

THREE NEW ANTS OF THE GENUS *STRUMIGENYS* FROM
COLOMBIA

(Hym. Formicidae)

BY

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(with 7 figures)

Below are described three new species of ants from Colombia, related to *Strumigenys subdentata* Mayr, from southern Brazil. These specimens were received from Dr. Wm. L. Brown, Jr., Associate Curator of Insects, Museum of Comparative Zoology, Harvard University, who kindly let me describe them and also furnished explanatory notes. In obtaining the measurements and indices, I have closely followed Dr. Brown's method, which is explained to a great detail in his Dacetini revision (Brown, 1953, pp. 7 - 15). I have used his abbreviations, which may be briefly explained, as follows: TL, total length of insect, obtained synthetically by measuring individually and adding the tegmata of the body, including the outstretched mandibles; ML, distance to which closed mandibles extend beyond most anterior point of clypeal margin; WL, length of thorax measured along a diagonal in side view. The indices are given as percentages of HL: the cephalic index, or CI, being the maximum measurable head width/HL x 100, while the mandibulo-cephalic index, or MI, equals ML/HL x 100. I wish to express at this place my sincere gratitude to Dr. Brown, for the privilege of studying these interesting ants.

Strumigenys connectens, sp. n.

(Figs. 1, 2, 3)

WORKER (Holotype). — TL 2.53 mm; HL 0.60 mm; ML 0.33 mm; WL 0.64 mm; CI 83; MI 54. — Yellowish ferruginous; mandibles, antennae and legs dirty yellowish.

Head (Fig. 3) opaque, subcordate, somewhat depressed. Clypeus triangular, flat, its anterior border transverse, almost straight, with a vestigial median convexity, its lateral corners curving to meet the preocular lamellae, its posterolateral sutures vestigial, its postero-median angle ill-defined. Frontal area not delimited nor visibly impressed. Frontal carinae anteriorly broadly lamellate, covering completely the antennal insertions, their corner rounded, their lateral borders subparallel for a short distance, continuing backwards as a sharply marginate, at most narrowly lamellate, posteriorly diverging, slightly convex, lateral border of the head, being likewise the superior border of the antennal scrobe. The latter moderately excavate, as long as the scape, the anterior third of its inferior border well marked by the projecting preocular lamellae, the remaining two thirds of the border immarginate. Occipital border relatively moderately, yet noticeably excised mesially, with correspondingly moderately projecting occipital lobes, the mesial corner of which is subangulate. Anterolateral borders of occipital lobes very gently convex, almost parallel. Eyes moderate in size, invisible from above, moderately convex, with about 5 coarse facets in the greatest diameter. Central axis of vision facing principally laterad, slightly cephalad. Dorsum of head gently and uniformly convex.

Antennal scape opaque (length 0.33 mm), noticeably incrassated subbasally, at which point the anterior border forms a rather abrupt curvature, nearly an angle, tapering of from this point both basad and distad. Funiculus (length 0.49 mm), with a slender apical segment (V), which is slightly longer than segments I — IV combined. Segment IV very slightly longer than segments I; this segment as long as segments II and III combined, the latter two segments about as long as broad.

Mandibles shiny, porrect; as seen from the side slightly tilted upward; inserted rather far apart from each other, the distance between their inner borders, at the point of emergence from beneath the anterior clypeal border, subequal to their greatest width. Blades rather stout and broad, their outer border straight, their inner border convex, broadest near the half of the length. Apical third of inner border lacking a series of minute denticles, having instead three distinct, separated preapical teeth; the proximal tooth smallest, triangular, often bifid, or composed of two smaller denticles on one of the mandibular blades, followed distad by a much longer, pointed, slightly curved tooth, and, next to the apical fork by a third again smaller, pointed, preapical tooth. Apical fork relatively well developed, both teeth somewhat diverging, unequal in length, the upper tooth longer, slender, pointed; the lower tooth noticeably

shorter, nearly as long as the distance between the mandibles at their base. Between these two teeth two minute, rudimentary intercalary denticles.

Thorax opaque, moderately slender and elongate, broadest across pronotum. In profile, the dorsum is gently convex at the level of the pronotum, slightly concave at the posterior half of the mesonotum, in front of the obsolete metanotal groove, again a little convex at the basal face of epinotum. Anterior border of pronotum strongly marginate and convex, not forming a projecting angle mesially. Scapular angle marked only by a vestigial piliferous tubercle. Pronotum submarginate posterolaterally. Promesonotal and mesoepinotal sutures (metanotal groove) obsolete. Basal face of epinotum submarginate laterally. Epinotal teeth moderately long and slender, acute, obliquely elevated, slightly divergent, somewhat shorter than their distance between the center of the bases. Infradental lamellae low, extending to the bottom of the declivous face.

Peduncular segments (Fig. 2) opaque. Petiole with a slender peduncle, slightly longer than the node proper, the latter subglobose above, with a posterior, narrow, spongiform border, and a posterolateral, angulate, better developed spongiform lobe on each side. Midventrally with a longitudinal carina, which becomes foliaceous and hyaline at the posterior corner. Postpetiole transversely elliptical, its disc one and a half times as broad as long, convex; its anterior border with a narrow, spongiform crest. Spongiform appendages narrow on the posterior border, but well developed lateroventrally, as shown on figs. 1, 2.

Gaster shiny, more convex ventrally than dorsally, with an anterior spongiform, narrow margin dorsally, and a moderately developed anteroventral pad of tangled spongiform pilosity. Basal costulae of first tergite sharp and strong, about twelve in number, spaced, short, subequal in length.

Head, scape, thorax, femora, tibiae, petiole and postpetiole sharply and rather coarsely punctured, the rims of the pits being sharp, forming a densely knit reticule of rugosities. Mandibles with vanishing sculpture, almost smooth, except for the sparse piligerous punctures. Gaster smooth and shiny, with sparse, piligerous punctures.

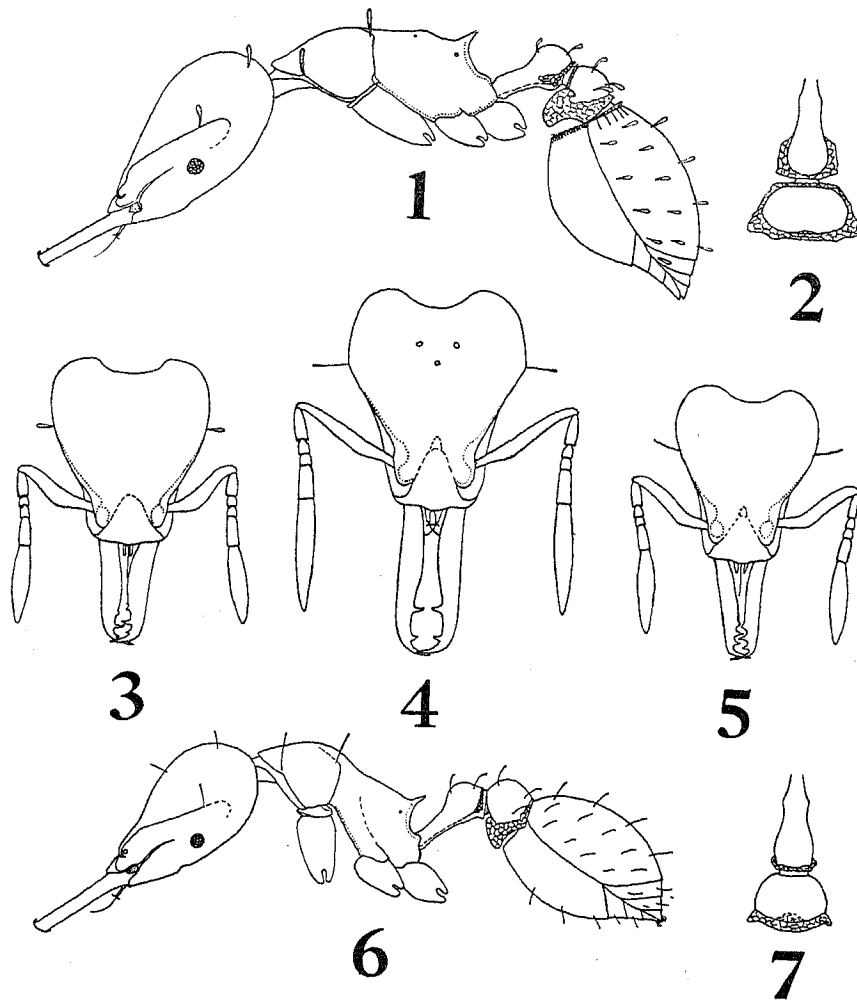
Ground pilosity rather conspicuous on dorsum and sides of head, including the clypeus, consisting of short, decumbent, spatulate setae, curved anteriorly. Anterior border of clypeus with a row of about 12 spatulate, curved, projecting setae, the innermost pair by far the longest. Anterior border of scape with a row of 7 projecting broadly spatulate setae, the basal two of which curved distad,

the third forward and downward, the remaining mostly basad. A much longer, rather stiff, standing spatulate hair near the posterior end of the upper border of the antennal scrobe, one on each of the occipital lobes, and one on the scapular and posterior angles of pronotum. Ground pilosity of dorsum of thorax similar to that of head, but much sparser; rare on epinotum. Petiole with 4, postpetiole with 6, inclined, spatulate setae. Dorsum of gaster with approximately 30, rather stiff, more or less erect spatulate setae. Femora and tibiae with sparse, short, subappressed hairs, most of which are thickened or broadened at tip. Mandibles, ventral side of head, tarsi and ventroapical portions of gaster with the usual short, finer, and simpler pilosity. Dorsal face of mandibles with a row of about 10 sense hair, projecting obliquely forward beyond the inner border of the mandibles. These hairs are broader, but with a pointed tip.

Female and male. — Unknown.

Holotype worker taken 7 miles west of Alban, Cundinamarca Province, Colombia, on March 15, 1955, by E. J. Schlinger and E. S. Ross, in the collection of the California Academy of Science.

Paratype workers: 6 specimens, U. S. Plant Quarantine interception at S. Francisco, California, August 22, 1945, on imported orchid *Cattleya mendeli*, from Colombia, U. S. National Museum, number 45-16312, in the U. S. National Museum, Museum of Comparative Zoology at Harvard University, and in my own. Their critical measurements are as follows: TL 2.70 — 2.90 mm; HL 0.64 — 0.65 mm; HL 0.35 — 0.37 mm; WL 0.69 — 0.73 mm; CI 81 — 86; MI 53 — 56. They differ from the holotype specimen in slightly larger measurements (excluding the indices!), lighter color (light yellowish brown). The spatulate hairs on the anterior border of the scape are variable as regards the direction in which points the recurved apical portion of these hairs: the tips of the two apical hairs generally pointing distad. Quite remarkable is the variation concerning the preapical dentition of the mandibles. As pointed out in the description of the holotype, the proximal preapical tooth may either consist of a single, short, triangular tooth, or may be replaced by two still smaller teeth, standing close together or even fused at their bases (bifid condition). The same condition is also obtained in the paratype series, which comprises specimens with a single proximal preapical tooth on each of the mandibular blades, other with a doubled proximal preapical tooth on one of the mandibles, other with doubled proximal preapical tooth on each of the mandibular blades. One specimen is quite divergent in having the proximal preapical tooth of one mandible not only split in two, but also widely separated from each other, the ante-



Strumigenys connectens, sp. n. — Fig. 1 - Worker, in profile. Fig. 2 - Idem, peduncular segments in dorsal view. Fig. 3 - Idem, head in dorsal view. *Strumigenys xenognatha*, sp. n., — Fig. 4 - Female, head in dorsal view. *Strumigenys laevipleura*, sp. n. — Fig. 5 - Worker, head in dorsal view. Fig. 6 - Idem, worker in profile. Fig. 7 - Idem, peduncular segments in dorsal view.

riormost minute denticle removed basad toward the mandibular insertion. The two distal preapical teeth, however, appear to be more constant, not showing any significant variability. Finally the spongiform appendages of the paratype series are still better deve-

loped on the postpetiole, riming also the sides of the disc, when seen in dorsal view. The appended figures for this species have been drawn from a paratype specimen.

DISCUSSION. — The present species belongs to the so-called "Pyramica" group, having as its closest relative *Str. subdentata* Mayr, from which it differs rather strikingly in the following features:

1. Mandibles with three to four distinctly formed and separated preapical teeth, instead of a series of minute denticles.
2. Eyes completely invisible in dorsal view.
3. Petiole and principally postpetiole with well developed spongiform appendages.
4. Thorax with only 4 standing spatulate hairs, which are confined to the pronotum.
5. First gastric tergite smooth and shiny.

Strumigenys laevipleura, sp. n.

(Figs. 5, 6, 7)

WORKER (Holotype). — TL 2.73 mm; HL 0.62 mm; ML 0.36 mm; WL 0.65 mm; CI 79; MI 56. — Yellowish-brown; funiculi and legs dirty yellowish.

Resembling the preceding *Str. connectens*, but exhibiting the following significant differences:

1. Head (Fig. 5) slightly more elongate, slightly more constricted in front of the occipital lobes. Frontal area impressed, more or less shiny. Scape not noticeably broadened subbasally, but with a similar bend, its size relatively slightly longer (length 0.36 mm).
2. Mandibular blades less tilted, more linear, narrower, relatively slightly longer, their inner border less convex. Preapical dentition consisting of three teeth of different shape; the proximal tooth short and triangular, the two distal teeth subequal in length longer than the proximal tooth, the second slightly longer than the third, both pointed at tip. Intercalary teeth of apical fork rudimentary the upper soldered to the base of the dorsal tooth of the fork the lower vestigial and scarcely distinguishable.
3. Posterior end of basal face of epinotum a bit less concave in front of the spines. Mesometapleural suture a little more distinct. Mesopleura and metapleura smooth and shiny.
4. Petiolar peduncle (Fig. 7) slightly longer. Spongiform appendages rather rudimentary on petiolar node, likewise less developed on postpetiole, which lacks an anterior spongiform carina. Dorsum of postpetiolar disk smooth and shiny.

5. Gaster smooth and shining, but lacking the anterior spongiform transverse carina and the basal longitudinal costulae on the first tergite, and a noticeable pad of spongiform hairs anteriorly on the first sternite.

6. General body sculpture, except for the previously mentioned shiny areas, similar to that of preceding species, but distinctly more superficial, leaving the integument somewhat more shiny, not strictly opaque.

7. Ground pilosity similar to that of *connectens*, slightly rarer and sparser, the spatulate decumbent hairs being also a bit finer on head and thorax. Standing hair completely different, being setiform, long, slightly thickened at apex, following the same arrangement as in *connectens*, but there are three pairs on head, as shown in figure 6, instead of two. Spatulate hairs arising from anterior border of scape are 6 in number, their tips less incrassated and less distinctly reflexed.

Female and male. — Unknown.

Holotype. — 1 worker, from Colombia, Medellin, U. S. Plant Quarantine interception in S. Francisco, California, March 22, 1946, on orchid *Miltonia* sp., in the U. S. National Museum, n. 46-4823.

Paratypes: 2 workers, with the same data as for holotype, deposited in the U. S. National Museum and the Museum of Comparative Zoology. Their critical measurements are as follows: TL 2.63 — 2.72 mm; HL 0.58 — 0.59 mm; ML 0.33 — 0.35 mm; WL 0.65 — 0.66 mm; CI 81 — 82; MI 56 — 57. These specimens agree with the holotype in all essential features of livery and structure.

DISCUSSION. — This species has as its closest known relative the preceding *connectens*, from which it has already been differentiated in the foregoing description. The preapical dentition of the mandibles, the sculpture of the body, the pilosity, the development of the spongiform appendages of the peduncular segments, and the absence of basal costulae on the first gastric tergite distinguish it from *subdentata*.

Strumigenys xenognatha, sp. n.

(Fig. 4)

FEMALE (Holotype). — TL 3.25 mm; HL 0.65 mm; ML 0.41 mm; WL 0.84 mm; CI 79; MI 63.

This female not only resembles very closely the workers just described as *Str. laevipectus*, but was even captured together with the very same workers by U. S. Plant Quarantine inspectors, as indicated by the identical collecting label and number. However,

in spite of these facts, which strongly suggest specific identity of both workers and females, I intend, nevertheless to propose the latter as a discrete species, on account of several conspicuously divergent features, which surpass by far the known kind of differences between females and workers of the same species in the genus *Strumigenys*.

1. Mandibular blades resembling in general shape more those of *connectens* than those of *laevipleura*, but narrower than in *connectens* and decidedly longer than in both of the previously mentioned species (mandibular index: 63!). Apical fork and intercalary teeth as in *laevipleura*. Preapical dentition quite peculiar, consisting of only two conspicuous, pointed, widely spaced teeth, the proximal being slightly longer.

2. Lateral borders of occipital lobes a bit divergent cephalad, forming a very obtuse angle at the point of junction with the frontal carinae.

3. Scape almost linear, with a very slight subbasal incrasation, lacking a noticeable bend. Apical funicular segment (V) distinctly longer than segments I-IV combined.

All other characters as in *laevipleura*, except for the differences of the caste, especially having the same kind and number of standing hair on head, peduncular segments and gaster (but only one pair on pronotum), the shiny thoracic pleura and disk of post-petiole, and lacking the basal longitudinal costulae on the first gastric tergite. The sculpture of the body is slightly coarser, but not as coarse as in *connectens*, and the spongiform appendages of the peduncular segments are a bit better developed than in *laevipleura*.

Worker and Male. — Unknown.

Holotype: 1 female, from Colombia, Medellin, U. S. Plant Quarantine interception, March 22, 1946, San Francisco, California, on orchid *Miltonia* sp., in the U. S. National Museum, n. 46-4823.

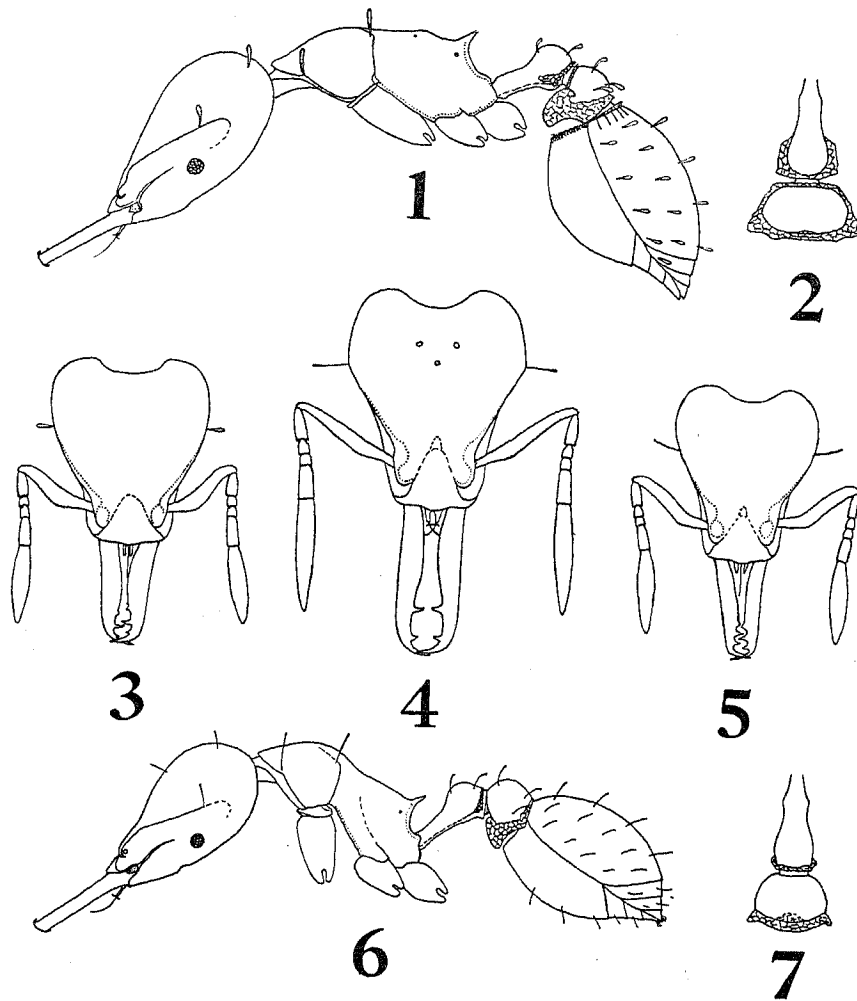
DISCUSSION. — The precise status of this form remains doubtful. After all it still could be the female of *laevipleura*. However, same data in plant quarantine interceptions means very little. *Str. laevipleura* and *xenognatha* may even belong to different nest series. Or the female of *xenognatha* could have been living as a parasite in the nest of *laevipleura*, in the fashion of *Strumigenys xenos* of Australia, which lives in social parasitism with *Str. perplexa* (Cf. Brown, 1955, pp. 181-186).

SYSTEMATIC NOTE. — All three of the just described species belong to the group of *Pyramica*, which was left in subgeneric standing by Brown in his preliminary revision of the *Dacetini* in

1948 (pp. 110-111). Indeed, they agree in the main distinguishing features, having a relatively short apical fork on the mandibles (similar to that of *subdentata*), with the ventralmost of the large teeth distinctly shorter than the dorsal, and the mandibles widely spaced at the point of emergence from under the anterior clypeal border. The interval equals or exceeds the length of the ventralmost tooth. Also some of the subsidiary characters, as given by Brown (l.c.) apply to these species. The inner border of the mandibles is more or less conspicuously convex; the postpetiolar node is transversely elliptical, and the size does not exceed significantly that of *subdentata*. They differ, however, in having three or two distinct, spaced preapical teeth on the mandibles, instead of the series of 3-8 small denticles, and in having relatively well developed spongiform appendages on the peduncular segments. Dr. Brown (in litt.) tells me, that he does not uphold the subgenus *Pyramica* any more, precisely on account of the characters of the presently described species. While I intend to leave the systematic treatment of these forms for his forthcoming revisionary studies, I already neglected to assign the new species to any of the two subgenera of *Strumigenys*.

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