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NEOTROPICAL ANTS OF THE GENERA *CAREBARA*, *TRANOPELTA* AND *TRANOPELTOIDES*, NEW GENUS¹

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Our knowledge of most of the subterranean, or hypogæic myrmicine ants of the American tropics is still very meager. Of the seven genera of the Ethiopian and Indomalayan Regions (*Solenopsis*, *Carebara*, *Pheidologeton*, *Aneleus*, *Oligomyrmex*, *Æromyrma* and *Liomyrmex*) and the same number of neotropical genera (*Solenopsis*, *Carebara*, *Carebarella*, *Erebomyrma*, *Spelæomyrmex*, *Tranopelta* and *Tranopeltoides*) only two, *Solenopsis* and *Carebara*, are represented in both hemispheres. The South American species of *Allomerus*, which have minute yellow workers and large, dark-colored males and females, and would therefore seem to belong among the genera just mentioned, inhabit the cavities of living plants, as I shall show in another publication, and cannot be regarded as hypogæic. While the genus *Solenopsis* is represented by the greatest number of species in South America, *Carebara* was not known to occur beyond the confines of the Ethiopian and Indomalayan regions till ten years ago, when Santschi described the female and male of a species from French Guiana. The discovery, on my recent trip to British Guiana, of all three phases of a closely allied species and of the workers of the true *Tranopelta gilva* Mayr, together with a study of certain forms which must be referred to a new but closely allied genus, has led me to undertake the following brief revision of the South American species of *Carebara*, *Tranopelta* and *Tranopeltoides*.

CAREBARA Westwood

Carebara bicarinata Santschi

Carebara bicarinata, SANTSCHI, 1912, Bull. Soc. Ent. France, p. 139, 2 figs., ♂ ♀;
WHEELER, 1922, Bull. Amer. Mus. Nat. Hist., XLV, p. 170.

According to Santschi, the female of this species, taken by Le Moult in French Guiana, measures 12–12.8 mm. and is pale brownish yellow, with slightly infuscated wings. The male measures 9.3 mm. and is described as testaceous yellow, with the sides of the mesonotum, and in some cases the terminal gastric segments, more or less reddish

¹Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University, No. 210.

brown. The males were found to be variable and Santschi was not sure that they belonged to the same species as the female. He also mentions one male from Goya, Brazil (J. de Gaulle) as measuring 10.5 mm. The uncertainty of the specific identity of his males and females is increased by the occurrence of more than one species of *Carebara* in the Guianas and the Amazon valley.

***Carebara winifredæ*, new species**

WORKER (Fig. 1).—Length, 2.3–2.5 mm.

Head subrectangular, slightly longer than broad, as broad in front as behind, with nearly straight, subparallel sides and slightly concave posterior border. Mandibles rather convex, with somewhat oblique, 4-toothed apical borders. Clypeus longitudinally concave in the middle, bluntly bicarinate, each carina terminating in a blunt tooth on the anterior border; the sides narrow and depressed. Frontal area obsolete; frontal groove short and rather deep; frontal carinae small. Eyes absent. Antennæ 9-jointed; scapes two-thirds as long as the head; first funicular joint twice as long as broad; joints 2–4 nearly twice as broad as long; joints 5 and 6 longer but distinctly transverse; the large two-jointed club much longer than the remainder of the funiculus, the basal joint longer than broad, half as long as the terminal joint. Thorax rather small, the pro- and mesonotum somewhat flattened above, the humeri and sides rounded; the promesonotal suture obsolescent. Mesoepinotal constriction short and acute; epinotum as long as broad, narrowed behind, in profile rounded and sloping, the declivity abrupt, longitudinally concave in the middle, delicately marginate on each side. Petiole with a short, slender peduncle, the node abrupt, rounded, from above transversely elliptical, fully twice as broad as long. Postpetiole very similar and scarcely broader, but in profile distinctly lower than the petiolar node. Gaster somewhat larger than the head, broadly elliptical, the anterior border concave; first segment forming about two-thirds of its surface. Legs rather short; joints 2–4 of fore and middle tarsi not shorter than long.

Mandibles shining; the remainder of the body only moderately so, the inner borders of the mandibles with several small, sharp punctures. Head, thorax, pedicel and gaster evenly and finely punctate, the punctures on the head more distinct, on the appendages much finer and more superficial.

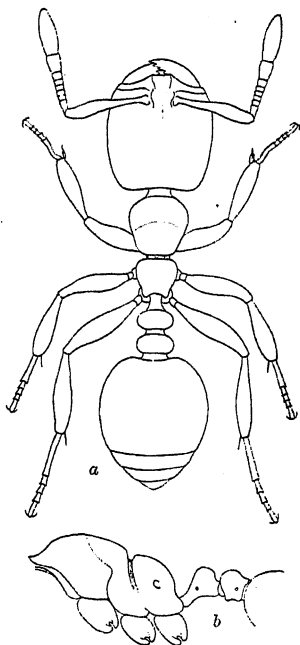


Fig. 1. *Carebara winifredæ*, new species. a, Worker, dorsal view; b, thorax and pedicel of same in profile.

Hairs and pubescence pale yellow, the former short and confined to the clypeus and tip of gaster, the pubescence very short, fine and appressed, arising from the punctures and scarcely more distinct on the body than on the appendages.

Pale yellow; the legs, pedicel and gaster paler and more whitish; mandibles reddish with black teeth. Sides of clypeus and mesoepinotal constriction brownish.

FEMALE.—Length, 10–10.5 mm.; wings, 13.5 mm.

Head, including the eyes, distinctly broader than long, broader behind than in front, with nearly straight posterior border and slightly concave, subparallel cheeks. Eyes moderately convex, half as long as the sides of the head; ocelli large, close together, in subconfluent depressions. Mandibles large, their apical borders broad, 8-toothed, the four basal teeth small and rather indistinct. Clypeus bluntly bicarinate, concave in the middle, the anterior border rounded, somewhat projecting, slightly sinuate in the middle. Frontal groove deep, extending from the pointed, backwardly projecting median portion of the clypeus to the anterior ocellus. Antennæ slender, 10-jointed, the scapes reaching to the posterior orbits; second and third funicular joints a little broader than long, the fourth and fifth as long as broad; the remaining joints longer than broad, the terminal being as long as the two preceding subequal joints together. Thorax rather long and narrow, scarcely as broad as the head through the eyes, the mesonotum one and one-half times as long as broad, convex above, as is also the scutellum, the epinotum short, its base sloping, much shorter than the abrupt declivity which is very feebly concave in the middle and indistinctly marginate on the sides. Petiole similar to that of the worker but with broad, stout peduncle and less convex node; the postpetiole from above more depressed, subcrenate, with rather strong posterior border. Gaster large, suboblong, somewhat shorter than the remainder of the body; the first segment forming less than half of its surface, the fourth segment large, blunt and rounded. Legs rather slender. Wings long; radial cell closed.

Smooth and shining; mandibles striate at the base, towards the tips coarsely striatopunctate, the two areas separated by a small, smooth space. Clypeus smooth in the middle, coarsely punctate on the sides. Remainder of body evenly punctate, the punctures sharper on the head, much sparser on the pro- and mesonotum, which are more shining; cheeks, gula, mesopleuræ and epinotum very finely longitudinally striate.

Hairs yellow, very short, present only on the clypeus, gula and tip of gaster; pubescence also very short, appressed and dilute, arising from the punctures.

Pale castaneous; clypeus, mandibles and posterior portion of gaster darker; legs paler, yellowish brown; wing-membranes opaque, fuliginous; veins and pterostigma yellow, with strong black borders.

MALE.—Length, 7–7.5 mm.; wings, 7.5–8 mm.

Head, including the eyes, nearly twice as broad as long, convex behind in the ocellar region. Eyes very large and convex, taking up the whole of the sides of the head; ocelli large and prominent. Mandibles with a large apical tooth and three or four minute basal teeth. Clypeus concave behind and laterally, with a large convex tubercle in the middle, the anterior border rounded and entire. Antennæ 13-jointed; long and filiform; scapes somewhat compressed, shorter but stouter than the second funicular joint; first funicular joint a little longer than broad; remaining joints cylindrical, subequal, except the second and last, which are longer than the others. Thorax similar to that of the female, but shorter; petiole also similar, but the node less elevated and concave in the middle; postpetiole campanulate, broader than the petiole. Gaster elongate elliptical. Legs slender.

Subopaque; gaster and mesonotum more shining; head more opaque, especially behind, where it is sharply reticulate-rugulose. Mandibles opaque, punctate. Mesonotum and scutellum distinctly, pleuræ very indistinctly, gaster finely and superficially punctate.

Pilosity and pubescence much as in the female, but the pubescence longer on the upper surface of the gaster.

Pale brownish yellow; legs clearer yellow; posterior half of head black; mesonotum with a long anteromedian and two long lateral, dark brown stripes; anterior half of head, wing-insertions and metanotum brown; wings colored as in the female; but the dark borders of the veins narrower.

Described from numerous workers, four females and six males, which were brought to me in a living condition August 5, 1920, by Mr. Alfred Emerson, who took them from the depths of a large termitarium of *Syntermes dirus* Klug, under the roots of a huge moro tree on the left bank of the Cuyuni River, near Kartabo, British Guiana. The species is dedicated to Mrs. Winifred J. Emerson. It is evidently very close to *bicarinata*, but both the male and female are smaller and the coloration of the body and wings of the female is much darker. Perhaps *winifredæ* is merely a subspecies of Santschi's species, but the latter may prove to be based on the sexual phases of *C. anophthalma* (*vide infra*).

The finding of *C. winifredæ* in the nest of *Syntermes dirus*, which Mr. Emerson informs me is, of all South American termites, the most like the African species now referred to the genus *Termes* (*sensu stricto*) and hence like the species with which the African *carebaras* live, is of unusual interest in connection with the zoögeographical hypothesis of a former land-connection between Africa and South America. It is certain, however, that the termites once had a much wider range than at present, since we find them in the Miocene of Florissant, Colorado, and in the Baltic amber of Lower Oligocene age. It is not improbable, therefore, that the genus *Carebara* may also have had a circumpolar distribution in the northern hemisphere during the early and middle Tertiary. Hence we are not compelled to regard the occurrence of *C. winifredæ* with *Syntermes dirus* as proof positive of the former existence of von Ihering's "Archihelenis" or of similar constructions.

Carebara anophthalma (Emery)

Oligomyrmex anophthalmus EMERY, 1905, Bull. Soc. Ent. Ital., XXXVII, p. 138, note, ♀.

Carebara anophthalma WHEELER, 1922, Bull. Amer. Mus. Nat. Hist., XLV, p. 170, ♀.

WORKER.—Uniformly pale yellow, shining, with moderately dense, pubigerous punctuation; the short pubescence apparently adherent, and there are no erect hairs, probably owing to the defective preservation of the specimen (for I feel cer-

tain that there should be a few small hairs, at least on the clypeus). Head a little longer than broad, broader behind, feebly concave at the posterior border. Mandibles with 4 teeth. Clypeus strongly elevated in the middle, but edentate. Frontal carinae very short. No traces of eyes. Antennae short and thick; 9-jointed; the scape only slightly surpassing the middle of the length of the head; second joint as long as the three following; joints 3-7 transverse; the two last forming a club, the last joint as long as the whole remainder of the funiculus, less its basal joint. Thorax feebly impressed between the mesonotum and epinotum; the latter curvilinear in profile. Nodes of petiole and postpetiole transversely oval, as broad as the epinotum. Legs short and robust; joints 2-5 of the fore and middle tarsi broader than long. Length, 1.6 mm.

Ega, on the Amazon; a single specimen from the collection of F. Smith, with the label "new genus, 9 joints in antenna." (Emery)

In all probability the specimen was taken by H. W. Bates.

As this description applies rather closely to the worker of *C. winifredæ*, described above, I sent Professor Emery specimens of the latter to compare with the type of *anophthalma*. He wrote me that they are specifically distinct and kindly sent camera lucida sketches of the head, thorax and pedicel of the Brazilian species. The head of this species is somewhat longer, more narrowed anteriorly; the epinotum is decidedly smaller and proportionally much shorter, and the postpetiolar node is broader in comparison with the petiolar node. As already suggested, this species may be the worker of the form described by Santschi as *C. bicarinata*.

Carebara mayri (Forel)

Tranopelta mayri FOREL, 1901, Mitth. Naturhist. Mus. Hamburg, XVIII, p. 61, ♂.
Carebara mayri SANTSCHI, 1912, Bull. Soc. Ent. France, p. 140, ♂.

According to Santschi, this species, described by Forel as a *Tranopelta*, from a specimen taken by Captain Jerrmann in Paraguay, is a *Carebara*. Forel's description is very brief, but von Brunn, who compared the venation of the type in the Hamburg Museum with that of the male *C. bicarinata* sent him by Santschi, found it to be the same in both species. Forel gives the length of *mayri* as 9 mm. I refer to this species a single male measuring 8.5 mm. and taken by Dr. Roman at Apipica on the Rio Autaz, Brazil (Royal Museum of Stockholm). It differs from the male of *winifredæ* in its larger size and in the following characters: the body is more brownish yellow; the median dark brown stripe on the mesonotum is lacking; the wings are much paler; the scapes of the antennae are more swollen and more convex anteriorly; the node of the petiole is not impressed in the middle and the pubescence on the thorax and antennae is longer, denser and more conspicuous.

TRANOPELTA Mayr***Tranopelta gilva* Mayr**

Tranopelta gilva MAYR, 1866, Sitzb. Akad. Wiss. Wien, LIII, p. 514, ♀ ♂; EMERY, 1890, Bull. Soc. Ent. Ital., XXII, p. 53, ♂; DALLA TORRE, 1893 'Cat. Hymen.,' VII, p. 74, ♀ ♂; FOREL, 1899-1900, 'Biol. Centr. Amer.,' 'Hymen.,' p. 79, ♀ ♂; FOREL, 1912, Mém. Soc. Ent. Belg., XX, p. 3, ♀ ♂; EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀ ♂; WHEELER, 1922, Amer. Mus. Novitates, No. 45, p. 8, ♀ ♂.

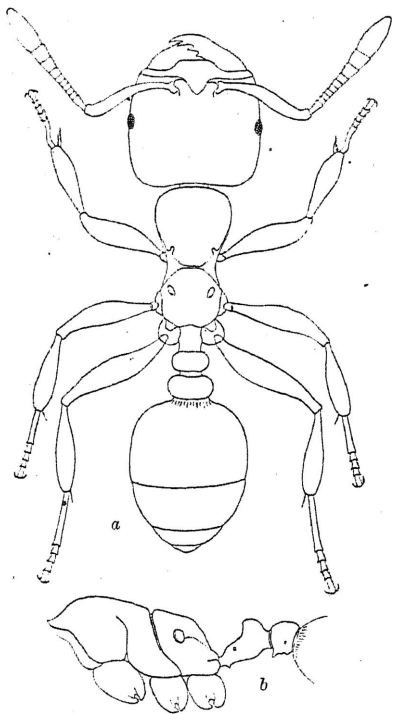


Fig. 2. *Tranopelta gilva* Mayr. a, Worker of the typical form of the species, dorsal view; b, thorax and petiole of same in profile.

WORKER (undescribed, Fig. 2).—Length, 2.3-3.2 mm.

Very feebly polymorphic. Head sub-rectangular, as broad as long, very slightly narrower in front than behind, with straight sides and concave posterior border. Eyes minute, reduced to about 8-12 facets, situated at the middle of the sides of the head. Mandibles moderately large and convex, their apical borders oblique, with four subequal teeth, or sometimes five in small individuals. Clypeus rather convex in the middle, without carinae, its anterior border rounded and entire. Frontal carinae small; frontal area and frontal groove absent. Antennae 11-jointed, rather slender, the scapes extending a little beyond the middle of the head in large, proportionally longer in smaller individuals; first funicular joint fully as long as the three succeeding joints together, second joint nearly as long as broad; joints 3-7 distinctly broader than long; the last three joints forming a club, which is longer than the remainder of the funiculus; the two basal joints longer than broad and together a little shorter than the enlarged terminal joint. Thorax rather small, much broader through the pronotum than through the epinotum; promesonotal suture extremely faint or obsolete, the dorsal surface of the pro- and mesonotum,

flattened, nearly straight in profile; the mesonotum narrowed behind to the short, acute and not very deep mesoepinotal constriction. Epinotum from above a little longer than broad, slightly concave in the middle; in profile with the base and declivity subequal and meeting at a very obtuse angle; the former continuing the dorsal outline of the pro- and mesonotum. Epinotal stigmata large and circular. Petiole with a very distinct peduncle, which is swollen at the stigmata; the node abrupt, somewhat scale-like, with rather sharp anterior border above, its anterior surface

flattened, its posterior surface more convex, from above transversely elliptical, about twice as broad as long; the ventral surface convex in the middle, anteriorly with a small, acute, downwardly directed tooth. Postpetiole rounded, lower than the petiolar node and slightly broader, about one and one-half times as broad as long, its anteroventral border in profile acute and tooth-like. Gaster broadly elliptical, somewhat flattened dorsoventrally, the first segment forming about half its surface. Legs slender and moderately long; joints 2-4 of the fore tarsi broader than long.

Smooth and shining; mandibles striatopunctate; body sparsely punctate, the punctures on the head sharper and more conspicuous; neck, mesopleuræ and sides of epinotum subopaque and very finely striate; peduncle of petiole finely reticulate-rugulose.

Hairs pale yellow, rather abundant, erect, coarse and uneven on the body; shorter, denser and more reclinate on the appendages. The hairs on the vertex, thorax and pedicel longer than elsewhere. Pubescence undeveloped, except on the gula and sides of the head, where it is long and subappressed.

Yellow; legs and gaster paler, more whitish; mandibles reddish, their teeth, the anterior border of the clypeus and the articulations of the funicular joints dark brown.

The gynetypes and androtypes of this species were from Venezuela (C. A. Dohrn), and males and females have been recorded also from Colombia; Pará, Brazil (Goeldi); Alajuela and Juan Viñas, Costa Rica (A. Alfaro); and the Volcan de Chiriqui, Panama (Champion). I have seen specimens from Port of Spain, Trinidad (Aug. Busck), Belem, near Pará, Brazil (W. A. Schulz), Lassance, Minas Geraes, Brazil (J. C. Bradley), Bartica, British Guiana (Wm. Beebe), Barakara and Kartabo, British Guiana (Wheeler). The males and females are common at lights and the foregoing records are undoubtedly from such specimens. The description of the worker is drawn from specimens from two colonies containing also many females and males. One colony was taken at Kartabo, August 3, 1920, while Mr. Alfred Emerson and I were excavating a large colony comprising more than 500 workers of the formidable stinging ponerine, *Paraponera clavata* Fabr. The *Tranopelta* were occupying small chambers one to one and one-half feet below the surface of the soil and communicating with the galleries of the *Paraponera*. In this case the smaller species was evidently behaving as a thief-ant. On August 1 I found the stomach of a four-toed ant-eater (*Tamandua tetradactyla*) to contain no less than 14 species of ants, a large proportion of which consisted of hundreds of workers and dozens of males and winged females of *Tranopelta gilva*. The ant-eater must have unearthed and devoured a very flourishing colony of this ant. July 15 I found at Barakara, on the right bank of the Mazaruni River, a large colony of *gilva*, comprising hundreds of workers but no sexual forms, under the bark of a living tree. On the surface of the wood the

ants were attending numerous snow-white coccids which have been recently described by Mr. Harold Morrison as *Ripersia subcorticis*. There is nothing to indicate that *T. gilva* occurs with termites. Mr. Alfred Emerson, who has carefully studied the termites of British Guiana and has conscientiously preserved all the ants and other organisms which he has found with them, has never taken *T. gilva* in or near the nests. It would seem, therefore, that this ant sometimes leads an independent life and that when it behaves as a thief-ant prefers to associate with other Formicidæ.

***Tranopelta gilva* variety *amblyops* (Emery)**

Monomorium amblyops EMERY, 1894, Bull. Soc. Ent. Ital., XXVI, p. 148, ♀; FOREL, 1911, Deutsch. Ent. Zeitschr., p. 299, ♀.

Tranopelta gilva var. *brunnea* FOREL, 1909, Deutsch. Ent. Zeitschr., p. 259, ♀ ♂ ♀.

Tranopelta gilva var. *brunnea* FOREL, 1909, Deutsch. Ent. Zeitschr., p. 259, ♀ ♀ ♂.

Tranopelta amblyops EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀ ♀ ♂.

According to Emery, Forel's *T. gilva* var. *brunnea*, originally described from San Bernardino, Paraguay (K. Fiebrig), is a synonym of his *Monomorium amblyops*, described from Matto Grosso, Brazil. An examination of male, female and worker cotypes of Forel's form, and a female and several males recently taken by Dr. J. C. Bradley at Lassance, Minas Geraes, Brazil, shows that they represent merely a variety of *gilva*. The worker and male are very close to the corresponding phases of the typical form. In the worker *amblyops* the eyes are perhaps a trifle smaller, the antennæ somewhat shorter, the median funicular joints slightly more transverse. In the male the body, and especially the head and thorax, are of a more brownish-yellow color. In the female the surface of the body is decidedly more shining and much less densely pubescent, the mandibles, head, thorax and pedicel are of a castaneous-brown color, much darker than in the typical *gilva*; the wings are also darker, and the ventral surface of the petiole is not provided with an acute, downwardly directed spine. This spine is apt to be absent also in the male.

***Tranopelta gilva* variety *albida* (Mann)**

Tranopelta gilva var. *albida* MANN, 1916, Bull. Mus. Comp. Zool., LX, p. 446, ♀.

?*Tranopelta gilva* EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀.

My cotypes of this form, taken by Dr. Mann on the Madeira-Mamoré R. R., in Matto Grosso, Brazil, show that it is a distinct variety, as he maintained, and not the worker of the typical *gilva*. The specimens are smaller (1.5–2 mm.) and decidedly paler, being whitish; the antennal scapes are a little longer, the anterior border of the petiolar node is a little more acute, and the eyes are even smaller than in the var. *amblyops*.

Tranopelta heyeri, (Forel)

Monomorium heyeri FOREL, 1901, Ann. Soc. Ent. Belg., XLV, p. 389, ♀.

Tranopelta heyeri FOREL, 1913, Bull. Soc. Vaud. Sc. Nat., (5) XLIX, p. 17, ♀;
EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀.

A dimorphic species, the major worker resembling a *Pheidole*, but grading into the minor forms.

WORKER MAJOR.—Length, 4–4.2 mm. Mandibles thick, smooth, shining, with scattered punctures, a few striæ towards the tips and about four teeth. Clypeus slightly convex, without teeth or carinæ, but feebly notched in the middle of its anterior border, slightly impressed behind the notch and slightly or scarcely convex in the middle portion, which presents a suggestion of the two carinæ seen in the other species. Head large, square, as broad as long, slightly narrowed anteriorly, feebly concave behind, resembling that of a soldier *Pheidole*, with a feeble but rather distinct occipital furrow, disappearing on the vertex. Frontal area triangular. A median pit on the front of the vertex in place of the anterior ocellus. The eyes, situated a little in front of the middle of the sides of the head, are very small and flat, composed of about a dozen partly atrophied facets. Antennæ short; 11-jointed; club of three joints, about as long as the rest of the funiculus, thick, with the last joint at least as long as the two preceding united; the other joints, except the first, broader than long. Frontal carinæ short; frontal groove short and indistinct. Promesonotal suture almost obsolete; pronotum large, robust, almost shouldered. Mesoepinotal suture deeply impressed, but without a constriction properly so-called, forming only a short interruption in the thoracic dorsum, which is feebly convex and scarcely higher in front than at the basal face of the epinotum. The latter is slightly longer than the declivity into which it passes insensibly, with two feeble longitudinal swellings, separated by a concavity or shallow longitudinal groove. Petiolar node pedunculate anteriorly and abruptly surmounted behind by a large, scale-shaped node with straight superior border, lower and broader than in (*Monomorium*) *latastei*, less thickened and broader than in *amblyops*. Postpetiolar node transverse, more or less rectangular but rounded and narrower at the anterior corners, much broader than long. Legs rather short.

Smooth and very shining, with scattered, fine, often brownish, piligerous punctures. Antennal fossæ, frontal carinæ and sides of clypeus longitudinally and somewhat obliquely striated. Sides of mesonotum reticulate-punctate and more or less opaque.

An erect, yellowish, rather fine pilosity is everywhere rather uniformly distributed, somewhat oblique on the tibiæ and antennæ, where it is shorter and a little more abundant. Pubescence almost absent.

Entirely pale yellow; even the abdomen very pale. Mandibles and sides of clypeus reddish. Articulations of appendages slightly infuscated.

WORKER MINOR.—Length, 2.7–2.9 mm. Like the major, but the head, though large, square and at least as broad as long, is much smaller, without occipital furrow and scarcely concave behind. The clypeus, though not bicarinate, has nevertheless indications of the two carinæ of the genus (*Monomorium*). Eyes with only 4 to 6 facets. Petiolar node slightly thicker and narrower. In other respects like the worker major, but the sides of the mesonotum are subopaque, more feebly reticulate and the color is even paler.

A single worker media is intermediate (3.3 mm.).

St. Leopoldo, Rio Grande do Sul, Brazil, living only with termites, where it was discovered by Mr. Heyer. Received from Mr. Wasmann. (Forel)

The species is also recorded by Forel from São Paulo, Brazil, where it was taken by von Ihering.

***Tranopelta heyeri* variety *columbica* (Forel)**

Tranopelta heyeri var. *columbica* FOREL, 1912, Mém. Soc. Ent. Belg., XX, p. 3, ♀.
? *Tranopelta gilva* EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀.

This form is doubtful. It may be the same as the one later described by Mann as *T. gilva* var. *albida* or it may be, as Emery suggests, the minor worker of the typical *gilva*. The following is Forel's description.

WORKER.—Length, 1.6–2.6 mm. Even paler than the type of the species and much smaller; white, scarcely yellowish. In other respects very similar, but the posterior portion of the clypeus between the frontal carinæ is narrower, very much as in *gilva* var. *brunnea* Forel. The largest worker has a proportionally much smaller head than in the type of *heyeri*, but perhaps I failed to find the worker maxima. In other respects like the type of the species; eyes with 4 to 6 facets.

Dibulla, in the ground, at the bottom of the nest of *Mycocepurus smithii* Forel, and San Antonio, in a subterranean nest, beneath dried cow-dung, Sierra Nevada de Santa Marta, Colombia.

***Tranopelta subterranea* (Mann)**

Monomorium (*Mitara*) *subterraneum* MANN, 1916, Bull. Mus. Comp. Zool., LX, p. 444, Pl. iv, figs. 29, 30, ♀.

Tranopelta subterranea EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀.

I agree with Emery, that this species, taken by Dr. Mann on the Madeira-Mamoré R. R. in Matto Grosso, Brazil, is a *Tranopelta*, but it certainly differs from the other species in several important particulars. The clypeal margin is sinuate in the middle, the mandibles are 6-toothed, the legs and antennæ are long, the mesoëpinotal constriction is very pronounced, the first segment of the gaster forms nearly its whole surface and the color is reddish testaceous instead of pale yellow. There is considerable difference in the size of the body (3.5–5 mm.) and especially of the head. Dr. Mann found the specimens about three feet below the surface of the soil.

TRANOPELTOIDES, new genus

The female ant described by Forel as *Tranopelta huberi* seems to me to belong to an undescribed genus for which I would suggest the name *Tranopeltoides*. It differs from the female *Tranopelta* in possessing spines on the epinotum, thus indicating an even higher development of these structures in the worker. Moreover, I have found two males that

appear to belong to the same genus. They have very short, 11-jointed antennæ, with very short scape and globular first funicular joint. Very probably, therefore, all three phases of the species which I refer to this genus have 11-jointed antennæ, instead of the antennæ being 11-jointed only in the worker and female and 13-jointed in the male as in *Tranopelta*. The veins in the hind wing of the female, and especially of the male, are few and feebly developed as compared with *Carebara*, *Tranopelta*, etc. The following species is to be regarded as the type of the genus.

***Tranopeltoides huberi* (Forel)**

Tranopelta huberi FOREL, 1907, Mitth. Naturhist. Mus. Hamburg, XXIV, p. 5, ♀.
? *Tranopelta subterranea* EMERY, 1919, Bull. Soc. Ent. France, p. 61, ♀.

FEMALE.—Length, about 8–8.5 mm. Mandibles smooth, coarsely punctate. Anterior border of clypeus transverse, broadly sinuous on each side, in the middle scarcely broadly impressed or very feebly concave. Clypeus much less convex than in *gilva*, not carinate. Head transversely rectangular, very broad, nearly one-quarter broader than long, straight posteriorly, somewhat broader than anteriorly, with feebly convex sides. The antennal scapes distinctly surpass the posterior border of the head. All the funicular joints of the 11-jointed antennæ are longer than broad; club precisely as in *gilva*. The mesonotum overarches the pronotum anteriorly. Epinotum with two broad, stout, triangular, rather blunt spines, somewhat more than half as long as the straight declivity, which is about three times as long as the base of the spines. Declivity almost vertical. Anterior slope of petiolar node gently rising anteroposteriorly in the form of a gradual inclined plane, broad behind, with convex sides, longer than broad, posteriorly with two blunt, tooth-like corners. The posterior and at the same time superior border of this flattened segment is almost acute and broadly emarginate between the corners. Thence the surface is short and steep. Postpetiole rounded, somewhat broader than long. The gaster is lacking in the single specimen. Legs rather long and slender; tarsal claws well developed.

Clypeus, cheeks and sides of head as far as the frontal carinæ densely striate and lustrous. Front between the carinæ, vertex, occiput, thorax and petiole smooth, shining and sparsely punctate. Only the epinotum is irregularly rugulose.

Erect pilosity uneven, partly long, sparse, pointed, somewhat oblique on the tibiae, arising from punctures. Appressed pubescence very dilute.

Sordid yellow, in places somewhat brownish yellow; legs paler; antennæ yellowish brown. Mesonotum with three brown longitudinal bands. Ocelli enclosed in a brownish spot. Wings brownish, smoky, with brown veins and stigma; venation precisely as in *gilva* Mayr.

Surinam, Upper Pará (J. Michaelis).

Notwithstanding the great differences, I regard this species as a *Tranopelta*, though it is very distinct from *gilva* Mayr and evidently also from the much larger *mayri* Forel, known only from the male, and is particularly aberrant in its long antennal joints, the epinotal spines and small stature. I dedicate this species to Dr. Huber, director of the Museum Goeldi at Pará, the author of excellent observations on the habits of ants. (Forel)

***Tranopeltoides parvispina*, new species**

FEMALE (Fig. 3d).—Length probably somewhat more than 10 mm., but post-petiole and gaster lacking; length of wings 13 mm.

Head trapezoidal, about one-fifth broader than long, broader behind than in front, with straight posterior and lateral borders. Eyes at the middle of the sides and about one-third their length. Ocelli large, in deep impressions. Mandibles moderately convex, their apical margins with five subequal, rather blunt teeth. Clypeus flattened, its anterior border straight and entire in the middle, sinuate on each side. Frontal area triangular; frontal groove distinct only in the middle of a line connecting the frontal area and the anterior ocellus. Antennæ rather short,

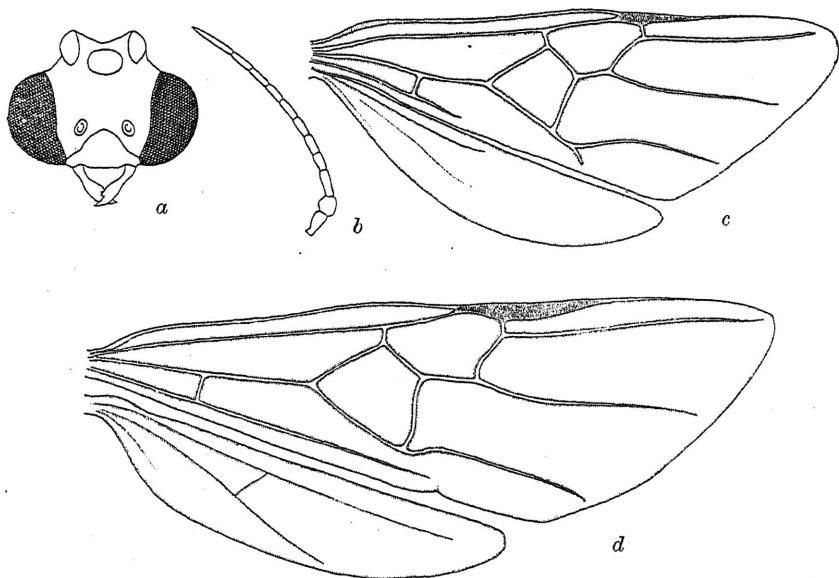


Fig. 3. a, *Tranopeltoides bolivianus*, new species, head of male; b, antenna of same; c, wings of same; d, *Tranopeltoides parvispina*, new species, wings of female.

11-jointed, the scapes reaching only to the posterior third of the lateral borders of the head; first funicular joint as long as the three succeeding joints together; joints 2-7 scarcely longer than broad; 8 and 9 a little longer than broad; the terminal as long as the two preceding joints together. Thorax elongate-elliptical, narrower than the head, mesonotum much longer than broad, convex anteriorly where it overarches the pronotum. Epinotum small and short, abruptly sloping, the base very short, scarcely distinct from the flattened declivity, above and at the sides of which there is a pair of small, blunt, triangular, flattened teeth, not longer than broad at their bases and the latter not more than a quarter the length of the declivity; episternal angles very small. Petiole less than twice as long as high; the anterior slope of the node in the form of an inclined plane, the node itself very short, broadly excised in

the middle and with each corner forming an acute angle. The ventral surface bears a small triangular, downwardly directed tooth at the anterior end. Legs moderately long and stout. Venation of wings essentially as in *Tranopelta* but the radial cell is more nearly closed, the cubital cell is shorter and the discoidal cell is larger.

Shining; mandibles striatopunctate; clypeus smooth in the middle, coarsely punctate on the sides. Head above finely, longitudinally striate and with rather coarse, scattered, piligerous punctures. Thorax very smooth and shining above, sparsely and finely punctate; epinotum subopaque, the lower pleuræ very finely and longitudinally, the declivity transversely striate.

Hairs yellow, erect, rather uneven, sparse, longer on the head than on the thorax; suberect and nearly as long on the tibiae as on the thorax; mesosternum and femora with dilute, appressed, yellowish pubescence.

Yellowish brown; head darker, more reddish brown; legs slightly paler; mesonotum with three indistinct, darker longitudinal streaks; mandibular teeth blackish. Wings distinctly yellowish, the veins and stigma brownish yellow.

A single specimen taken August 8, 1911, at Kaieteur, British Guiana, by Dr. F. E. Lutz.

This species is certainly congeneric with the preceding and is distinct in its larger size and in having much shorter antennal scapes, a different sculpture of the head and mandibles and smaller spines on the epinotum.

***Tranopeltoides bolivianus*, new species**

MALE (Fig. 3 a, b, c).—Length, 5.5 mm.

Head, including the eyes, broader than long; both the eyes and ocelli very large, larger than in *Tranopelta*, the latter on an elevated projection. Cheeks absent. Mandibles small, with two acute teeth, the basal minute. Clypeus moderately convex, with straight, entire anterior border. Antennæ slender, very short, 11-jointed; the scape scarcely twice as long as broad, the first funicular joint subglobular, a little broader than long, second joint longer than the scape, remaining joints, except the last, somewhat shorter, terminal joint tapering. Thorax from above broadly elliptical, broader than the head, the mesonotum without Mayrian furrows, convex anteriorly and overarching the pronotum. Epinotum with subequal base and declivity, meeting on each side at a small but distinct angle which represents the spine of the female. Mesosterna very convex. Petiole unarmed beneath; the node lower, much rounder and not angulate at the posterior corners. Postpetiole somewhat broader than the petiole, nearly as long as broad, campanulate. Gaster shaped much as in *Tranopelta* but the broad, outermost genitalic appendages are more truncated and the pygidium is less acutely pointed. Legs long and slender, tarsal claws large. Wings conspicuously broad, their venation like that of the preceding species.

Smooth and shining, with small, indistinct and scattered, piligerous punctures; mandibles with a few coarse punctures.

Hairs yellowish, rather long, sparse, suberect, covering the body and legs but absent on the flexor surfaces of the tibiae and tarsi, most conspicuous on the gaster. Legs and antennæ also covered with fine whitish pubescence.

Yellowish brown, antennæ and legs paler yellow; space between the ocelli jet black; mandibular teeth and two longitudinal streaks on the mesonotum dark brown. Wings brownish hyaline with yellow veins and stigma.

A single specimen taken by Prof. Nils Holmgren at San Firmin, Bolivia, and loaned by the Royal Museum of Stockholm.

I believe there can be little doubt that this male is congeneric with the two preceding species, of one of which it may represent the missing sex. Another male in my collection seems to be distinct and may be given the following name.

***Tranopeltoides peruvianus*, new species**

MALE.—Length, 5 mm.

Closely resembling the preceding species but honey-yellow, except the black area between the ocelli and the two dark brown streaks on the mesonotum. The wings are also paler, with pale yellow veins and stigma. The angles of the epinotum are obsolete, the petiole and postpetiole are shorter and their nodes more depressed above. The greatest difference, however, lies in the length of the antennal joints, the third to sixth funicular being distinctly shorter than in the Bolivian species and the second funicular distinctly swollen at the base. The eyes are somewhat less convex and the cheeks, though extremely short, are nevertheless perceptible. The long hairs are lacking on the extensor surfaces of the hind tibiæ and there are only a few of them on the fore and middle tibiæ. The oblique or subappressed pubescence on the antennæ, and especially on the legs, is distinctly longer.

A single male from Callanga, Peru, purchased many years ago from Staudinger and Bang-Haas. The terminal joints of both antennæ are missing. This male, too, may perhaps belong to one of the females described above.