THE NEOTROPICAL SPECIES OF THE ANT GENUS STRUMIGENYS FR. SMITH: GROUP OF SALIENS MAYR

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This is part of a continuing revision of the New World species of the dacetine ant genus *Strumigenys* Fr. Smith. Previous parts may be found in this Journal (Vol. 61, pp. 53-59 and 101-110. 1953); these contain explanations of the abbreviations for measurements and indices used in all sections. Other sections are under press or being prepared; the final section will include a key to the workers of all species of the genus of the Western Hemisphere.

The present section deals with two species surely belonging to the *mandibularis* series: *S. saliens* Mayr and *S. borgmeieri* n. sp., and a third, *S. trinidadensis* Wheeler, that may be regarded as a connecting form between the *mandibularis* series and the group of species related to *S. hindenburgi* Forel. For the present, the three species *saliens, borgmeieri,* and *trinidadensis* may be considered to make up the *saliens* group. *S. saliens* itself appears to be intermediate in many respects between two *mandibularis* series groups: the group of *smithii* Forel and the group of *cordovensis* Mayr.

Strumigenys saliens Mayr

Strumigenys saliens Mayr, 1887, Verh. zool.-bot. Ges. Wien 37: 574, worker, female (original description). ?Emery, 1890, Bull. Soc. Ent. Ital. 22: pl. 7, fig. 1, worker. (*Nec* Wheeler, 1916, Bull. Mus. Comp. Zool. 60: 326; 1922, Amer. Mus. Novit. 45: 12; Trinidad records based on a damaged example of *S. trinidadensis* in MCZ).

Strumigenys saliens var. *procera* Emery, 1894, Bull. Soc. Ent. Ital. 26: 215, pl. 1, fig. 9, female. NEW SYNONYMY.

Strumigenys saliens var. *angusticeps* Forel, 1912, Mém. Soc. Ent. Belg.

19: 198, worker. NEW SYNONYMY.

WORKER: TL 3.5-4.1, HL 0.81-0.95, ML 0.50-0.60, WL 0.82-0.97 mm.; CI 69-77, MI 60-65. Measurements made on 4 cotype workers of *S. saliens,* 3 cotype workers of var. *angusticeps,* and 31 other workers. At least 12 nest series from southeastern Brazil and northeastern Argentina are represented.

In most general characters, this species is intermediate between the *smithii* and *cordovensis* groups of the *mandibularis* series. Emery's figure of 1890 illustrates satisfactorily the head shape and mandibular dentition as seen in the *saliens* types, but this figure exaggerates the relative length of the mandibles to a marked degree. Normal variation in this species is moderate, chiefly involving the size and spacing of the two slender preapical teeth; the distal of these two teeth usually near the apical fifth of ML, its length ¾ or less that of the dorsal tooth of apical fork; proximal preapical tooth as long as or shorter than the distal. The preapical teeth are separated by a distance equalling their lengths or slightly more. The normal dentitional variation includes forms like that of the female described as var. *procera* by Emery, and there seems to be no good reason to retain a separate name for Emery's variant at this time. (The types of Forel's var. *angusticeps* match the *saliens* types very closely in all characters, and it seems that Forel drew non-existent distinctions.)

The apical fork of the mandible has the dorsal tooth slender, 0.10 to 0.13 mm. long, slightly longer than its ventral mate. An intercalary tooth present, large and spiniform, ca. ⅔ the length of the dorsal tooth.

General plan of alitrunk as in *cordovensis* and *smithii,* but the propodeal declivity steeper and more sharply angled against the gently but distinctly convex propodeal dorsum. Upper and lower propodeal teeth on a single side remote, slender, acute, somewhat elevated, joined at their extreme bases only by a very low, concave, cariniform lamella; upper pair of teeth longer than lowers and usually about half as long as the distance between the centers of their bases, seen from above.

Petiolar peduncle slender, about as long as its node. Seen from above, free portion of node (including anterior slope) more or less approximately as long as broad. Midventral spongiform band rather uniform in depth, fairly well developed. Node distinct, with a sloping but convex anterior face, evenly rounded above and with only the posterodorsal and posterolateral surfaces covered by the spongiform band. Postpetiolar node transversely ovate, ca. 1.4 times as broad as long (average); disc decidedly convex, densely punctulate, opaque, with a few feeble rugulæ, its spongiform appendages well developed, but less so than in *smithii.*

Gastric costulæ few, weak, widely spaced and never extending more than 1/5 the length of the first tergite; usually much shorter, and in some series

reduced to indistinct vestiges. Body largely densely reticulo-punctulate, opaque; gaster and lower mesopleura smooth and shining. Pilosity much as in *smithii.* Color rather uniform medium ferrugineous, appendages lighter; internidal variation slight.

FEMALE: a specimen from the type series, now in the British Museum, was kindly measured by Mr. G E. J. Nixon; I have also measured 4 additional specimens from Brazilian localities. Examples from Nova Petropolis most resemble Emery's figure of var. *procera.*

TL 4.2-4.5, HL 0.88-0.93, ML 0.50-0.53, WL 0.99-1.02 mm.; CI 73-82, MI 57-61; forewing L 3 mm. or slightly more. Eyes very large and convex. Mesonotum evenly and densely punctulate, with a feeble median sulcus and a few long, posteriorly-inclined hairs. Nearly all of mesopleura smooth and shining. Petiolar node broader than long and flattened obliquely from in front and above, as in the *smithii* worker, but a little less extreme. Color much as in worker. Forewing venation: Rs+M and M distal to this lacking, as are also cu-a and m-cu. Rs weak; rest of venation fairly well preserved. Posterior wing with four hamuli. Male unknown to me.

Material studied: BRAZIL: Santa Caterina : Blumenau (Hetschko), *saliens* cotypes [syntypes] [Naturhistorisches Museum, Wien; British Museum (Natural History); D. Zoologia, São Paulo; MCZ; USNM]. Blumenau (F. Müller). Nova Teutonia (F. Plaumann). Hamonia (Leuderwaldt). Paraná: Rio Negro (Reichensperger), two series. Rio Grande do Sul: Nova Petropolis (P. Buck). Rio de Janeiro (State and District): Rio (Göldi), cotypes of var. *angusticeps* [syntypes] [Museum d'Histoire Naturelle, Geneva; MCZ]. Pico Tijuca; Corcovado (H.S. Lopes). The type of var. *procera* [not studied; in Museo Civico di Storia Naturale, Genova] came from Novo Friburgo (collector unknown). ARGENTINA: Misiones: Loreto (A. Ogloblin).

So far, *S. saliens* has been collected only in southeastern Brazil and the Paraná Basin. It nests in (and beneath the bark of) rotten logs, according to the scanty collecting data available. *S. saliens* is readily distinguished from allied species by means of its fairly large size, proportions of head and mandibles, its distinctive propodeal armament with reduced infradental lamellae, and the shape and sculpture of its postpetiolar disc.

Strumigenys borgmeieri, n. sp.

WORKER: With the general characters of the *smithii, saliens* and *cordovensis*

groups of the *mandibularis* series, but differing from all in its much narrower head, tapered mandibles with apically crowded preapical dentition, different form of petiolar and postpetiolar nodes and spongiform appendages, different pilosity pattern and in its generally very slender body build.

TL 3.3, HL 0.74, ML 0.52, WL 0.77 mm.; CI 65, MI 67. Head evenly convex above, narrow, occipital lobes narrowly rounded behind and only gently convex laterally; posterior excision semicircular, deep. Eyes moderately large, convex, laterally oriented. Clypeus triangular, with gently arcuate anterior border; tumulus low and round, placed just anterior to the center of the clypeal disc. Antennal scape 0.51 mm. long, very slightly curved, very gently incrassate away from the base, the thickest point between the midlength and apex. Funiculus 0.81 mm. long, apical segment (V) 0.37 mm. long, segment IV 0.20 mm. long, segment II longer than III, II + III about equal to the length of I (0.12 mm.).

Mandibles straight and slender, inner borders parallel when closed; external borders drawn in slightly at their insertions, thickest just distad of the insertions, and from this point the shafts are evenly tapered to their apices. Elements of dentition of the same number and general relationships as in *saliens* and the other *mandibularis* series species, all teeth slender and spiniform. Dorsal and ventral teeth of apical fork approximately equal (ca. 0.06 mm.), intercalary tooth closest to the ventral tooth and about 2/3 its length. Distal preapical tooth about 4/5 the length of the dorsal apical and separated from it by a distance very slightly greater than the length of the latter (0.06-0.07 mm.). The entire apical and preapical armament is crowded into scarely more than the apical fifth of the exposed mandibular length. The proximal preapical tooth slightly shorter than the distal preapical and separated from the latter by about its own length (0.04-0.05 mm.). Oblique setæ of inner mandibular borders, found in the other *mandibularis* series species, are also well developed in *borgmeieri.* Labral lobes very small, tuberculiform.

Alitrunk much as in *smithii,* but much more slender and with a less pronounced metanotal groove and constriction; dorsum of propodeum only very feebly convex. Seen from above, anterior pronotal margin distinct and carinate, entire, evenly and rather narrowly rounded; humeral angles undeveloped, their piligerous tubercles inconspicuous. Median dorsal pronotal carina and promesonotal suture obsolete. Propodeal lamellæ small, translucent, forming upper and lower short, apically rounded teeth, the lowers slightly the larger; lamella connecting upper tooth with lower tooth moderately excised.

Petiole with a distinct, dorsally rounded node and a tapered peduncle subequal to it in length. The node is long-oval seen from above; maximum width about 0.15 mm. A thin, even longitudinal band and two tiny transparent rounded lobes one on each side of the band posteriorly complete the ventral petiolar spongiform vestiture; the node is free above and laterally, with only a very narrow, raised, collar-like flange of thin, stiff translucent

material around the posterodorsal border which widens slightly on each side behind to form thin posterolateral lobes. Postpetiole muffin-shaped, basically much as in *saliens;* the disc strongly convex, subcircular in outline seen from above, slightly broader than long, continuously marginate along the sides and behind. A thin, transparent lamelliform band running around below the posterior border of the disc, confluent ventrolaterally on each side with a large, dependent, subacute, vesicular leaflike lobe of thin, transparent lamellar material. First gastric sternite anteriorly with a low half-ring of spongiform tissue. A very narrow, thin, arching lamelliform band along the anterior discal border.

Body finely and densely reticulo-punctulate, opaque; funiculi, much of legs, mandibles, and postpetiolar disc with feebler sculpture, subopaque. Gaster smooth and shining, basally with about 15 distinct and well spaced costulæ extending about 1/6 the length of the basal gastric tergite.

Body proper clothed abundantly with fairly short but conspicuous, strongly spatulate hairs, disposed as follows: dorsum of head including clypeus covered, the hairs subreclinately curved anteriorly. 7-8 slender ones directed apically along the anterior border of each scape. Promesonotum with hairs like those of the head, but not so conspicuous, and curved medially. A row, curved posteriorly, along each side of the propodeal dorsum. Posterior surfaces of both nodes each with a conspicuous patch, suberect and posteriorly curved. Dorsum of gaster, except for an anterior partially nude area, with a conpicuous, spaced clothing of slender, appressed spatulate hairs, their apices directed posteriad. In addition to the ground pilosity, there are three pairs of longer, erect clavate hairs, flattened apically, one pair on the vertex and one pair each on the humeri and at the anterior fifth of the center of gastric segment I. Most surfaces of mandibles, legs, antennæ, and underside of head with a dense vestiture of short, narrowly spatulate or simple hairs, mostly subappressed or appressed. Apex and venter of gaster with a few long, erect subflagellate hairs.

Color medium ferrugineous, slightly on the yellowish side, the head very slightly darker than alitrunk; gaster medium red-brown, slightly darker than rest of body.

Holotype a unique worker in the collection of Father Thomáz Borgmeier, Jacarepaguá, Rio de Janeiro, Brazil, collected at Tapera, Pernambuco, Brazil (Pickel). Nothing is known concerning the biology of this very distinct species.

Strumigenys trinidadensis Wheeler

Strumigenys trinidadensis Wheeler, 1922, Amer. Mus. Novit. 45: 12, worker (original description).

Strumigenys saliens, Wheeler, 1916 and 1922, *nec* Mayr; see under *S. saliens* synonymy above.

WORKER: TL 3.4-3.8, HL 0.78-0.83, ML 0.52-0.56, WL 0.80-0.88 mm.; CI 78-82, MI 66-69. Measurements are from 12 specimens representing six localities and at least that many nests. Quantitative internidal variation virtually absent. A check inspection of a larger series from the same nests showed no variation in absolute measurements beyond the cited extremes. The holotype, though damaged, is a representative specimen toward the upper end of the size range.

This species is intermediate in general charactistics between the *mandibularis* series and the *hindenburgi-emeryi* series. The head is somewhat depressed, with prominent occipital lobes and a large occipital excision. The eyes are large and convex and directed predominantly laterad. Mandibles nearly straight, but with convex outer borders, narrowed just at insertions, thickest just apicad of insertions, and tapered from there to apex. A single reduced intercalary tooth present as a reclinate spur on the inner side of the ventral tooth of the apical fork. Preapical teeth two, small and widely spaced; distal preapical tooth near the apical quarter of the ML, proximal a bit apicad of mid-ML. Distal preapical tooth uually about 1/3 or less the length of the dorsal apical tooth, proximal even shorter, but both teeth fully distinct even at low magnifications, and both acute. Scapes long, slender, very nearly straight, slightly incrassate near base and gently tapering toward apex.

Humeri angulate and tuberculate; promesonotal suture marked by a distinct semicircular carina; median promesonotal carina strong. Region centering on metanotal groove deeply impressed. Propodeal teeth long, slender, acute, inclined, the upper pair as long as or slightly longer than the distance between the centers of their bases and only slightly longer than the lower pair. Lamella between upper and lower teeth of a single side reduced to a low, concave carina, much as in *saliens.* Petiolar peduncle long, slender, as long as or slightly longer than node; node long, low, rounded above, its free part longer than broad. Of petiolar appendages, the ventral band is reduced to a narrow sliver; posterodorsal collar fairly well developed, its lateral portions with heavily sclerotized central pads. Postpetiole slightly broader than long; disc convex; spongiform appendages fairly well developed, the lateral pads with sclerotized darker portions in the centers.

Head, alitrunk and both nodes densely reticulo-punctulate and opaque, the dorsal surfaces mostly with weak overlying rugulation. Basal segment of gaster entirely and very densely and finely longitudinally striolate, silky-opaque. Apical segments and venter of gaster smooth and shining, with minute, spaced piligerous punctulae.

Ground pilosity of head, including border pilosity of clypeus and scapes, consisting of small and inconspicuous, more or less reclinate, narrow-spatulate

hairs. A pair of longer erect spatulate hairs in front of occipital excision. Paired long flagellate hairs found: one pair on lateral occipital borders, one pair on humeri, one pair bilaterally on mesonotum. Numerous long flagellate hairs erect on both nodes, becoming very abundant and crowded on the gaster, venter as well as dorsum. Color uniform ferrugineous yellow.

MALE (a specimen taken with workers at Tumupasa, Bolivia): TL 3.0, HL 0.55, WL 0.94, forewing L 2.6, greatest eye diameter 0.29 mm.; CI 112 (HW including eyes is 0.62 mm.). Straightline exposed length of a single mandible about 0.11 mm. Eyes very large, bulging, distant from mandibular insertions by about the mandibular length. Mesothorax bulky, dorsum flat, notaulices distinct anteriorly only; parapsidal furrows distinct. Scutum with longitudinal rugulation superimposed on reticulate ground sculpture. Upper propodeal teeth represented by subrectanglar projections subtended by gently concave lamelliform carinæ.

Petiole claviform, node low and poorly differentiated from its peduncle, the dorsal surface of which slopes evenly and gradually up to the nodal summit. Postpetiole broader than long, disc convex. Both nodes with small but dense paired subspongiform pads in the posterolateral and posteroventral positions.

Gaster feebly and indefinitely striate at extreme base; otherwise, like the nodes and most of the thoracic pleura, smooth and shining. Pilosity general and fairly abundant, of moderate- and medium-length fine, curved simple hairs, reclinate to inclined erect, not conspicuous. Wings densely covered with brownish microtrichia.

Veins of forewing with Rs+M obsolete, Mf3.4 obsolescent, Rs very weak and indefinite. Hamuli of hindwing 5.

Yellowish ferrugineous except for head and median section of scutum, which are blackish-brown.

The mandibles, as in other species, are much reduced; nevertheless, the acute apices are barely capable of being opposed at their extreme tips. The inner borders are nearly straight, outer borders convex, blades tapered to very acute apices. Genitalia of a second specimen from the same (Tumupasa) series have been dissected, and a figure of the volsella will be presented in another part of this revision. The genitalia are in the usual strumigenite pattern, and were fully retracted in the present cabinet specimens.

The holotype of *S. trinidadensis* [MCZ] is a damaged specimen from Port of Spain, Trinidad (R. Thaxter). Another damaged specimen with the same data as the holotype is also in the MCZ; this is the specimen Wheeler thought to be *S. saliens.*

Other material studied: Trinidad: Mt. Tucuche (P.J. Darlington). Brazil: Recife (Lima-Castro). Tapera, Pernambuco (Pickel). Bolivia: Cachuela Esperanza, Rio Beni (W. M. Mann). Tumupasa (Mann).

The range of this species, formerly thought to be confined to Trinidad, is now shown to be very extensive on the South American mainland. Probably collecting in central Brazil will show it to be a common species in many localities. We have no information regarding its nesting habits or ecological preferences within its known range.

With its densely striolate gastric dorsum and dense, long, fine, erect, flagellate gastric pilosity, this species resembles a few other New World forms: *hindenburgi* Forel, *marginiventris* Santschi and *lanuginosa* Wheeler, but it differs from all of these in details of mandibular form and dentition, propodeal armament and other features. *S. hindenburgi* has the same dental formula in general, but in this species the mandibles are inserted much closer together and the proximal preapical tooth is reduced to a very small denticle; furthermore, *hindenburgi* has a broad lamellate margin along each dorsal scrobe border, lacking in *trinidadensis.* The mandibles of *trinidadensis* are basically those of the *mandibularis* series, although the relatively reduced status of the proximal preapical tooth may cause some confusion when the species has to be contrasted with forms having this tooth really drastically reduced and denticuliform.