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(73) REVISION OF THE ANT TRIBE

DACETINI: II.

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GLAMYROMYRMEX Wheeler AND CLOSELY RELATED SMALL GENERA

BY
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REVISION OF THE ANT TRIBE DACETINI: II. GLAMYROMYRMEX Wheeler AND CLOSELY RELATED SMALL GENERA[1]

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(Text-figures)

Included in *Glamyromyrmex* Wheeler are a handful of small, little-known short-mandibulate dacetines of the *Smithistruma* subcomplex. In my 1948 revision (*op. cit., infra*) I included *beebei* Wheeler, *wheeleri* M. R. Smith, and *convexiceps* (Santschi) in this group and defined the genus on the basis of the worker. That definition must now be enlarged to include the new subgenus *Chelystruma* described below.

G. (*Chelystruma*) *lilloana* new species proves to be a primitive form connecting *Glamyromyrmex* with the other members of the *Smithistruma* subcomplex. The affinities with *Smithistruma* seem to run through a series of genera (*Codiomyrmex* Wheeler, *Weberistruma* Brown) which are old and have become distinct in their own right. *Glamyromyrmex* and the two related monotypic genera *Codioxenus* Santschi and *Dorisidris* Brown represent an extreme development of this old line in which the usual densely punctulate sculpture of the majority of higher dacetines has given way to an almost or quite smooth and shining surface on head and alitrunk as well as on the gaster. This change has been accompanied by a shortening and broadening of the head, the lateral expansion largely due to development of the sublamelliform roof of the antennal scrobe on each side. Due to this development and to other changes, the flattened-pyriform shape so characteristic of most dacetines is largely lost. The mandibles have become shortened and thickened, and in all species but *lilloana*, the teeth are reduced in number from the *Smithistruma* pattern and individually enlarged.

[1] Part I of this series, on the dacetine fauna of Japan, China and Taiwan, appeared in Mushi, vol. 20, pp. 1–25, 1949.

Glamyromyrmex is a New World genus which has produced, but in a much more modest way, aberrant daughter genera with developments paralleling those of the Old World *Smithistruma* derivatives *Miccostruma* Brown and *Epitritus* Emery. A similar process seems to have taken place in both *Miccostruma* and *Codioxenus,* causing them to lose the small segments II and III of the antennal funiculus present in their respective parent genera. In like fashion, *Dorisidris* and *Epitritus* have been developing secondarily *Strumigenys*-like mandibles through slight lengthening, and loss and reduction of the serially arranged dentition of *Glamyromyrmex* and *Smithistruma* respectively.

Since the species listed here have for the most part been satisfactorily described and figured by the original authors, I shall not do more than list the references and a few comments where such seem necessary. It should be remembered in accepting measurements of previous authors that the total lengths given are not equivalent to those given in the present revision. All "total lengths" given here are determined by measuring separately the main axial lengths of head and mandibles, alitrunk, petiole, and postpetiole-gaster and adding these values together. This method gives the maximum outstretched length of the insect, and seems to afford the only escape from the hopelessly non-standard and inaccurate measurements made by some former authors. I believe that these older measurements are all too low. For explanation of measurements and indices, see my Part I of this revision (1949, Mushi, XX, p. 2).

The following abbreviations are used for institutions containing type material: [Santschi Coll.] Santschi Collection, Basle Museum, Switzerland. [MCZ] Museum of Comparative Zoology, Cambridge, Massachusetts. [USNM] United States National Museum, Washington, D. C.

Recognition

The members of the *Glamyromyrmex* group of genera may be distinguished from other "short-mandibulate" genera of the *Strumigenys* complex by their short, non-pyriform heads and especially by the more or less smooth, shining integument of the head and alitrunk and the extremely reduced and scanty pubescence-like

pilosity of at least the anterior part of the head. The size of all the species is small or very small, and the usual color is a dark ferrugineous to blackish-brown. All the known species are restricted to the Neotropical region, and all seem to be dwellers in the soil or soil cover. The food probably consists of the juices of small, cryptobiotic arthropods, but in view of the reduced pilosity and shining integument, it cannot be assumed that the habits are exactly those of *Smithistruma*.

Key to the Genera

1. Mandibles elongate-sublinear; inner borders near the apex with a few separated spiniform teeth ....**Dorisidris** Brown
   Mandibles shorter, subtriangular; inner borders serially dentate 2
2. Antennal funiculus 3-segmented .....**Codioxenus** Santschi
   Antennal funiculus 5-segmented .....**Glamyromyrmex** Wheeler

DORISIDRIS Brown

Dorisidris nitens (Santschi)

Strumigenys (*Codiomyrmex*) *nitens* Santschi, 1932, Revista de Ent., II, pp. 413–414, fig. 2, worker.

Dorisidris nitens Brown, 1948, Trans. Amer. Ent. Soc., LXXIV, pp. 116–117.

This species may be recognized by the oblong, straight-sided head and especially by the elongate, somewhat *Labidogenys*-like mandibles. There is apparently present a rounded basal lamella to the mandible, partly hidden under the clypeus. This form is known only from a single worker, the holotype, deposited in Santschi Coll.

Type locality.—Sierra del Rosario, Pinar del Rio, Cuba (A. Bierig). Genotype and only known species.

CODIOXENUS Santschi

Codioxenus simulans Santschi

Epitritus (*Codioxenus*) *simulans* Santschi, 1931, Revista de Ent., I, pp. 278–279, figs. 11, 12, worker.

Codioxenus simulans Brown, 1948, Trans. Amer. Ent. Soc., LXXIV, p. 123.

This species is superficially very similar to *Glamyromyrmex convexiceps* (Santschi), which came to the original author mixed with it in the same vial. Santschi thought that this signified some parasitic or other relationship between the two species. Closely re-

lated species of dacetines so often occur accidentally together, however, that we must wait for proof of Santschi's hypothesis by a direct observer. Known only from the type collection: 2 workers taken at Playa Marianao, Habana, Cuba (A. Bierig), deposited Santschi Coll. Genotype and only known species of the genus.

GLAMYROMYRMEX Wheeler

Glamyromyrmex Wheeler, 1915, Bull. Mus. Comp. Zool. Harvard, LIX, pp. 487–488, worker, female, male. Emery, 1922, Gen. Ins., Fasc. 174, p. 326. M. R. Smith, 1944, Proc Ent. Soc. Washington, XLVI, pp. 254–256. Brown, Trans. Amer. Ent. Soc., LXXIV, p. 116.

Strumigenys (*Codiomyrmex*) Santschi, 1931, Revista de Ent., I, p. 277, part (not *sensu* Emery 1922).

Codiomyrmex Weber, 1934, Revista de Ent., IV, p. 52, part (not *sensu* Wheeler 1916).

WORKER.—With the characters as mentioned above under "Recognition," with the additional qualifications of five-segmented funiculi and subtriangular, serially dentate mandibles. The apical funicular segment is usually if not always equal to or shorter than the remainder of the funiculus. The workers in the genus are quite different from one another, and though there are only four known species, general characterization is difficult.

FEMALE.—Known from only one species (*beebei* Wheeler), and there showing a considerable difference in the shape of the head compared to the accompanying workers. The head shape in this female is more like that of *wheeleri* M. R. Smith than like that of its own worker, but other details of body structure show that Wheeler was probably correct in assigning the two castes to the same species. This species shows a stronger difference between the female and worker castes than does any other species of dacetine ant known at present. It will be interesting to see, once the females of the other species are known, whether a similar difference is present throughout the genus.

MALE.—Wheeler characterized the male of one species, *beebei*; this proved to be much like those of other *Strumigenys* complex genera. The mandibles show an obtuse angle separating basal and apical borders, but toothless; apex acute. The sculpture is much like that of *Smithistruma* species. Wings (in both sexes) much like those of related genera; forewing with distal venation and $Rs + M$ aborted; most of $M + Cu$ lost, represented distally by a recurrent spur; A passing through a curve into *cu-a*, which in turn runs into the "basal vein" at the point where the recurrent spur comes off. The genitalia of *beebei* are shown in fig. 2.

GENOTYPE: *Glamyromyrmex beebei* Wheeler (Monobasic).

The four species included in the genus are strikingly different one from another—in fact, the differences are so great that one

could consider each the genotype of a separate genus or subgenus. I have separated the single new form, which seems more primitive and distinct from the group as a whole, as a new subgenotype. Not only does this arrangement emphasize relationships within the group, but it makes allowance for the almost certain future discovery of forms intermediate between presently known species. More extensive collecting in the New World tropics, especially Berlese funnel sifting, may be expected to greatly increase the number of species in *Glamyromyrmex*.

Subgenera (characterizations based on workers)

Glamyromyrmex *sensu stricto*

Anterior clypeal border transverse, concave or emarginate. Mandibles robust, usually short and with modified dentition, the teeth reduced in number and individually enlarged compared to the typical pattern seen in *Smithistruma*. Basal lamella more or less distorted compared to that of *Smithistruma*, but apparently present in some form in all the species. Alitrunk and nodes of abdominal pedicel not strongly depressed dorsally or with strong, sharp dorsolateral margins.

Subgenotype as for the genus.

Contains three known species which can be arranged in a series according to specialization away from the pattern shown by the other, probably more primitive, subgenus and species, *G.* (*Chelystruma*) *lilloana*. Of this series, *G.* (*G.*) *beebei* seems to be the most aberrant and *G.* (*G.*) *convexiceps* the least; *wheeleri* appears intermediate between the two last-named species.

Key to the Known Species of Glamyromyrmex sensu stricto: Workers

1. Anterior clypeal border deeply and rather narrowly excised in the middle; petiolar node seen in profile very low and gently rounded (Amazon Basin) ..... **beebei** Wheeler
   Anterior clypeal border transverse or shallowly and very broadly excised; petiolar node seen in profile forming a raised, narrowly rounded or subangular peak 2
2. Anterior clypeal border shallowly and broadly excised; posterior dorsum of head without erect hairs (Panama) ..... **wheeleri** M. R. Smith
   Anterior clypeal border transverse, approximately straight; posterior dorsum of head with a few erect hairs (Cuba) **convexiceps** (Santschi)

Glamyromyrmex (Glamyromyrmex) beebei Wheeler (Figure 2.)

Glamyromyrmex beebei Wheeler, 1915, Bull. Mus. Comp. Zool. Harvard, LIX, pp. 488–491, fig. 2, worker, female, male. Emery, 1922, Gen. Ins., Fasc. 174, p. 326. M. R. Smith, 1944, Proc. Ent. Soc. Washington, XLVI, pp. 254, 256. Brown, 1948, Trans. Amer. Ent. Soc., LXXIV, p. 116.

WORKER.—Well described and figured by Wheeler. Three worker types were remeasured.[2] Total length 1.85–2.26 mm., head length 0.54–0.61 mm., cephalic index 67–71, mandibulo-cephalic index 10.

Mandibles very short, convex and oriented almost dorso-ventrally. Basal mandibular border partially filled in by a broad crescentic translucent lamella which is the proximal extension of the basal lamella. Apical series of teeth eight in number, stout; teeth 1 and 2 (counting from base toward apex, basal lamella, of course, excluded) showing a bicuspid tendency in each, the rest long and acute, increasing gradually in length to tooth 5, which is the longest, and then decreasing toward the apex. The basal tooth or lamella fairly distinct from the apical series, with an oblique, chisel-like cutting edge.

Head seen from above with sides concave at the midlength. Dorsal surface of head convex in both directions to the clypeus, which slopes rather abruptly anteriorly, giving the head an appearance somewhat like that of certain ants (*Colobopsis*) which use the head to block the nest entrance. No erect hairs on cephalic dorsum.

FEMALE.—Total length 2.60–2.82 mm., head length 0.70–0.75 mm., cephalic index 92–95, mandibulo-cephalic index 14–16. Mandibles and anterior clypeal border much as in the worker, but head much broader and without concavity of the lateral borders; general shape more like that of *wheeleri* worker.

MALE.—Total length 2.0–2.1. Genitalia shown in fig. 2.

Type locality.—Pará [Belém], Brazil (W. Beebe). This is the only known record. Beebe removed the type series from jungle mould under a tree on the outskirts of Belém. In the same sample were numerous Collembola and 16 other species of ants, including a dealate female of *Strumigenys (Pyramica) subedentata* Mayr. Food is unknown, but springtails are the suspected prey. Most of the type series presently rests in the MCZ, while other type specimens are in the USNM.

Glamyromyrmex (Glamyromyrmex) wheeleri M. R. Smith

Glamyromyrmex wheeleri M. R. Smith, 1944, Proc. Ent. Soc. Washington, XLIV, pp. 254–256, figs. 1, 2, worker. Brown, 1948, Trans. Amer. Ent. Soc., LXXIV, p. 116.

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[2] See note on measurement in introduction to this part. All indices on percentage basis.

WORKER.—Measured from a paratype: total length 2.10 mm., head length 0.52 mm., alitrunk length 0.54 mm., cephalic index 96, mandibulo-cephalic index 17.

Only the worker is known, and this has been very expertly described and figured by Smith. I would disagree with his measurement of the length, which is low if the system of measurements used in this revision is followed: "Length 1.6 mm.", according to the original description. No erect hairs on the dorsum of the head. Subocular ridges each ending anteriorly with an acute, ventrally directed tooth, which is found also in an undescribed African *Codiomyrmex* and is therefore probably a character of some phylogenetic significance. Pronotum feebly submarginate.

Originally described from the holotype [USNM No. 56903] and an additional paratype worker, taken on Barro Colorado Island, Panama Canal Zone (J. Zetek). These are the only specimens reported to date. The species is probably a dweller in the soil cover. Paratype in MCZ.

Glamyromyrmex (Glamyromyrmex) convexiceps (Santschi)

Strumigenys (Codiomyrmex) convexiceps Santschi, 1931, Revista de Ent., I, p. 277, figs. 9, 10, worker.

Codiomyrmex convexiceps Weber, 1934, Revista de Ent., IV, p. 52.

Glamyromyrmex convexiceps Brown, 1948, Trans. Amer. Ent. Soc., LXXIV, pp. 115–116.

WORKER.—The length Santschi gives ("1.6 mm.") is probably a little too small. The sides of the head are gently convex, slightly convergent anteriorly. The clypeus is broadly triangular, with an approximately straight anterior border and narrowly rounded lateral angles. The mandibles are robust and anteriorly projecting with "6 or 7" teeth, the basalmost probably being the basal lamella. There are two or three pairs of erect hairs on the extreme occiput, a few on the thorax, petiole and postpetiole, all slender. Color "deep brown."

Known only from the three cotype workers, Santschi Coll. Type locality: Playa Marianao, Habana, Cuba (A. Bierig). Mixed in the original collector's vial were workers of the superficially similar *Codioxenus simulans.*

Chelystruma new subgenus

WORKER.—Characters as in *Glamyromyrmex* s. str., except for the following differences:

1. Anterior clypeal border convex and projecting.

2. Mandibles robust and convex, but with dentition as in *Smithistruma*: basal lamella and 12 teeth in the apical series (7 principal teeth, 4 denticles, and an acute apical tooth).

3. Alitrunk, including pronotum, and nodes depressed and with strong dorsolateral margins.

GENOTYPE: *Glamyromyrmex (Chelystruma) lilloana* new species.

Glamyromyrmex (Chelystruma) lilloana new species (Figure 1.)

HOLOTYPE WORKER.—Total length 1.91 mm., head length 0.51 mm., alitrunk length 0.47, cephalic index 98, mandibulo-cephalic index 19. Maximum width of pronotum 0.34 mm.

Head broad shield-shaped, broadest at about the posterior third, dorsal surface gently convex in both directions; posterior excision broadly arcuate, rather shallow. Dorsolateral borders of the head broadly extended and overhanging the deep antennal scrobes. Eyes small, consisting of less than a dozen facets, situated a little behind the midlength of the head astride the ventral borders of the scrobes. Subocular lamina without a tooth anteroventrally.

Antennae short; scapes very faintly S-shaped, a bit more than half as long as the funiculi, slender basally and with the distal ⅔ moderately incrassate, broadest at about the midlength; funiculus short and thick as in other *Glamyromyrmex* and related genera, the apical segment equal in length to the remainder of the funiculus; segments I and IV subequal, but the latter much the broadest; II and III subequal, together approximately equalling IV.

Clypeus ⅓ broader than long, weakly convex, its anterior apron projecting and convex, forming a blunt, rounded obtuse angle in the middle anteriorly. Mandibles stout, convex, strongly projecting and apically arched ventrad; outer borders convex in outline. Basal lamella translucent, fairly narrowly rounded, proximal border sloping gently, distal border dropping abruptly to meet the base of the first tooth of the apical series without a diastema intervening; base of lamella about as broad as the space occupied by the first three teeth of the apical series. Apical series of the typical *Smithistruma* pattern, with 7 long, acute teeth, tooth 3 longest, 4–7 decreasing in length; four rather irregularly fused, subacute denticulae, followed by the long, acute apical tooth, which is about as long as tooth 3 of the principal apical series. At full mandibular closure, opposing apical teeth cross, each projecting laterally for some distance.

Alitrunk with strongly depressed and very sharply marginate dorsum, seen in profile evenly and gently arched from the anterior pronotal border to the posterior mesonotal border. Pronotum broadest anteriorly, ⅔ as broad as the head; anterior border rounded, cultrate, lateral margins sharp, overhanging the sides, humeral angles bluntly rounded. Mesonotum broad-oval, about half as wide as the pronotum; promesonotal suture obscure,

arcuate; posterior mesonotal border subtruncate, raised slightly above the short, posteriorly sloping dorsal surface of the propodeum. Seen from above, the mesonoto-propodeal constriction strong. Propodeal dorsum short and narrow, continuing the lateral margins onto the propodeal teeth. These teeth diverging behind, lamellate, compressed, about half as long as their interbasal distance; seen from the side acute, translucent, with straight horizontal dorsal borders, continued below as translucent infradental lamellae, each of which widens below to form an angular ventral tooth or plate.

Petiolar peduncle fairly long; posterodorsal disc flattened, marginate anteriorly and laterally, twice as broad as long, with weakly convex surface, the anterior border straight and forming a rather sharp summit if viewed from the side. Sides of node converging behind and each giving rise to a broad, thin, clear, leaf-like lamelliform lobe directed laterally, posteriorly, and deflected a bit below the horizontal, apex narrowly rounded. A band of this same subspongiform material running medially along the midventral line of the petiolar peduncle. Postpetiolar node subrectangular, the posterior border rounded, almost twice as broad anteriorly as long and about ⅓ again as broad as the petiolar node, dorsal surface rather strongly convex; completely surrounded by a thin, vesiculate lamelliform or subspongiform horizontal extension much like the appendages of the petiole in consistency, the transverse anterior border narrow, the lateral lobes sweeping posteriorly and broadening to the anterolateral gastric margins where each ends in an acute apex. Postpetiole below with luxuriant festoons of subspongiform tissue, which meet a spongiform pad on the anteroventral gastric surface. Gaster broad-oval, somewhat depressed above; anterior border transverse, bordered by a thin sinuate lamella. First gastric sternite on each side weakly impressed or concave anteriorly; dorsolateral borders of the first gastric tergite bluntly marginate along the anterior half.

Body in general smooth and highly shining; with very feeble, dilute subreticulation on the cephalic dorsum and weak indications of longitudinal striation on the alitrunk dorsum which do little to interfere with the high polish of the integument. Propodeum, especially the declivity, transversely striate. Basal gastric costulae straight, rather fine and long, extending about half the length of the first gastric tergite, radiating from bilateral sources, with a smooth, narrow median space between the two bundles smooth and shining, as is the remainder of the gastric surface. Legs shining, but antennae and mandibles weakly and densely punctulate, only feebly shining.

Erect pilosity scanty, consisting of erect, straight or slightly curved bristle-like hairs: one pair on the occiput, a pair of curved ones on the humeral angles, three straight ones on each dorsolateral promesonotal margin, a few on the dorsal surfaces of each node, and a more abundant, but still sparse, growth on the gastric dorsum, where they are longest and straightest on the posterior dorsum.

Except for the erect occipital pair, the dorsal cephalic pilosity is reduced to a dilute and very inconspicuous pubescence, closely appressed and anteromedially directed, coarser on the posterior clypeus and becoming very fine

and dense along the anterior clypeal border. Legs with abundant, rather long, stout subreclinate hairs; antennae and mandibles densely clothed with short, fine appressed hairs.

Color dark brown; petiole and postpetiole lighter and more yellowish, legs and antennae sordid yellow, appendages of petiole and postpetiole yellowish, of ventral surface of gaster, more whitish.

Holotype worker, with the four paratypes described below, taken in the garden of the Instituto Miguél Lillo, Tucumán, Argentina. Holotype and two paratypes to be returned to Dr. Nicolás Kusnezov, the collector of these specimens, for inclusion in the collections of the Instituto on whose grounds they were taken. Remaining two paratypes deposited in MCZ and USNM.

Paratypes.—The four workers sent with the holotype show variation of visible degree only in slight differences of size and proportion. Total length 1.88–2.03 mm., head length 0.51–0.55 mm., alitrunk length 0.46–0.53 mm., cephalic index 96–98, mandibulocephalic index 19–20.

The female caste is unknown. Males taken at Tucumán more recently, but not associated with workers or females, are possibly of this species. When association is certified, these specimens should be described—but certainly not before.

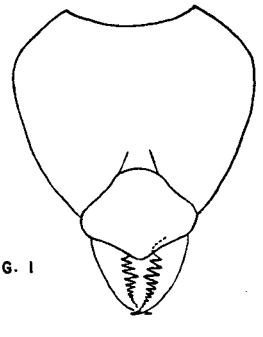

FIG. 1

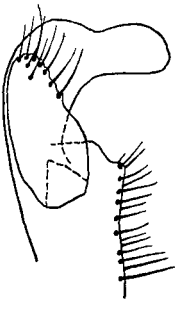

FIG. 2

Fig. 1. *Glamyromyrmex* (*Chelystruma*) *lilloana* new subgenus and species, head of worker, facial view. (Tucumán, Argentina.)

Fig. 2. *Glamyromyrmex* s. str. *beebei* Wheeler, volsella of male genitalia. (Pará, Brazil.)

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