Forel, A. Etudes Myrmécologiques en 1884. Bull. Soc. Vaud. Sc. Nat. 20, 1884, 65 pp. 1 pl. — Emery, C. Beiträge zur Kenntniss der nordamerikanischen Ameisenfauna (Schluss). Zool. Jahrb. Abt. Syst. 8, 1894, pp. 257-360, 1 pl. — Wheeler, W. M. The Ants of the Bahamas, with a List of the Known West Indian Species. Bull. Amer. Mus. Nat. Hist. 21, 1905, pp. 79-135, 12 figs. 1 pl.

3) A new Genus and Subgenus of Myrmicinae from Tropical America. Amer. Mus. Novitates, No. 46, 1922, pp. 1-6, 2 figs.)

Xenomyrmex Forel

Worker. Small, monomorphic, with rather thick, smooth or delicately sculptured integument. Head rather large, subrectangular, with feebly rounded sides and slightly concave posterior border. Eyes small, flattened, at the anterior third of the head; ocelli absent. Mandibles triangular, with strongly convex external border, the terminal border provided with three stout apical and a few indistinct basal denticles. Maxillary palpi 4-jointed; labial palpi 2-jointed. Antennæ 11-jointed, the basal funicular joint elongate; joints 2-7 small and transverse, the last three joints forming a club, the last joint swollen and longer than the two basal joints which are unequal and scarcely longer than broad. Clypeus short and convex, in the middle extending backward between the frontal carinæ, and projecting anteriorly as a broad lobe with a concave median border and on each side a stout, somewhat outwardly curved tooth. Frontal carinæ short, somewhat diverging posteriorly and rather widely separated. Frontal area and groove obsolete. Thorax slender, much narrower than the head, shaped much as in *Monomorium*, broadest through the pronotum, with pronounced mesoëpinotal constriction; epinotum small, subcuboidal, unarmed. Petiole small, subcylindrical, nonpedunculate, parallel-sided, feebly convex above and below, but without a distinct node, anterodorsally with a tooth or angle on each side. Postpetiole small and short, scarcely broader than the petiole, convex above. Gaster about the size of the head, oval, somewhat flattened dorsoventrally, narrowed anteriorly towards the petiole. Legs with distinctly incrassate femora and stout, clavate tibiæ; claws simple.

Female. Much larger than the worker. Head longer and more rectangular. Eyes flattened as in the worker but larger; ocelli small. Frontal area and anterior portion of frontal groove distinct. Thorax elongate-elliptical, as in *Monomorium*, nearly three times as long as broad, narrower than the head, with elongate mesonotum and small scutellum. Petiole, postpetiole and appendages like those of the worker, gaster much more voluminous, elongate-elliptical. Fore wings with open submarginal and discal cells and a single long cubital cell; hind wings without veins.

Male. As small as the worker. Head rather large, through the eyes somewhat broader than long, convex above, broader behind than in front, with broadly rounded posterior corners and short, straight cheeks. Eyes placed anteriorly, large and convex, nearly half as long as the sides of the head; ocelli small, pro-

minent and widely separated. Clypeus convex, its anterior border narrowly concave in the middle, with a vestigial denticle on each side. Mandibles small and narrow, their truncated terminal border with three or four subequal denticles. Antennæ rather long, 12-jointed; scapes cylindrical, as long as the two basal funicular joints together, first funicular joint not enlarged but the second distinctly thicker than the more apical joints; last joint as long as the two preceding joints together. Thorax proportionally shorter than in the female, narrower than the head, with large pro-mesonotum and small epinotum; mesonotum as broad as long, with distinct notauli ("Mayrian furrows"); scutellum and mesosterna large and convex. Petiole above with a rounded, distinct, but low node. Postpetiole and gaster shaped as in the worker. Genitalia somewhat retracted; stipes rounded triangular; volsellæ biramous and peculiarly contorted; sagittæ long and slender. Legs not incrassated. Venation of forewings much reduced, only the subcostal and median cells, the base of the radial vein and the pterostigma remaining, or in some cases only the pterostigma and base of the subcostal vein; hind wings veinless as in the female.

Genotype: *Xenomyrmex stolli* Forel. The generic characters of the female and male are drawn from the subspecies *skwarra*, *floridanus*, *rufescens* and *castus*.

Forel believed *Xenomyrmex* to be related to *Monomorium*, though he also noticed certain resemblances to *Pristomyrmex*. When I described *X. panamanus* as *Myrmecinella panamana* I placed it in the tribe Myrmecini, which also includes *Pristomyrmex*, but since the females of several subspecies of *X. stolli* have come to light, I agree with Forel and Emery in placing the genus near *Monomorium*, that is, in Emery's subtribe Monomoriini of the tribe Solenopsidini. It should be noted however, that the pedicel of the worker and female of *Xenomyrmex* is very different from that of any other Solenopsidine genus, and that the male is very small, possesses notauli and a peculiarly reduced venation. Moreover, unlike *Monomorium*, which, with the exception of its small subgenus *Martia*, is an Old World genus, *Xenomyrmex* is confined to the New World and occurs, so far as known, only in North America, from Panama to tropical Mexico and from Cuba and the Bahamas to Southern Florida. I have seen no records of its occurrence in any of the other Gulf States.

The species of *Xenomyrmex* form rather small colonies and

nest in plant-cavities, such as those of oak-galls, twigs, *Acacia* thorns, epiphytic *Bromeliads* (*Tillandsias*). In the field the various forms are easily mistaken for minute species of *Solenopsis*, like *S. picta* Emery, and *Monomorium*, especially *M. floricola* Jerdon and *M. ebeninum* Forel, which nest in the same situations. From the fact that the types of *X. stolli* were found in a huge oak-gall, which also contained a colony of *Camponotus* (*Myrmobrachys*) *abscissus* Roger, Forel concluded that *Xenomyrmex* was probably a parasitic or symbiotic genus like *Formicoxenus*, but this opinion has received no support from subsequent observations. The generic name is therefore a misnomer.

The specimens of *Xenomyrmex* in my collection represent nine different forms. *X. panamanus* is a very distinct species, quite different from the eight other forms, which differ from one another by such feeble morphological characters that several of them might be regarded as so many varieties of the single species *stolli*. For geographical reasons, however, it seems best to regard them as subspecies. The following table will serve to separate the workers of the various forms:—

Workers

1. Head finely striated, except in the median line; sides of front distinctly flattened or depressed; entire thorax densely and regularly reticulate-rugose.....*panamanus* (Wheeler)
- Head and at least the pronotum smooth and shining; sides of front not flattened..... 2.
2. Head and thorax reddish brown or black..... 3.
- Head and thorax yellow..... 6.
3. Head and thorax reddish brown..... 4.
- Head and thorax much darker, black or very deep castaneous brown.....*stolli mexicanus*, subsp. nov.
4. Mesopleuræ and sides of epinotum smooth and shining....
stolli stolli Forel
- Mesopleuræ and sides of epinotum subopaque and reticulate-rugose..... 5.
5. Reddish brown, apical antennal joint pale brown, tibiæ yellowish, gaster not yellowish at base.....
stolli floridanus Emery.
- Darker brown; apical antennal joint blackish; tibiæ white; base of first gastric segment yellowish.....
stolli cubanus, subsp. nov.
6. Petiole distinctly longer than wide..... 7.

- Petiole as broad as long, sides of gastric segments maculate with brown.....*stolli skwarrae*, subsp. nov.
- 7. At least the posterior portion of the gaster brown or blackish... ..*stolli lucayanus* Wheeler.
- Gaster yellow throughout.....*stolli castus*, subsp. nov.

Females

- 1. Yellow forms..... 3
- At least the entire gaster dark brown or black..... 2.
- 2. Head, thorax and pedicel yellowish red.....
stolli rufescens, subsp. nov.
- Head, thorax and pedicel dark brown.....
stolli floridanus Emery.
- 3. Length 3.5 mm. First to third gastric segments with a brown spot on each side *stolli skwarrae*, subsp. nov.
- Length 4 mm. Gaster entirely yellow.....
stolli castus, subsp. nov.

Xenomyrmex panamanus (Wheeler) (Fig. 1)

Myrmecinelletta panamana Wheeler, Amer. Mus. Mus. Novitates, No. 46, 1922 p. 1,
Fig. 1. ♀

Worker. Length 2 mm.

Easily distinguished from the worker of *stolli* Forel and all its subspecies by the flattened sides of the front, the very deep mesoëpinotal constriction and the sculpture of the head and thorax. The petiole is as broad as long and has very pronounced anterior denticles.

The two specimens from which this species was described were found at Colon, Panama. More recently I have taken several specimens at Mt. Hope and on Barro Colorado Island, in the same region, always

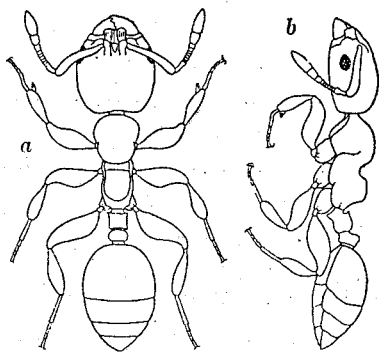


Fig. 1. Worker of *Xenomyrmex panamanus*
a, dorsal; b, lateral views.

running singly on tree-trunks. I was unable to find the nests, which are probably excavated in the bark or twigs.

Xenomyrmex stolli stolli Forel

Xenomyrmex stolli Forel, Bull. Soc. Vaud Sc. Nat. 20, 1884, p. 370 ♂; Emery, Genera Insect. Myrmicinae, 1921, p. 188 ♂.

Worker. Length 2-2.3 mm.

Mandibles smooth and shining, with a few scattered punctures. Entire body, including the head, low and depressed. Epinotum with rounded basal surface passing through a curve into the declivous surface.

There are a few short, longitudinal rugæ on the cheeks, the sides of the clypeus and the sides of the front. All the remainder of the body entirely smooth and very shining, with a few scattered punctures. Some very sparse, erect hairs on all parts of the body. Scapes and legs with moderately abundant, subappressed pilosity. Pubescence absent. Deep chestnut brown, nearly black, thorax often paler. Pedicel, legs, scapes, base of funiculus and especially the mandibles and tarsi paler, reddish brown.

City of Guatemala. A certain number of workers with their larvæ and pupæ, associated with a formicary of *Camponotus abscissus* Roger, in an enormous oakgall (Dr. Stoll)." [Forel].

Forel has, I believe, somewhat overestimated the length of this species. Four cotypes which he gave me many years ago, all measure less than 2 mm., or approximately 1.8 — 1.9 mm. Their color is paler and more reddish brown than described.

Xenomyrmex stolli mexicanus, subsp. nov.

Worker. Length 1.8 mm.

Head larger, broader and more rectangular, that is, with more nearly parallel sides than in the typical *stolli*. Color of body, femora and terminal joint of the antennal club decidedly darker, very dark brown or black; remainder of antennæ, tibiæ, tarsi and mandibles pale brown.

Described from three specimens taken by Dr. Elisabeth Skwarra in an epiphyte, *Tillandsia Balbisiana* Schult. fil. at Mirador (Zacuapam), in the State of Veracruz, Mexico.

Xenomyrmex stolli cubanus, subsp. nov.

Worker. Length 1.6 mm.

Smaller than the preceding forms. Mesopleuræ and sides of epinotum subopaque, densely reticulate. Body colored as in the typical *stolli*, but the base of the first gastric segment is yellowish brown. Legs and antennæ of the same color, femora somewhat darker brown; terminal joint of the antennal club blackish.

Described from three workers found by Dr. W. S. Creighton at Mina Carlota, Cumanyagua, Cuba, under a flake of stone on a limestone ridge. Since there was in this situation only a small collection of workers without brood or queen, and since several hours previously Dr. Creighton had cut down some

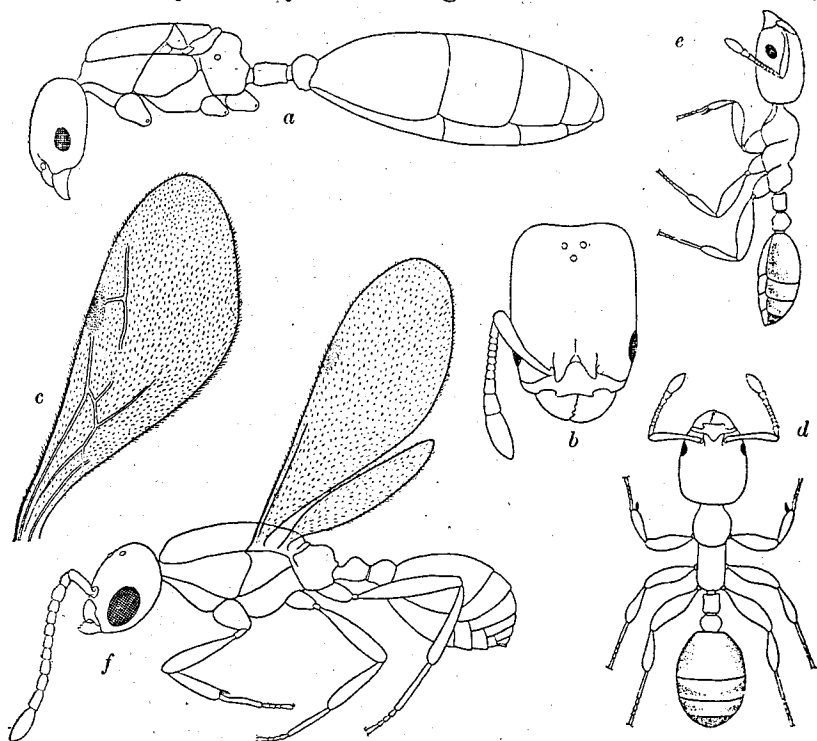


Fig. 2. a, *Xenomyrmex stollifloridanus* Emery, dealated female, in profile; b, head of same dorsal view; c, wing of same; d, worker of *X. stolliskucarra* subsp. nov., dorsal view; e, same in profile; f, male of same in profile.

creepers and branches with a machete just above the spot where the ants were found, he believes that they were probably only a bivouacking remnant of a colony that he had driven from its nest in some twig or liana.

Xenomyrmex stollifloridanus Emery (Fig. 2 a,b,c,)

X. stollifloridanus subsp. *floridana* Emery, Zool. Jahrb. Abt. Syst. 8, 1895 p. 275 ♀ ♂;
Genera Insect. Myrmicinae, 1921, p. 188 ♀ ♂.

Worker. Length 1.7 mm.

Head somewhat narrower and somewhat more rectangular than in the typical *stollifloridanus*. Body paler, more yellowish brown, posterior borders of gastric segments, legs and antennae yellow-

ish white; femora and last joint of antennal club yellowish brown like the body. Mesopleuræ and sides of epinotum finely reticulate and less shining than the pronotum.

Female (deâlated). Length 4 mm.

Head rectangular, with straight, parallel sides and posterior border, a fifth longer than broad. Eyes moderately large, flattened; ocelli small. Mandibles stout and convex. Thorax elongate-elliptical, three times as long as broad, narrower than the head. Mesonotum half as long as the thorax, fully half again as long as broad. Scutellum small; metanotum distinct but narrow. Epinotum short, subcuboidal, its base convex, as long as the somewhat concave and nearly perpendicular declivity. Petiole and postpetiole resembling those of the worker, the former half again as long as broad, the latter one third broader than the petiole. Gaster large, elongate, suboblong, as long as the remainder of the body.

Smooth and shining as in the worker, mandibles finely punctate, cheeks striate, subopaque, sides of head above coarsely and sparsely punctate. Pilosity on the body longer and more abundant than in the worker. Color somewhat darker brown, tibiæ almost as dark as the femora. Mandibles of the same color as the head, last joint of antennal club black.

Male (according to Emery). Length 1.75 mm. "The head is short, the eyes placed far forward; mandibles very small, obliquely truncated, the clypeus convex, unarmed. The scape of the antennæ is cylindrical, slender, as long as the two succeeding joints together; the first funicular joint is scarcely thicker than the scape, spherical; the succeeding joints much thicker, about as long as broad, the four terminal joints longer, the last as long as the two preceding together. The thorax is unfortunately somewhat damaged, but it seem to show a trace of parapsidal furrows. The petiole resembles that of the worker; the gaster is club-shaped, the genitalia very small. The wings are, injured, but seem to have a much reduced venation."

The worker specimens from which this form was described were taken by Theodore Pergande in a twig of a mastic tree *Sideroxylon mastichodendron*, at Lake Worth Florida. The male, described from a damaged specimen, belonged, perhaps, to another colony. I possess one of the cotype workers and a worker and three females taken by Dr. W. S. Blatchley at Dunedin, Florida.

Xenomyrmex stolli rufescens, subsp. nov.

Female (deälated). Length 4 mm.

Head somewhat broader in proportion to its length than in *floridanus*, thorax somewhat stouter. Head, thorax and pedicel yellowish red, legs and antennæ yellow; ocellar triangle, last antennal joint, wing-insertions, an elongate spot on each parapteron, metanotum, gaster and extensor surface of middle and hind femora, black; scutellum dark brown, posterior borders of gastric segments yellowish.

Described from a single specimen which I found in the act of establishing a colony in a small cavity in a branch of a living tree on Long Pine Key, Florida.

Xenomyrmex stolli lucayanus Wheeler

X. stolli floridanus var *lucayanus* Wheeler, Bull., Amer. Mus. Nat. Hist. 21, 1905 p. 87, ♂; Emery, Genera Insect. Myrmicinae 1921, p. 188, ♂.

Worker. Length 1.5-1.8 mm.

Resembling *floridanus* except in color, the head, thorax, pedicel and appendages being yellow, the gaster dark brown, with more or less of the base of the first segment yellowish, the femora and terminal joint of antennal clubs faintly tinged with brown.

This form was originally described from numerous specimens taken from two colonies on Andros Island, Bahamas. One of these was nesting in a *Tillandsia* on the north shore of Southern Bight, the other in a hollow twig at Mangrove Cay. Dr. W. M. Mann has sent me two specimens which he took more recently in the latter locality.

Xenomyrmex stolli skwarrae, subsp. nov. (Fig. 2 d,e,f).

Worker. Length 1.4-1.7 mm.

Differing from the preceding forms of *stolli* in its smaller average size, less swollen femora, in having the petiole as broad as long and in lacking erect hairs on the body. The body is very smooth and shining, yellow throughout, except for a brown subapical ring on the middle and hind tibiæ, a brown terminal joint to the antennal club and a spot of the same color on each side of the first to third gastric segments. The fourth segment is indistinctly brownish throughout.

Female. Length 3.5-3.7 mm.

Decidedly smaller than the females of *floridanus* and *rufescens*, with less swollen and more compressed femora, shorter pet-

iole and much less abundant pilosity. Yellow like the worker, with the ocellar triangle, mandibular teeth, wing-insertions and metanotum blackish, the brown spots on the sides of the first to third segments large and conspicuous and the fourth with a broad transverse brown band. The spots on the second and third segments are really the lateral portions of medially interrupted bands. Terminal joint of antennal club fuscous; femora scarcely infuscated. Wings colorless, with yellow veins and pterostigma.

Male. Length 1.3-1.5 mm.

Head distinctly broader than long, somewhat broader behind than in front, with nearly straight posterior border, rounded sides and dorsal surface. Anteriorly placed eyes convex, nearly half as long as the sides of the head. Clypeus convex, with bidenticulate anterior border. Mandibles small, narrow, quadridenticulate. Antennal scape as long as the first and second funicular joints together, first funicular small and globular; joints 2 to 6 slightly longer than broad, the last four decidedly longer, the terminal joint somewhat thicker than the penultimate and twice as long.

Thorax stout anteriorly, narrowed posteriorly to the small epinotum, which is convex and rounded, without distinct base and declivity; mesosterna very convex. Petiole slightly longer than broad, with a low, rounded node above. Postpetiole and gaster shaped much as in the worker.

Shining; head more subopaque, finely striate-punctate. Pilosity sparse, delicate, whitish, short and suberect, as abundant on the legs as on the dorsum of the body. Black or deep piceous brown; appendages and mandibles pale whitish yellow; femora infuscated; wings colorless as in the female, with pale brownish pterostigma.

Described from three females, four males and a number of workers which Dr. Elisabeth Skwarra found nesting in hollow spines of *Acacia spadicigera* in the savanna country about Cameron in the State of Veracruz, Mexico. Perhaps this ant, which is more distinct morphologically than any of the other forms of *X. stolli* should be regarded as an independent species.

Xenomyrmex stolli castus, subsp. nov.

Worker. Length 1.8-2 mm.

Resembling the worker of *skwarrae* but larger and with the petiole distinctly longer than broad. Head somewhat shorter, distinctly rectangular, with parallel sides. Uniformly yellow, the

tibiæ and tarsi paler, whitish yellow, the femora not infuscated, the terminal joint of the antennal club tinged with brown; gaster immaculate. Pilosity very sparse.

Female (adult pupa). Length 3.5-3.7 mm.

Larger than the female of *skwarra*, color like that of the worker. Head as long as in the females of *floridanus* and *rufescens*.

Male. Length 1.6 mm.

Like the male of *skwarra* but slightly larger, with somewhat longer petiole; antennæ, tibiæ and tarsi darker and more brownish. Antennal scapes slightly longer than the two basal funicular joints together.

Described from two males, three mature female pupæ and several workers taken by Dr. Elisabeth Skwarra in an epiphyte, *Tillandsia streptophylla* Scheidw., at Mirador, in the State of Veracruz, Mexico.

Melzerella lutzii, n. gen., n. sp. (Cerambycolidea-Lamiidae)

pelo Dr. A. da COSTA LIMA

Instituto Oswaldo Cruz, Rio de Janeiro

(Com 1 figura)

Numa pequena collecção de insectos brasileiros, sem indicação de procedencia, guardada no laboratorio do Dr. Adolpho Lutz, vi um bello lamiideo, de aspecto vistoso, que procurei determinar. Não tendo conseguido classificar-o em nenhum dos generos até agora conhecidos da tribu *Aerenicini* e depois de ter verificado que se tratava de uma nova especie desse grupo, enviei a Melzer, a nossa grande autoridade em carambycideos, uma photographia do especimen, perguntando-lhe se já tinha essa especie em sua collecção. Pretendia, caso a possuísse, reservar-lhe o direito de descreve-la, por não me interessarem especialmente os longicorneos. Como, porem, elle me respondeu dizendo que não a conhecia, resolvi descreve-la. Devo tambem dizer que não a encontrei nas collecções do Museo Nacional e do Museo Paulista, parecendo, assim, tratar-se de uma especie rara.

Melzerella*, gen. nov. *Aerenicinarum

Corpus elongatum, cylindricum. Caput non retractile; frons brevis, verticalis, antice quadrata, punctata, medio leviter sulcata, tuberculi antenniferi divergentes, profunde separati. Oculi magni, profunde emarginati, tenuiter granulati, supra fere contigui; lobi inferiores maximi, rotundati. Genae brevissimae.