

Ants of the Genera *Belonopelta* Mayr and *Simopelta* Mann

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(With 4 figures)

The genus *Belonopelta* was established by Mayr as long ago as 1870 for a peculiar Ponerine ant which he received from Colombia and described and figured as *B. attenuata*. In 1887 he referred another, quite different species, *curvata*, from Santa Catharina, Brazil, to the same genus. Neither of these forms has since been taken. Forel in 1902 described from Guatemala a species, *pergandei*, related to *curvata*, and Mann in 1916 discovered a second, which he called *jeckylli*, in the state of Matto Grosso, Brazil. Finally, in 1922, he turned up in Honduras a species, *deletrix*, closely related to Mayr's genotype *attenuata*, and showed that the five species belong to two different groups. He referred *attenuata* and *deletrix* to the subgenus *Belonopelta* sens. str. and *jeckylli*, *pergandei* and *curvata* to a new subgenus, which he called *Simopelta*. I have recently received from Dr. F. X. Williams specimens of two undescribed Ecuadorian species which obviously belong to *Simopelta*. Mann's two subgenera seem to me to be so sharply distinguishable that I am treating them in the following pages as distinct, though allied genera.

All the species of *Belonopelta* and *Simopelta* appear to be very rare. Each is, in fact, known only from one or a few workers taken from a single colony. Moreover, these specimens were taken under circumstances that did not permit detailed observation of their behavior. Mann is the only author who has recorded a few observations on their nesting habits. Of the Brazilian *Simopelta jeckylli* he says: «The colony was discovered quite accidentally, by scratching away some of the leaves and debris with which the ground in the forest is everywhere covered. As far as I could ascertain the ants were travelling in a definite direction.» The two specimens from which he drew up his description of *Belonopelta deletrix* were «found beneath a log». It is safe to assume that the colonies of both genera are small, and Mann's notes, the coloration of some of the species and especially their vestigial eyes, suggest that these ants are decidedly hypo-

gaec. The narrow and rather weak mandibles indicate that, like some species of *Eciton* and *Lobopelta*, they may feed on small, soft-bodied insect larvæ or subterranean termites.

Both Mayr and Emery regarded *Belonopelta* (including *Simopelta*) as rather closely related to the genus *Ponera*, mainly, I suspect, because of the similarity in structure of the thorax and petiole. The eyes, clypeus, mandibles and antennæ, however, are really very different. Each eye, instead of consisting of several ommatidia, is a single, and in some of the species a very convex, bead-like facet, like the eyes of the larger species of *Eciton*. In most species the very steep clypeus bears at the middle of its anterior border a slender tooth or spine, but this is easily broken off. The antennal funiculi are distinctly submonillate, that is with distinct constrictions between the separate joints, or segments, and the ventral border of the mesosternum in some species has a prominent tooth near the insertion of the median coxa. In *Simopelta* the frontal carinæ are much larger and much more conspicuously elevated than in *Ponera* and the petiole has a pair of well-developed teeth just above the peduncle. Though both genera belong to the tribe Ponerini as defined by Emery in the «Genera Insectorum», they are obviously independent, specialized offshoots of the primitive and more generalized stocks represented at the present time by *Ponera* and *Euponera*. The specialization of the mandibles is comparable with that of several other genera of the same tribe, such as the paleotropical *Cryptopone*, *Pseudoponera*, *Trapeziopelta*, *Myopias* and *Dorylozelus* and the neotropical *Thaumatomyrmex*. All the species of these genera are also very rare or local, mere remnants, presumably, of an ancient Pretertiary fauna. A detailed future study of their feeding habits in artificial nests may enable us to account for the aberrant structure of their mandibles. This is true also, of course, of the Dacetone ants among the Myrmicinae and of such forms as *Myrmoteras* among the Formicinae.

Key to the Workers of *Belonopelta* and *Simopelta*

1. Mandibles with 5 regularly graduated teeth, the apical tooth slender and prolonged; clypeus in profile sloping, not abrupt, continuing the profile outline of the front; frontal carinæ small; second funicular joint longer than broad; sculpture fine *Belonopelta* Mayr (2)
- Mandibles with at most 3 or 4 larger teeth, not in a graduated series, but with the two apical teeth separated by a diastema from the large basal tooth or teeth; clypeus in profile perpendicular, at a right

angle to the front; frontal carinæ much larger; sculpture coarser...

Simopelta Mayr (3)

2. Fuscoferruginous, with darker head and rufotestaceous mandibles, antennæ and legs; head narrow, one and one-half times as long as broad. Length. 4.8-5 mm. Colombia.....*attenuata* Mayr
- Black, with reddish mandibles, antennæ and legs; head decidedly shorter and broader; apical mandibular tooth longer. Length only 4 mm. Honduras.....*deletrix* Mann
3. Brown or ferruginous; eyes not strongly convex; mesosternal teeth absent; clypeal spine present 4
- Piceous black; eyes strongly convex; clypeal spine absent; mesosternal teeth present; mandibles 3-toothed; abdomen not constricted between the postpetiole and gaster..... 6
4. Punctures of head and thorax coarse, regular and foveolate. Length 4.5 mm. Brazil.....*jeckylli* Mann
- Punctures of head thorax much finer, not distinctly foveolate. Smaller..... 5
5. Mandibles with only 3 large teeth; abdomen strongly constricted between the postpetiole and gaster. Length 3 mm. Guatemala.....
pergandei Forel
- Mandibles with 4 large teeth; abdomen feebly constricted between the postpetiole and gaster. Length 3 mm. Brazil.....*curvata* Mayr
6. Head reticulate rugulose and finely punctate; pronotum concentrically rugulose-punctate; mandibles with broad, truncated basal tooth and rather long apical teeth; petiole decidedly longer than broad. Length 3 mm. Ecuador*williamsi* sp. nov.
- More shining; head punctate behind, with sharply, longitudinally rugose cheeks; pronotum smooth; basal mandibular tooth not broad and truncated; apical teeth shorter; frontal carinæ and petiole broader. Length 3 mm. Ecuador.....*manni* sp. nov.

Belonopelta attenuata Mayr

Belonopelta attenuata Mayr, Sitzungsab. K. Akad. Wiss. Wien, 61, 1870, p. 395, pl. 7, fig. 11, worker; Emery, Gen. Insect. Ponerinæ, 1910, p. 87, worker.

The worker of this species, according to Mayr, measures 4.8-5 mm. and is fuscoferruginous, the head narrow, black, anteriorly ferruginous, the mandibles, antennæ and legs rufotestaceous. The surface of the body is shining, the mandibles delicately striolate, the head more densely and more coarsely, the abdomen more sharply and more sparsely punctate, the posterior surface of the petiolar node nearly smooth and very shining. The pilosity is sparse and erect, the pubescence abundant, but delicate. The mesosternum has a distinct tooth near the insertion of the middle coxa; the constriction between the postpetiole and gaster is pronounced.

The type specimen was taken in Colombia.

Mayr's figures are defective, as he later noticed, be-

cause they fail to show the clypeal spine and mesosternal tooth.

! *Belonopelta deletrix* Mann

Belonopelta (Belonopelta) deletrix Mann, Proc. U. S. Nat. Mus. 61, 1922, p. 9, fig. 6, worker.

According to Mann, the worker of this species differs from that of *attenuata* in its smaller size (4 mm.) and darker color, being black, with reddish brown mandibles, antennæ and legs. The head is shorter and broader, the apical tooth of the mandibles longer and more tapering, the clypeus more

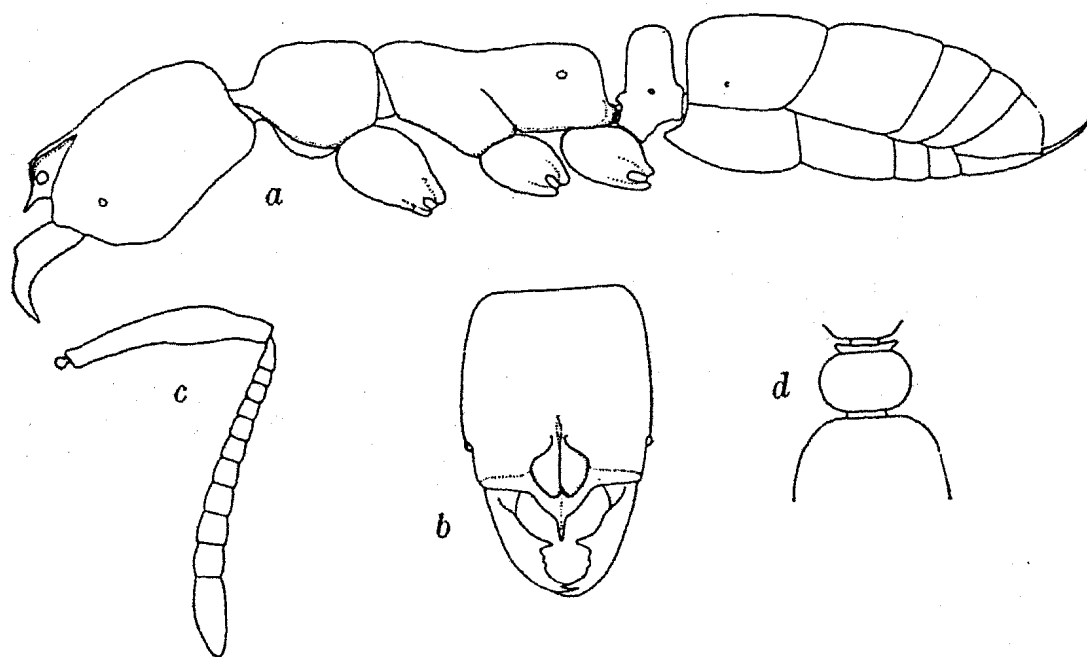


Fig. 1. *Simopelta pergandei* (Forel), worker; a, in profile; b, head dorsal view; c, antenna; d, petiole, dorsal view.

projecting, the antennal scapes longer and the fine, dense punctuation of the head interspersed with coarser and more distinct punctures.

The type specimens were taken by Dr. Mann at Choloma, Honduras.

Simopelta pergandei (Forel) (Fig. 1)

Belonopelta pergandei Forel, Deutsch. Ent. Zeitschr. 1909, p. 242, worker; Emery, Gen. Insect. Ponerine, 1910, p. 87, worker.

Worker: Length 3 mm.

Head subrectangular, distinctly longer than broad, as broad behind as in front, with very feebly convex sides and nearly straight posterior border. Eyes at the anterior fifth

of the sides, not very convex. Clypeus in profile perpendicular, carinate, its anterior border triangularly produced, with a slender median spine. Frontal carinae elevated, large, sub-semicircular, separated by a very narrow frontal groove, which broadens and deepens posteriorly but does not reach the middle of the head. Mandibles rather narrow and falcate, with a stout basal tooth separated by a diastema furnished with two small, low, somewhat irregular denticles from two stout, approximated apical teeth. Antennae rather slender; scapes somewhat arcuately bent, extending nearly to the posterior corners of the head; first funicular joint twice as long as broad, second broader than long, third to tenth as long as broad; terminal joint not conspicuously thickened, nearly as long as the preceding three together. Thorax long, broadest through the pronotum, which is as broad as long, laterally rounded and in profile distinctly depressed or flattened above; promesonotal suture strongly impressed; mesosternum without a tooth; mesoëpinotum small, as broad as long, with straight dorsal outline sloping somewhat to the shallow mesoëpinotal constriction, which is without a distinct suture; epinotum nearly twice as long as broad, broader behind than in front, with feebly convex basal outline rounding into the declivity without a distinct angle. Petiole nearly twice as broad as long, its node in profile as high as the epinotum, higher than long and somewhat narrower above than below, with flattened anterior and posterior surfaces and rounded dorsal surface, a short, blunt but distinct tooth on each side just above the anterior articulation and a blunt, angular projection on the ventral surface. Postpetiole broader than long, strongly marked off from the first gastric segment, strongly truncated anteriorly and with a stout anteroventral projection. First gastric segment short, not broader than the postpetiole; remaining segments very short; pygidium rounded, truncated posteriorly, with unarmed border; sting long and stout. Legs rather long; middle and hind tibiae each with a large, pectinated spur.

Shining; dorsal surface of head subopaque, dorsal surface of thorax and scapes somewhat less shining than the legs and abdomen. Mandibles densely reticulate, with large, sparse, piligerous punctures. Head and thorax densely, abdomen more sparsely punctate; antennal scapes and legs finely punctate, the former more densely.

Pilosity yellowish, oblique, long on the mandibles and gaster, short and abundant on the head and thorax, somewhat longer on the scapes and legs.

Brownish ferruginous; mandibles slightly darker; legs and abdomen slightly more yellowish.

Since Forel's type specimen of this Guatemalan species, which he received from Pergande, was «In fragments», I have redescribed it from a well preserved cotype in my collection. As the Swiss myrmecologist observed, *pergandei* is very closely related to *S. curvata* Mayr. Comparison

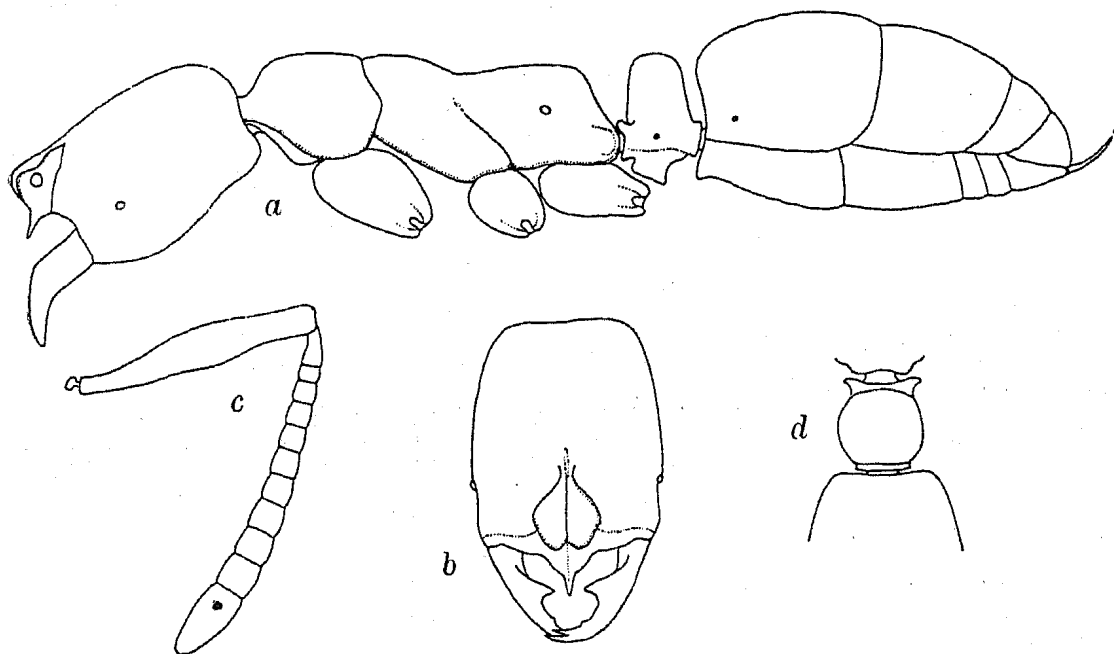


Fig. 2. *Simopelta jekylli* Mann, worker; a, in profile; b, head, dorsal view; c, antenna; d, petiole, dorsal view.

with Mayr's rather brief description shows that it differs in having only three, instead of four, large mandibular teeth, the third to tenth funicular joints are longer and the post-petiole more strongly marked off from the gaster.

Simopelta curvata (Mayr)

Belonopelta curvata Mayr, Verh. Zool. bot. Ges. Wien. 37, 1887, p. 532, worker;
Emery, Genera Insect. Ponerinae, 1910, p. 87, worker.

The following is a translation of Mayr's description of the worker of this species: «Length 3.3 mm. Reddish brown, the abdomen paler, especially behind, the legs brownish, reddish yellow. Head, thorax and legs almost without, the abdomen with sparse, moderately long, erect pilosity.

The short pubescence dense and erect on the head and thorax, on the abdomen less abundant and oblique, the antennæ and legs with short, oblique pubescence. The mandibles are triangular, curved inwards, shining, smooth, sparsely punctate, with a distinct masticatory border, which is furnished with four large teeth. The spine of the clypeus is very feebly curved downward. The frontal carinæ are distinctly broader than in *B. attenuata* Mayr. The second funicular joint is broader than long (in *B. attenuata* longer than broad). The head is densely punctate and opaque. The thorax is somewhat shining, reticulate or more rugulose-punctate, feebly concave between the meso- and epinotum. The scale of the petiole is much thinner than in *B. attenuata*. The abdomen is feebly constricted between the first and second segments [postpetiole and first gastric segment], shining and finely but not densely punctate.

Santa Catharina.»

Simopelta jeckylli (Mann) (Fig. 2)

Belonopelta jeckylli, Mann, Bull. Mus. Comp. Zool., 60, 1916, p. 415, Pl. 2, Figs. 12 and 13, worker; *Belonopelta (Simopelta) jeckylli* Mann, Proc. U. S. Nat. Mus. 61, 1922, p. 10, worker.

The worker of this species was carefully described and figured by Dr. Mann, who took several specimens from a single colony at Camp 39 on the Madeira-Mamoré Railroad in the state of Matto Grosso, Brazil. I insert slightly more detailed sketches from six specimens which he generously contributed to the Museum of Comparative Zoölogy and to my collection. The mandibles are furnished with 4 or 5 teeth, of which one or two in the diastema between the stout basal and two approximated apical teeth are very small and blunt. The clypeal spine is long and slender, the frontal carinæ very large, the anterior teeth of the petiole very prominent. There is no tooth on the mesosternum. The abdomen is not perceptibly constricted between the postpetiole and gaster. The specimens measure fully 4.5 mm. and are therefore larger than any of the other known species of *Simopelta*.

Simopelta williamsi, sp. nov. (Fig. 3)

Worker: Length 3.3 mm.

Head nearly a fourth longer than broad, subrectangular, very slightly broader in front than behind, with nearly straight

sides and posterior border. Eyes strongly convex, hemispherical, situated at the anterior fourth of the head. Mandibles rather broad, with evenly convex external and sharp masticatory borders, furnished with three teeth, the basal broad, truncated and separated by a toothless diastema from the two approximated and rather long apical teeth. Clypeus abrupt, perpendicular, bluntly carinate, its anterior border triangularly produced in the middle but without a spine. Frontal carinae narrow, subangular laterally; frontal groove shallow anteriorly, deep posteriorly, not reaching the middle of the head. Antennae long; scapes somewhat arcuately bent, surpassing the posterior border of the head by a distance equal to their

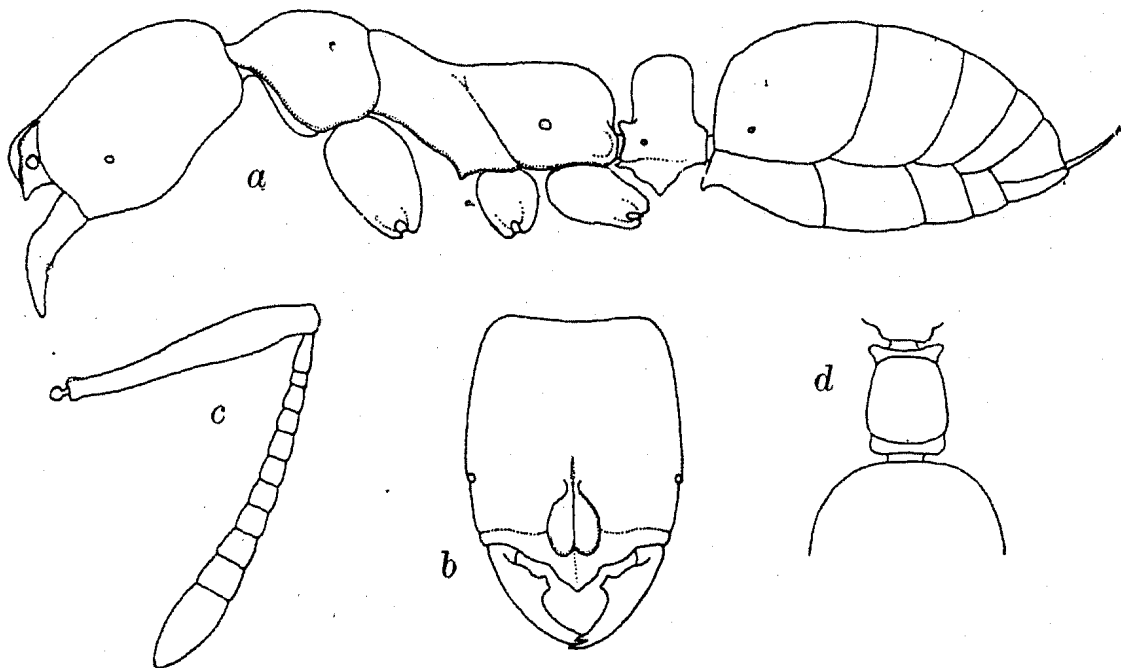


Fig. 3. *Simopelta williamsi* sp. nov., worker; *a*, in profile; *b*, head, dorsal view; *c*, antenna; *d*, petiole, dorsal view.

greatest diameter; first funicular joint nearly twice as long as broad, second decidedly broader than long, 3-10 longer than broad but the eighth to tenth only slightly so; terminal joint distinctly enlarged, glandiform, pointed, as long as the three preceding joints together. Thorax broad through the pronotum, which without the well-developed neck is as broad as long, with convex sides and less convex dorsum; promesonotal suture distinct and impressed; mesonotum laterally compressed, in profile straight and sloping to the distinct but shallow mesoepinotal impression; mesoepinotal suture obsolete; mesosternum with a small but distinct denticle near the insertion of the middle coxa; epinotum nearly twice as

long as broad, scarcely broader behind than in front, strongly and transversely rounded above, in profile straight and horizontal, rounding posteriorly through a semicircular arc into the declivity, the lower portion of which is straight, perpendicular and submarginate on the sides. Petiole narrow, about one and one-half times as long as broad, broader behind than in front, with well-developed anterior teeth. In profile the node is higher than long and slightly higher behind than in front, with straight and perpendicular anterior and posterior surfaces and feebly convex superior surface, the tooth depending from the ventral surface large and acutely angular. Postpetiole broader than long, not strongly truncated anteriorly and not marked off from the gaster by a constriction, so that the postpetiolar portion of the abdomen is short and oval and closely resembles that of *Odontomachus*. Sting well-developed. Legs slender.

Shining; the postpetiolar portion of the gaster more so than the remainder of the body; mandibles, head and thorax densely and finely reticulate or shagreened, with the following superimposed sculpture: head above and behind regularly reticulate-rugulose, anteriorly more longitudinally rugulose, on each side of the gula obliquely rugose, with several coarse punctures or foveolæ; pronotum reticulately and concentrically, pleuræ more strongly and sublongitudinally rugulose; mesonotum, base and declivity sharply, regularly and transversely rugulose or striate; sculpture of petiole more finely rugulose than that of the thorax, the rugules on the summit of the node being indistinctly concentric, on the sides longitudinal and on the anterior and posterior surfaces transverse. Postpetiolar portion of abdomen very smooth and shining, with sparse piligerous punctures. Antennal scapes more sharply, legs more delicately granular or shagreened.

Pilosity white, erect, of uneven length, longest and most abundant on the head, less so on the thorax, shortest on the abdomen; oblique and rather abundant on the antennæ and legs. Pubescence present only on the funiculi.

Piceous or brown black; lower portions of epinotum more reddish; legs including coxæ castaneous; tarsi, tip of gaster and sting yellowish.

Described from six specimens taken by Dr. F. X. Williams during December, 1922, at Naranjapata, Ecuador, at an altitude of 1850 ft.

Simopelta manni, sp. nov. (Fig. 4)

Worker: Length 3 mm.

Slightly smaller and more slender than *S. williamsi*. Head nearly one and one-third times as long as broad, subtrapezoidal, distinctly broader in front than behind, with slightly convex posterior border and nearly straight sides. Eyes very convex, projecting, hemispherical, at the anterior fourth of the sides. Mandibles rather broad, with nearly straight external and sharp masticatory borders, the latter furnished with three large teeth, the basal tooth acute and separated by a long toothless diastema from the two apical teeth which

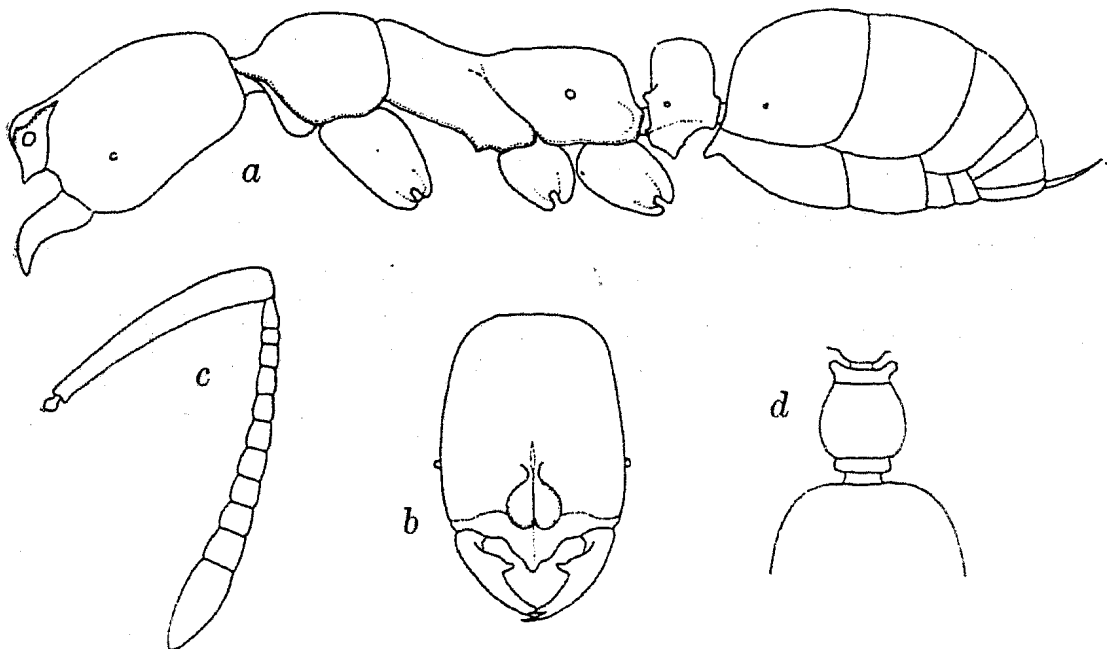


Fig. 4. *Simopelta manni* sp. nov., worker; a, in profile; b, head, dorsal view; c, antenna; d, petiole, dorsal view,

are distinctly shorter than in *williamsi*. Clypeus abrupt, bluntly carinate, its anterior border triangularly and obtusely projecting, without a spine. Frontal carinae broader than in *williamsi*, thick and subsemicircular; frontal groove tenuous anteriorly, broad and deep posteriorly, reaching nearly to the middle of the head. Antennae long; scapes rather straight, extending fully one-fifth their length beyond the posterior border of the head; first funicular joint nearly twice as long as broad, second broader than long, 3-6 slightly longer than broad, 7-10 as broad as long, terminal joint as in *williamsi*, distinctly enlarged and glandiform, as long as the three preceding joints together. Thorax slender; pronotum

without the neck somewhat broader than long, with convex sides and depressed dorsum; promesonotal suture distinct but not impressed; mesonotum laterally compressed, straight in profile and gradually sloping to the distinct mesoëpinotal impression; mesoëpinotal suture obsolete dorsally; epinotum nearly twice as long as broad, in dorsal view roundly rectangular behind, slightly narrower anteriorly, in profile with feebly, evenly convex, horizontal base rounding without a distinct angle into the steeply sloping, flattened declivity, which is nonmarginate laterally. Petiole shorter than in *williamsi* but longer than broad, except the node which is very slightly broader than long, rounded-rectangular, shaped like that of *williamsi* in profile, its anterior teeth stout and prominent, the ventral projection large and bluntly triangular. Postpetiole and gaster not separated by a constriction, of the same shape as in *williamsi*. Sting very long. Legs rather slender.

Shining; mandibles subopaque, very finely striate-reticulate, with coarse, sparse, piligerous punctures; clypeus indistinctly rugulose in the middle, smooth on the sides; posterior half of head above and frontal carinæ with coarse, sparse, shallow, umbilicate punctures, the occiput finely transversely rugulose, the sides of the front sharply longitudinally rugose; the sides of the gula delicately and obliquely rugulose. Neck shagreened, remainder of pronotum smooth and shining except the lateral borders which are delicately, longitudinally striate; mesonotum above transversely striate, its sides and the sides of the epinotum more sharply, more unevenly and obliquely, the epinotal declivity transversely and evenly rugulose; dorsal surface of epinotum very smooth and shining, with a few scattered piligerous foveolæ. Sides of petiolar node arcuately, posterior surface transversely rugulose, the anterior and superior surfaces smooth and very sparsely foveolate, like the base of the epinotum. Postpetiole and gaster very smooth and shining, with fine, very sparse, piligerous punctures. Antennal scapes finely and densely granulose; legs delicately shagreened.

Pilosity white, similar to that of *williamsi* but decidedly sparser both on the body and appendages; longer on the gaster, especially on its tip and venter. Pubescence absent, except on the antennal funiculi.

Piceous or brown-black; femora castaneous, tibiæ paler

and more reddish; lateral borders of frontal carinae, mandibular teeth, trochanters, tarsi and sting reddish yellow.

Described from four specimens taken Feb. 6-8, 1923 by Dr. F. X. Williams at Mera, Ecuador.

Zwei neue Phoriden aus Südbrasilien (Diptera)

von H. SCHMITZ S. J., Valkenburg (L.), Holland

(Mit 2 Abbildungen)

Diploneura (s. str.) *borgmeieri*, n. sp. ♀

Diese Art steht der von P. T. Borgmeier, dem sie in Freundschaft gewidmet ist, im Jahre 1923 beschriebenen *Diploneura aurihalterata* (Arch. Mus. Nac. Rio, vol. 24, p. 337; als *Dohrniphora*) sehr nahe. Als Unterschied springt aber sofort in die Augen, dass beim Weibchen der neuen Art nicht drei, sondern vier abdominale Tergitplatten vorhanden sind, und zwar ist die Platte des 4. Segments so wohl ausgebildet, dass betreffs dieses Unterscheidungsmerkmals gar kein Zweifel obwalten kann. Das noch unbekanntes Männchen der neuen Art wird sich von *aurihalterata* ♂ wahrscheinlich mindestens durch hellere Beinfärbung und andere Flügelfärbung unterscheiden lassen.

Weibchen. — Beim Vergleich mit einer Cotype von *aurihalterata* ♀ finde ich am Kopf nur bezüglich der Tasterborsten einen kleinen Unterschied, indem diese bei der neuen Art nicht bloss absolut, sondern auch relativ kürzer und schwächer sind. Das Verhältnis von Länge zur Breite (3 : 4) der fünfeckigen, glänzenschwarzen und stark punktierten Stirn, Fühler- und Rüsselbildung sind bei beiden Arten gleich.

Auch in der Thoraxbildung gibt es nur geringe Unterschiede. Das Schildchen ist bei der neuen Art relativ kürzer und breiter, das Prothorakalstigma weicht nur sehr wenig von der gewöhnlichen Kreisform ab, während es bei *aurihalterata* ♀ eine lange schmale Ellipse bildet. Bei *borgmeieri* geht die schwarze Färbung der Pleuren nach unten in Braun über.

Abdomen schwarz, der Vordersaum des 2. Tergits verwachsen grau, Spitze der Terminalia bernsteingelb. Erstes Tergit in der Mitte kurz, seitlich nach hinten beträchtlich erweitert. Längen der Tergite 2-4 in der Mitte sich verhaltend wie