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New Bees from Brazil

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THE STANFORD EXPEDITION TO BRAZIL, 1911.

J. C. BRANNER, *Director.*

NEW BEES FROM BRAZIL.

By T. D. A. COCKERELL

1912

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NEW BEES FROM BRAZIL.

BY T. D. A. COCKERELL.

The University of Colorado, Boulder, Colo.

Eulæma manni sp. nov.

Male. Length about 19 mm.; anterior wing 16 mm.; facial quadrangle much longer than broad; clypeus high, broadly hollowed (not in the least keeled) in the middle, with a smooth band, bounded on each side by densely punctured regions; this central basin of the clypeus is bounded on each side by obtuse but well-developed longitudinal keels or ridges; labrum tricarinate; a large punctured basin below middle ocellus, the sides of which are continued below as an elevation (grooved in the middle) down middle of supraclypeal area; third antennal joint longer than fourth, but not nearly twice as long; mesothorax anteriorly dull, densely and minutely punctured, posteriorly shining in middle; scutellum shining, with very minute and feeble punctures, and scattered larger ones; abdomen finely granular; middle basitarsi long, with a rounded lobe behind at upper end; hind tibiae greatly incrassate, the protuberances above the spurs small, but the apical half of the posterior side strongly grooved, and ending in three spines or teeth, of which the outer two are much nearest together; hind basitarsi produced to a sharp angle at apex; second s. m. very broad, receiving first r. n. at about the beginning of its

last third; second r. n. joining third t. c. Face and front brilliant green, the middle of the clypeus and supraclypeal area strongly flushed with crimson, the sides of the face with golden; mandibles black; vertex and cheeks a sort of dark copper color, with black hair; antennæ black, flagellum dark reddish beneath; prothorax dark coppery, with black hair; pleura dark purple, with dark hair showing reddish in favorable lights; nearly the anterior half of mesothorax brilliant green, with thin ferruginous hair, the posterior part, and the scutellum black (slightly brassy), with black hair; abdomen clear yellowish-green, with short ferruginous hair, becoming whitish apically, the basal segment with black hair at sides toward base; no bands on abdomen; apex of abdomen bituberculate; ventral surface of abdomen with segments 3 to 5 green, the others dark; tegulæ large, pointed posteriorly, anteriorly with a large green patch; wings strongly dusky, reddish; legs black, anterior tibiæ purple in front; middle tibiæ bronzy behind, in front flattened, dull and without punctures, suffused with carmine, except at apex, where they are bright blue-green; middle basitarsi densely covered on outer side with shining yellowish-white hair; hind basitarsi smooth and concave on outer side, on inner covered with black hair.

Hab.—Abuna, on the Rio Madeira, Brazil (*Mann & Baker*). A magnificent species, but superficially, when seen from behind, looking exactly like the common *E. mussitans* (Fabr.). It may also be compared with *E. superba* (Hoffm.), to the vicinity of which it runs in Ducke's table. *E. manni* will be especially known by its *mussitans*-like appearance, bicolored mesothorax, total absence of a median keel or clypeus, small size of the prominences above the spurs of hind tibiæ, and first abdominal segment colored like the rest. The coloration resembles that of *E. fallax* Smith, but that species has a central keel on the clypeus.

***Xylocopa branneri* sp. nov.**

Female. Length 21 mm., anterior wing 16 mm.; exactly like *X. grisea* Lep., but much smaller, with hair on sides of thorax all black. Abdomen beneath with a median raised line; clypeus smooth in middle except apically, lateral margins strongly elevated; labrum tridentate; wings dark, with bluish green and purple tints.

Hab.—Natal, State of Rio Grande do Norte, Brazil (*W. M. Mann*). Named after Dr. J. C. Branner, leader of the expedition.

***Centris* (*Hemisia*) *bakeri* sp. nov.**

Male. Length about 13 mm., anterior wing 11; head and thorax black, with fulvous pubescence above, white below, and on cheeks and occiput, hairs of middle of vertex stained with fuscous; face narrow, eyes diverging below; clypeus strongly raised, with a broad flattened face, the sides of which are sparsely punctured; scape.

short, yellow in front; flagellum reddish-black, apical half of the long first joint red beneath; clypeus (except a very broad black bar on each side), a transversely crescentic supraclypeal mark, lateral marks (pointed above on orbital margin), the short malar space, labrum and more than basal two-thirds of mandibles all lemon-yellow; tegulae ferruginous, dark at base; wings reddish-smoky, nervures fuscous; legs black, with the tarsi, hind femora apically, and hind tibiae for the greater part (the basal half behind) ferruginous; spurs ferruginous; spot at base of anterior and middle tibiae, and long stripe on anterior tibiae, yellow; hair of legs mostly pale, black on hind tibiae except a large tuft posteriorly on apical half, on hind basitarsi reddish-black without and dark red within, but pale and strongly plumose posteriorly; hair on inner side of anterior and middle tarsi red; abdomen short and broad, dark metallic green, with the apical margin and sides of fourth segment, and the whole of fifth to seventh, clear red, a reddish suffusion also at sides of second and third apically; second and third segments each with large lateral yellow patches, that on the second much the largest, subquadrate; first abdominal segment, except at apex, and fourth and following segments, with pale hair; apex of first, and second and third, with thin short black hair, only visible in lateral view; venter with abundant pale reddish hair.

Hab.—Rio Madeira, Brazil; Madeira-Mamore R. R. Co. Camp 43 (Mann & Baker). This is 325 km. from Porto Velho. *C. bakeri* is a species of the *C. versicolor* group, recognizable by the yellow patches on the sides of the abdomen. *C. haemorrhoidalis* (Fb.) has a yellow spot on each side of the second abdominal segment, but the abdomen is quite a different color, and the thorax is dark-haired.

The three species of *Hemisia* in the collection are separable thus:

- Wings bicolored, very dark, with broadly pallid apical field; hair of vertex (♀) black. *maculata* Lep.
 Wings not bicolored. 1
 1. Abdomen yellowish-green, the hind margins of the segments pallid, but the apex not red; cream-colored spots at sides of segments 2-5, that on 2 a mere dot. *enea* Lep.
 Abdomen dark green, red apically; yellow patches on sides of second segment very large. *bakeri* Ckll.

Centris (*Ptilotopus*) *heterodonta* sp. nov.

Female. Very robust; length about 19 mm., anterior wing about 12; black, the legs and the end of the abdomen red; hair of head and thorax fulvous, without black or fuscous, paler beneath, becoming dull white on lower part of cheeks; scape thick, yellow in front; flagellum dark, ferruginous at extreme apex; clypeus convex with a large median cup-shaped black area, on which is a longitudinal yellow band, this band smooth and shining, but the black space on each side of it dull, with

scattered strong punctures; very broad anterolateral areas of clypeus yellow, as also are the lateral face-marks, which are triangular, the upper edge nearly straight, but with a linear process extending a short way up orbital margin; labrum pale yellow, broad, but with a median apical spine, which is dark reddish; no supra-clypeal mark; malar space dark reddish; mandibles strongly curved, very broadly yellow basally, apically broadly red on outer side, teeth four, two apical, one about twice as long as the other (inner one), one broadly truncate and subemarginate on the inner side near the middle, and a short angular one at the base of that; lower part of sides of prothorax red; truncation of metathorax with a large whitish patch on each side; tegulae light ferruginous; wings strongly dusky, marginal cell smoky, strongly appendiculate, the area above the appendicular nervure fuliginous; anterior and middle tibiae with a yellow spot at base, and indications of a stripe on anterior pair; hair of legs bright ferruginous, cream-colored on anterior legs behind; scopa of hind tibiae and basitarsus very large, strongly plumose, a very fine coppery red; abdomen with the first three segments black above, the hind margins of second and third dark red, the remaining segments red, the fourth dark basally; first segment with pale fulvous hair; second and third with very short inconspicuous black hair, the others with red hair; venter ferruginous; apical plate truncate.

Hab.—Porto Velho, Rio Madeira, Brazil (*Mann & Baker*). A very fine species, not close to any known to me. It is placed in *Ptilotopus*, but in spite of its lack of metallic color, it is doubtless allied to the species of *Hemisia*. In Friese's table of *Melanocentris* (*Ptilotopus*) it runs to 22, and except for its rather smaller size, on to the vicinity of *fuscata* or *fusciventris*, which it does not resemble. In the table of species with red abdomen it cannot be made to fit anywhere. It cannot be run to anything in Schrottky's tables of Brazilian or Paraguayan species.

Centris (*Ptilotopus*) *libertatis* sp. nov.

Female. Length about $11\frac{1}{2}$ mm.; black, the head and thorax with fulvous pubescence, becoming white beneath, fuscous on vertex; clypeus much broader than long, rugose, with a longitudinal keel, a median triangular area black, the apex of the triangle downwards, the lateral areas, almost meeting below, yellow; a narrowly crescentic supraclypeal mark, lateral face-marks filling space between clypeus and orbit and sending a narrow band up orbital margin beyond level of antennae, labrum entirely, and more than basal half of mandibles, all lemon-yellow; mandibles rather slender, not dentate; eyes yellowish-green; antennae short, black, first joint of flagellum elongated; mesothorax and scutellum densely punctured; a slender hairless line along hinder middle of mesothorax, but no other bare space; tegulae closely and minutely punctured, ferruginous, with broad whitish margin; wings strongly infuscated, nervures piceous, very heavy; the three submarginal cells about equally long below, the second broader than high, little produced at upper apical corner, receiving first r. n. about middle; marginal cell short, with a ful-

iginous streak at base; legs black, the middle and anterior tibiae with a yellow spot at base; hair of legs black, in part very dark fuscous, thin and yellowish-white on outer side of anterior tibiae, and a fringe of the same color on their femora; scopa of hind legs black, large and very coarse; abdomen black, moderately shining, with short black hair, the first segment without pale hair, but that of the fifth thin and white (best seen in lateral view), with an apical chocolate-colored fringe, and long chocolate hairs on each side of apical plate; beneath, the fourth segment has a conspicuous fringe of light hair.

Hab.—Independencia, Parahyba, Brazil (*Mann & Heath*). At first sight this seems a most ordinary little species, just like several of the *nitida* group. On closer examination, it appears not to be a typical *Centris*, by reason of the venation, which in Schrottky's table of Brazilian genera, would throw it out of *Centris* altogether. It is however actually allied to some of the *nitida* series, especially perhaps to *C. birkmanni*; Friese, which however has a much shorter first s. m., and the clypeus entirely black in the females.

Centris ceratocephala sp. nov.

Female. Length about 14 mm., unusually long and slender for a *Centris*, head and thorax black, abdomen bright red; legs red, the anterior ones, and the middle tibiae, suffused with black. Very close to *C. bicornuta* Mocsary, having the same peculiar structure, but larger; the shining clypeus black with a triangular yellow mark on each side; wings dusky, but not dark; abdomen with the first segment suffused with blackish, but its hair all pale fulvous; second and third segments bare, fourth with fuscous hair, fifth with fulvous; scopa of hind legs entirely light fulvo-ferruginous. There is much black hair on the head above, both before and behind the ocelli. Mandibles bidentate; labrum longer than broad, black with two very large elongate yellow patches, which nearly meet in the middle line below, apex strongly bidentate, lateral margins obtusely angulate near the middle; teeth at sides of apex of clypeus long, black, cylindrical. Eyes dark brown. Hair of thorax above fulvo-ferruginous, without any dark.

Hab.—Manaos, Brazil (*Mann & Baker*). Possibly a subspecies of *C. bicornuta*. Manaos is more than a thousand miles from the type locality of *bicornuta*.

Dianthidium heathi sp. nov.

Male. Length about 5 mm.; head and thorax strongly and densely punctured; clypeus, mandibles except apex, broad bands along inner orbits and two long narrow bands passing just mesad of antennal sockets, all pale yellow; scape ferruginous; a continuous orange band across occipital region; mesothorax with very large punctures, black with somewhat more than the lateral thirds of the anterior margin broadly yellow; a broad yellow band from axillae across scutellum, narrowly inter-

rupted in middle; legs reddish, blackish and yellow, the anterior femora and tibiae broadly striped with yellow; tegulae deep ferruginous, with an orange spot; marginal cell and apical part of wing dark fuliginous; abdomen black, with very broad oblique orange bands, widely separated in middle, on first segment, on second a narrowly pear-shaped yellow mark on each extreme side, on third a narrow yellow band on each side ending mesad in a very large elongate club, on fourth to sixth entire bands, that on sixth notched in front; seventh segment cream-color, the lateral corners with long straight spines, the truncate ends of which are dark, while in the middle is a very slight prominence. So close to *D. gregarium* (*Hypanthidium gregarium* Schrottky) that I had considered it identical, until I noted the antennae, which in *heathi* are long but quite normal, the flagellum slender but not crenulate, dark above, ferruginous below, whereas in *gregarium* the flagellum is very long, strongly crenulate below, each joint light ferruginous with the base black, but the last entirely black; the armature of the apex of the abdomen is quite the same in both. These forms have pulvilli, and represent an aberrant section of *Dianthidium*.

Hab.—Independencia, Parahyba, Brazil (type locality), 3 males (*Mann and Heath*); Natal, Brazil, one male (*W. M. Mann*). The *D. gregarium* compared is from Villa Encarnacion, Paraguay, collected by Schrottky. An apparently allied species is *Anthidium pygmaeum* Friese, known only in the female. Judging from Friese's description, our species is too different from *pygmaeum* to be its male.

***Ceratina chrysocephala* sp. nov.**

Female. Length about $9\frac{1}{2}$ mm.; head and thorax very strongly and coarsely punctured, golden-green, the head with golden tints, the mesothorax with crimson, the posterior disc of mesothorax with a smooth dark area; pubescence very scanty, thin and white on pleura and sides of metathorax; mandibles and labrum entirely black; clypeus dull in the middle, and with large punctures, the lower margin with a very broad transverse orange band, not reaching lateral corners; lateral face-marks orange bands, very broad below, rather irregular on inner side, ending above at about level of antennae; posterior orbits with broad orange bands, the upper part leaving the orbit; antennae red as far as fourth or fifth joint, dark piceous or black beyond; scutellum closely punctured, roughly granular posteriorly; tubercles green; tegulae dark chestnut; wings deep fuliginous, with violet tints; legs more or less green; anterior tibiae with a yellow stripe, connecting with a spot at apex of femur; middle tibiae with a yellow basal spot, hind tibiae ferruginous at base; hind tibiae with much white hair; middle femora conspicuously angled beneath toward base; abdomen shining dark bluish-green, with slight brassy tints, strongly punctured; sixth ventral segment subcarinate.

Hab.—Manaos, Brazil (*Mann & Baker*). In Schrottky's table of Brazilian species this runs to the vicinity of *C. longiceps* Sm. and *cupriventris* Sm. The shape of the head is not at all as in

longiceps, while the colors and markings disagree with *cupriventris*. In Schrottky's later table (Zeits. Hym. Dipt., 1907, p. 480) this runs to *C. gossypii* Schrottky, which really seems to be closely allied, but in *gossypii* the pleura is finely punctured, the scutellum is blue-green, and there are various other differences. Comparison with other recent descriptions does not indicate identity in any case.

Ceratina manni sp. nov.

Female. Length about $4\frac{1}{2}$ mm.; dark but shining bluish-green, the apical half of the abdomen roughened; sides of front hardly punctured; a large broad elongate (vertical) mark on clypeus, a small broad-oval mark on each side of it, a broad elongate mark (like that on clypeus, but smaller) along each anterior orbit opposite antennæ, and a stripe on each cheek (receding from orbit) all ivory-white; mandibles and labrum dark, the labrum and apical half of mandibles obscurely reddish; antennæ black basally, the thick flagellum light ferruginous below, dark rufopiceous above; tubercles broadly white margined; tegulæ dark reddish; wings dusky. The mouthparts are not greatly elongated. Tarsi dusky reddish; anterior tibiæ with a pale stripe. (In *C. lucidula* the legs are pale testaceous.)

Hab.—Independencia, Parahyba, Brazil, 6 females (Mann & Heath). This little species resembles *C. nautilana* Ckll., but is at once distinguished by the five light marks on face. It also resembles, on account of its small size, *C. lucidula* Sm., *muelleri* Friese, *gossypii* Schrottky, and *minima* Friese, but it will not agree with any of them. Ducke says that *muelleri* is the same as *lucidula*, but the legs are quite differently colored. *C. minima* is known only in the male, but I am confident that *manni* is not its female.

Melipona pseudocentris sp. nov.

Worker. Length about $11\frac{1}{2}$ mm.; head and thorax with pale fulvous pubescence, bright orange-fulvous in middle of pleura; clypeus light ferruginous, the upper border infuscated, a median stripe and the lateral corners cream-colored; a crescentic cream-colored supraclypeal mark, bordered above by ferruginous; cream-colored lateral face-marks broad below, narrowing above, ending above level of middle of front; scape red; third antennal joint conspicuously red beneath; abdomen bright chestnut red, with coarse black hair in apical region, but tuft at extreme apex ferruginous; legs red and black. Extremely close to *M. rufiventris* Lep., from which it differs in its larger size and considerably darker abdomen. The legs are marked exactly as in *rufiventris*, and the face markings essentially agree.

Hab.—Manaos, Brazil (Mann & Baker). I should have considered this a local race, or perhaps individual variety, of *M. rufi-*

ventris, were it not that the two specimens are quite alike, while a *rufiventris* from Abuná exactly agrees with one from F. Smith's collection, now in my possession. There is accordingly some evidence of stability in the comparatively slight characters noted. The name of the species is derived from the fact that superficially it is exactly like a red *Centris*, such as *C. tarsata* Smith. Ducke asserts that *M. mixta* Lep. is the same as *rufiventris*, but Lepeletier says the hair of the head and thorax in *mixta* is black. Ducke also makes *M. fulva* Lep. a synonym of *rufiventris*, but according to a specimen before me, from F. Smith's collection, it is quite distinct; the legs, as Lepeletier describes, are fulvous, the hind tibiae without black markings, although the anterior and middle tibiae are strongly infuscated. In *rufiventris* the hind tibiae are red with about the apical half black, and there is long black hair on the posterior margin.

Melipona abunensis sp. nov.

Worker Length 10 mm. or slightly more; head, thorax and legs black, the large apical tarsal joints dark red; abdomen chestnut red, without bands; head broad; clypeus bare, dullish, minutely roughened, with a feebly indicated median dark red stripe; mandibles black, edentate; malar space large; sides of face bare; scape black, red at extreme base; flagellum reddish beneath; vertex with long black hair, occiput with light fulvous hair; mesothorax shining black, more than the posterior half bare, anterior part with long black hair, with shorter pale hair intermixed; scutello mesothoracic suture with black hair in front and pale behind; scutellum prominent, wholly black, apically with a tuft of long black hair, but the hind margin with long pale fulvous hair; sides of metathorax with pale hair; hair of pleura pale anteriorly, but black below wings; anterior femora fringed with whitish hair behind, their tarsi with red hair on inner side; the broad hind tibiae fringed with black hair; tegulae ferruginous; wings orange-ferruginous, with ferruginous nervures; hair of apical part of abdomen mainly ferruginous, but some dark hair at sides of the last three segments; first abdominal segment with a black spot on each side.

Hab.—Abuná, Rio Madeira, Brazil (*Mann & Baker*). The general appearance is like an overgrown *M. mandacaia* Sm., with the abdomen much brighter red. On more detailed comparison there are many differences, as in the color of the legs and base of abdomen.

Trigona manni sp. nov.

Worker. Length $7\frac{1}{2}$ –9 mm., the wings about 8 mm.; rufotestaceous, the head black, marked with very pale yellow, and the mesothorax black or piceous, mar-

gined with yellow; pubescence light fulvous; mandibles light yellow, black at tip, with a strong tooth at inner corner; malar space narrow but distinct; clypeus, except a pair of subobsolete reddish bars, elongate supraclypeal mark (its upper part reddish), and broad lateral face-marks, all pale yellow, the lateral marks filling space between clypeus and antennæ and eyes, ending squarely a little above level of antennæ; front and mesothorax pruinose with fine yellowish-gray hair; scape pale yellow-testaceous, black above at apex; flagellum dark above and ferruginous beneath, last joint red also above; prothorax yellow; narrow lateral margins of mesothorax yellow, and anterior margin broadly subtestaceous, except a central portion, which is dark; tegulæ rufo-fulvous; wings very long, suffused with orange, except the broad apical field, which is grayish; nervures ferruginous; legs bright ferruginous, with ferruginous hair, but the broadly expanded apical part of hind tibiæ piceous, the hind basitarsi black, and the small joints of hind tarsi dark red; abdomen of the long and narrow type, shining, with scanty red hair.

Hab.—Porto Velho, Rio Madeira, Brazil, two, one the type (*Mann & Baker*). Also one from Abuná, Rio Madeira (*Mann & Baker*). Related to *T. clavipes* (Fabr.), which it resembles a good deal in the markings of the head and thorax, but much larger, with longer wings, the scutellum wholly light, etc. It is one of the species placed in the subgenus *Tetragona*.

Trigona rhodoptera sp. nov

Worker. Length about $7\frac{1}{2}$ mm., the very ample wings a little over 8; head black, with the clypeus, supraclypeal area, and more than lower half of cheeks (except a band along orbits) ferruginous; hair of vertex and front dark fuscous; sides of face pale grayish pollinose; cheeks densely covered with a short pale yellowish tomentum; eyes ferruginous; mandibles quinquedentate, dark reddish, blackish apically; malar space quite distinct; scape ferruginous, black above at apex; flagellum clear ferruginous beneath, black above, except at apex; thorax entirely bright ferruginous red, with hair of the same color; tegulæ red; wings very red, orange-fulvous, nervures clear red; legs red, with the greatly broadened hind tibiæ more or less infuscated, having especially a black patch covering the inner half (on both sides of the tibia) apically; middle and hind tarsi infuscated; long hair on margin of hind tibiæ sooty; abdomen short, very shiny, dark fuscous with the base pale rufotestaceous.

Hab.—Type from Abuná, Rio Madeira, Brazil (*Mann & Baker*). Also one from Madeira-Mamore R. R. Co. Camp 41, Rio Madeira, Brazil (*Mann & Baker*). Superficially not unlike *T. manni*, but entirely different in the markings of head and thorax and character of the mandibles. *T. pallida* Latr., also collected at Abuná, is much smaller, with differently colored wings. *T. williana* Friese must be a similar insect, but it has ferruginous hairs on the hind

tibiæ, and the margins of the wings broadly smoky; the head also must be different.

***Trigona frontalis flavocincta* subsp. nov.**

Worker. Like *T. frontalis* Friese, but the pale markings of the thorax light yellow instead of white; all the femora and anterior and middle tibiæ and tarsi, clear ferruginous. Length 3 mm.

Hab.—Independencia, Parahyba, Brazil (*Mann & Heath*). Friese described *T. frontalis* from Honduras, without citing any precise locality or collector. Professor C. F. Baker kindly sent me four which he collected at Chinandega, Nicaragua. Some of the same lot, he informed me, were determined by Friese.

***Trigona pellucida* sp. nov.**

Worker. Like *T. amalthea* (Oliv.) except that the wings are clear, somewhat milky, with the apex a little dusky, the stigma and nervures bright clear ferruginous; abdomen sepia-brown basally; hind tibia reddish, but dark; small joints of tarsi deep ferruginous. Length $5\frac{1}{2}$ mm., anterior wings 5. Mandibles dentate, obscure reddish at apex. Dorsal surface of abdomen distinctly keeled.

Hab.—Porto Velho, Rio Madeira, Brazil, one (*Mann & Baker*). This seems to be related to *T. amalthea* as *T. flavipennis* Friese is to *T. ruficrus*. Possibly both represent mutations.

***Trigona branneri* sp. nov.**

Worker. Length $6\frac{1}{2}$ mm., anterior wing $6\frac{2}{3}$; like *T. guianæ* Ckll., but smaller, with the wings only very faintly dusky, with a yellow stain in the base of the marginal cell and along the subcostal and basal nervures; abdomen shining black; short tomentum of thorax above dark fuscous, hardly noticeable; mandibles dark castaneous, dentate. The series of eight is quite uniform in appearance. Compared with *T. ruficrus*, it is at once known by the pale wings, and the black hind legs; compared with *T. amalthea*, it is larger, with pale wings, and the scape and flagellum both chestnut red beneath. The wings, although pale, are dusky compared with those of *T. pellucida*. I might think *T. branneri* to be *T. flavipennis* Friese, but Friese says the posterior tibiæ of his species are more or less fulvous, which is not true of ours. A species which superficially looks just like *T. branneri* is *T. postica* (Latr.), but *postica* has a dull abdomen (except the extreme bases of the segments), with two patches of light pubescence on the fifth segment, and also a finely rugose punctate mesothorax.

Hab.—Manaos, Brazil, eight (*Mann & Baker*).

Trigona spp.

Twenty-three specimens from Porto Velho, Abuná and Madeira-Mamore R. R. Co. Camp 41, represent at least three species of the *amalthea* group, which I do not at present attempt to describe. It appears that in this group of *Trigona* there exist numerous very closely allied races or species, but at present it is difficult to define them or to decide whether they are really distinct from various previously published members of the genus. They should be collected, like ants, in large numbers from individual nests.

Coelioxys ardescens sp. nov.

Male. Length 10 mm. or slightly over; black, with the tegulae and legs bright ferruginous; hind tarsi black, abruptly contrasting with the red tibiae; first abdominal segments, and sides and extreme base of second and third, dark red; ventral surface of abdomen wholly dark red, with white hair-bands; eyes brownish-gray, with very short hair; mandibles red, black at apex; lower part of cheeks and base of mandibles with very dense pure white hair; face and front densely covered with silky pale fulvous hair; vertex flattened, strongly punctured, with very short and scanty black hair; antennae entirely black; mesothroax shining, with very large scattered punctures; an undulating band of hair along front of mesothroax, a stripe (enlarging posteriorly) at sides, and two transverse patches in scutello-mesothoracic suture, all lively fulvous; hair of under side of thorax white; scutellum smooth, impunctate in middle, with large punctures at sides, apex angularly produced and slightly upturned; axillar spines rather short; wings hyaline, faintly dusky, the apical margin broadly dusky; stigma ferruginous, nervures fuscous; anterior coxal spines short and stout; tibial spurs red; abdomen shining, first segment rather sparsely punctured, the others largely impunctate in middle, except at base and apex; first segment with an entirely uniform, narrow yellowish hair-band; third to fifth with subdorsal transverse stripes of grayish tomentum, and second to fifth with apical hair-bands at sides only; sixth segment elongate, deeply and broadly sulcate in middle, with a long sharp spine on each side near base, the four apical spines sharp, the lower somewhat the longest; venter sparsely punctured, with very faint indications of a keel. The scutellum shows no trace of a keel.

Hab.—Porto Velho, Rio Madeira, Brazil (*Mann & Baker*). Of the genus *Coelioxys* no less than 94 neotropical species have been described, but I cannot identify this with any of them. It appears to be close to *C. laevigata* Smith, from Pará, but the angular apex of the scutellum of our species can hardly be called "a broad spine," while the account of the abdominal banding does not at all agree. In Schrottky's table in his Catamarca paper (1909) *C. ardescens* runs to *C. edentata* Schrottky, and agrees well in several

respects, but that species is evidently much more closely punctate, and the lateral spines of the sixth segment are said to be short. In Schrottky's table of Brazilian species it runs to the vicinity of *C. agilis* Sm., which is smaller, with no red on abdomen, and *C. rufopicta* Sm., which is larger, with darkened wings in which are irregular transparent spaces. In Holmberg's table (1903) it runs out at 23, because the fourth ventral segment is perfectly simple, without any process or teeth. In Friese's Argentine table (1908) it runs to a species doubtfully determined by him as *C. simillima* Sm., but I have seen the type of *simillima*, and it has a dark stigma (cf. Trans. Am. Ent. Soc., XXXI, 335). Comparison with the various species not included in the tables does not indicate identity in any case. Among the northern species, our insect is to be compared with the Mexican *C. otomita* Cresson, to which it must be closely allied, differing however in the abdominal banding.

Cænonomada tertia sp. nov.

Male. Length $8\frac{1}{2}$ - $9\frac{1}{2}$ mm.; structure as in *C. bruneri* Ashm.; bright lemon yellow and black, the thin long hair very pale fulvous above, white beneath; eyes fusco-ferruginous; clypeus very prominent, bright lemon yellow with a black band along upper margin, above which is a large semicircular supraclypeal mark; labrum, basal two-thirds of mandibles, and broad bands along anterior and posterior orbits, all yellow, the band along anterior orbits ending in a sharp point on orbital margin little below level of anterior ocellus; front shining, concave; scape greatly swollen, bright yellow, with a triangular black patch at end; flagellum ferruginous, dark fuscous above, with the structure typical of the genus; upper part of prothorax broadly yellow; mesothorax dull black, the lateral margins and two very conspicuous longitudinal stripes (not reaching anterior or posterior margin) yellow; pleura with an elongate yellow patch; axillæ, anterior half of scutellum, postscutellum, and a very large C-shaped mark on each side of metathorax, yellow; area of metathorax triangular, black; legs yellow, black at base; hind tarsi ferruginous, with ferruginous hair on inner side; hind femora yellow on outer side, black beneath, on inner side black with two large yellow marks; abdomen bright yellow with six broad black bands; apical plate yellow, black at apex; venter black in middle, yellow at sides; tegulæ fulvotestaceous, with a yellow spot; wings moderately dusky; venation normal, third s. m. much longer than first or second. The six-jointed maxillary palpi are very slender. Hind tibia with one spur very large, the other very small.

Female. Length $10\frac{1}{2}$ mm.; similar to the male, but the yellow not so bright, and with the usual sexual differences; clypeus shining black, punctured, with about the lower half pale yellow, except in middle; lateral face-marks broad below, but abruptly cut-off at about level of antennæ, except for a slender line which continues

up orbit; scape not enlarged, black with the basal two-thirds yellow in front; yellow markings of thorax nearly as in male, the two stripes on mesothorax well-developed, but the tubercles are entirely dark, the pleura has no yellow mark, the yellow band on scutellum is broadly notched behind, and the yellow of the metathorax is reduced to an irregular mark shaped rather like an agaric, at each side of the enclosure; tegulae rufous, with a very small yellowish spot; legs black, anterior pair with a yellow stripe from near middle of femora nearly to end of tibiae; middle legs with a yellow patch on apex of femora and base of tibiae, hind legs with a yellow mark at end of femora; anterior and middle tarsi thick, with reddish hair; posterior knee-plate large, long-oval, covered with dark reddish hair; long hair of hind tibiae and basitarsi white on outer side, shining yellowish-white on inner side of tibiae, dark fuscous on inner side of basitarsi; both tibial spurs of hind legs large; apical plate of abdomen with fine concentric striae; apical hair chocolate, but ventral segments fringed with white hair; venter all black.

Hab.—Independencia, Parahyba, Brazil, 2 males, 1 female (*Mann & Heath*). This is the third known species of *Cænonomada*. It is close to *C. bruneri* Ashm., but easily separated by the presence of large yellow stripes on the mesothorax in both sexes, and other details of the markings. From *Cænonomada pluricincta* (*Tetrapedia pluricincta* Vachal), from Goyaz, it is separated by the yellow markings of the thorax, the color of the legs, etc. Vachal suggests that *Epicharis unicalcarata* Ducke may also prove to belong to *Cænonomada*. Vachal protests against the use of Ashmead's generic name *Cænonomada*, on the ground that the description was insufficient, and the insect was placed in the wrong family. I believe, however, that *Cænonomada* must be considered to have been established according to the rules, although one could wish it were possible to adopt instead Holmberg's *Chacoana*, which was well-defined and well understood by its author.

Psænythia canina sp. nov.

Male. Length about 8 mm.; black with bright lemon-yellow markings, no red on head, thorax or abdomen; head extremely broad, eyes diverging below; clypeus with long pointed lateral lobes; clypeus (except two dots and lower margin), a large quadrate area (twice as broad as long) on labrum, broad lateral face-marks shaped like the mainsail of a schooner, large dog-ear marks, and an elongated mark on upper part of cheeks, all yellow; supraclypeal area and scape entirely black; flagellum ferruginous beneath, darkened basally; mandibles long and slender, the basal half yellowish, the apical red; front rugose, cheeks shining; mesothorax shining, very finely and closely punctured; upper border of prothorax, tubercles and a spot behind them, a pair of oblique marks extending over axillae and side of scutellum, a stripe on postscutellum, and two marks near the middle of the base of meta-

thorax, all yellow; scutellum shining, the punctures larger and much less dense than on mesothorax; legs piceous, the small joints of tarsi light reddish-brown; a small spot on all the knees, stripe on anterior tibiae, and base of middle tibiae above, yellow; hind tibiae with silvery-white hair; tegulae light fulvotestaceous; wings dusky; abdomen with bright yellow bands on first six segments, widely interrupted on second and third, with a linear interruption on the others; apical plate very large, obtusely emarginate, bulging laterally; genitalia ferruginous. Third s. m. unusually long.

Hab.—Independencia, Parahyba, Brazil (*Mann & Heath*). In the tables by Schrottky and Friese this runs to *P. burmeisteri* Gerst., which however is much larger, and otherwise different. From all the races of *P. picta* Gerst., it is known not only by the details of the markings, but also by the very much more finely punctured mesothorax. In the shape of the head, and in the face-markings, there is much resemblance to *P. philanthoides* Gerst., but the head is broader, and the colors are quite different. The name *canina* may be taken to refer to the bulldog-like head or to the well-developed dog-ear marks.

Megachile lenticula Vachal.

Female. Length $10\frac{1}{2}$ –13 mm.; black, including the legs, except that the hind coxae, trochanters and basal half of femora are ferruginous above; tegulae clear bright ferruginous, the anterior margin somewhat expanded; wings strongly dusky; hair of vertex, mesothorax and scutellum coarse and black, of sides of thorax fulvous above, whitish below, with a little black hair below the wings; metathorax with pale fulvous hair, and pale hair in scutello-mesothoracic suture; face and front with mixed cream-color and black hair; clypeus and supraclypeal area bare, shining, with scattered punctures; middle of clypeus flattened, sides subrugose, lower margin thickened and broadly concave; mandibles quadridentate; abdomen with narrow entire pale fulvous bands on the second and following segments, and pale fulvous hair at extreme sides of first; basal part of abdomen red beneath; ventral scopa creamy-white, largely black at sides and apex.

Hab.—Porto Velho, Rio Madeira, Brazil (*Mann & Baker*). Madeira-Mamore R. R. Co. Camp 43 (*Mann & Baker*). Male also at Porto Velho. I had regarded the female as a new species, but it is evidently the undescribed sex of *M. lenticula* Vachal. The following table contrasts the female with some species which it resembles.

Ventral scopa "nearly white," without black; abdomen not banded.	<i>nudiventris</i>
Sm.	
Ventral scopa black at apex, and more or less at sides	1

1. Hair around base of antennæ bright rufofulvous.....*constructrix* Sm.
 Hair around base of antennæ not brightly colored.....2
2. Length 9–10 mm.; hair of face mainly black.....*schrottkeyi* Vachal
 Length 10½–13 mm.; hair of face as much pale as black.....*lenticula* Vachal.

Megachile virescens sp. nov.

Female. Length about 12 mm.; black, the tarsi dark brown, the dorsum of abdomen with variable, sometimes very conspicuous, green tints, with also suggestions of dark purple; hair of head and thorax white, the dense bands in front and behind the scutellum, the dense tuft behind the tegulæ, and to some extent the hair of upper part of sides of thorax, creamy-tinted; vertex with short black hair; hair of legs white, orange-ferruginous on inner side of tarsi; abdomen with moderately broad, entire creamy-white hair-bands at the apices of the segments; sixth segment with appressed gray hair; ventral scopa yellowish-white, black on last segment; mandibles quadridentate, black, with an obscure reddish subapical band; clypeus and supraclypeal area shining, strongly punctured, the punctures sparse in middle, antennæ black; area between the ocelli with large well separated punctures, but that on either side of them densely and minutely punctured, in complete contrast; mesothorax with the anterior half dull, the posterior half shining, with fine punctures of various sizes, but none large; scutellum posteriorly with black hair; tegulæ piceous, finely punctured; wings strongly dusky, posterior basitarsi broad and flat; abdomen of the triangular type.

Hab.—Baixa Verde, Rio Grande do Norte, Brazil (*Mann*).
 Extraordinarily like *M. decepatrix* Sm. from S. Domingo (West Indies), but the flagellum in Smith's species is fulvous beneath. It is also very close to *M. chrysophila* Ckll., from Mexico, but that has a densely granular abdomen, without green tints.

Megachile microsoma sp. nov.

Male. Length about 6½ mm.; black, the anterior tibiæ slightly reddish in front, the hind tibiæ distinctly reddish on inner side toward apex; head very large, as large as thorax, abdomen short; hair of head and thorax above scanty, partly black and partly pale yellowish (the latter easily overlooked); front and area just below the antennæ with black hair, but pale hair at sides of face, and lower margin of clypeus densely covered with silky white hair; cheeks below with long white hair; under side of thorax with dense white hair; basal part of abdomen with short black hair, but sides of third segment at apex, a broad entire apical band on fourth, all of fifth (densely only at apex), and all of sixth very densely, covered with pale fulvous hair; hair of legs scanty and white, fulvous on inner side of tarsi; clypeus shining, with large strong punctures, which are very sparse in middle; supraclypeal area entirely dull, densely granular; antennæ long, entirely black; mesothorax finely and closely punctured; tegulæ rufopiceous, very dark; wings dusky, the costal region very dark; stigma rather large; anterior legs simple, their coxæ unarmed; sixth abdominal segment retracted, with two distant sharp black teeth.

Hab.—Porto Velho, Rio Madeira, Brazil (*Mann & Baker*). This little species resembles the Mexican *M. bidentis* Ckll., but differs in the color of the wings, dark fuscous nervures, and somewhat larger head. They are however closely related. The color of the nervures and tegulæ will also separate *M. microsoma* from the South American *M. pilosa* Sm.

Megachile permunda sp. nov.

Male. Length about 9 mm.; black, the femora and tibiæ a rather lively chestnut red, all the tarsi light yellow; a short compact species, superficially like the Australian *M. sequior* Ckll.; eyes light green, the lower part tinged with red; mandibles and antennæ black, the flagellum very faintly reddish below; face densely covered with shining golden hair; lower part of cheeks, and under side of thorax, with pure white hair; the broad vertex, and thorax above, with long erect dark fuscous hairs, but mesothorax margined all round, and scutellum in front and behind, with dense fulvous tomentum, the edge of the fulvous area in front of mesothorax trilobed or tridentate posteriorly; abdomen with entire pale fulvous apical hair-bands, but band on fourth segment broadly interrupted, while fifth has no apical band, but its basal third or more is densely covered with appressed fulvous hair; sixth segment densely covered with creamy-white hair, except the projecting margin, which is broadly emarginate, but otherwise simple; ventral segments with white hair-bands; apical antennal joint slightly broadened; mesothorax and scutellum dull, densely granular; tegulæ dull ferruginous; wings dusky; anterior coxæ with strong black spines; anterior tarsi hardly broadened, but with a long white fringe behind, on the inner side of the fringe is some black hair; middle tarsi posteriorly with extremely long white hair; hind tarsi with long white hairs in front; spurs yellowish-white.

Hab.—Natal, Brazil, two males (*W. M. Mann*). Except for the almost simple anterior tarsi, this much resembles the Mexican *M. veraecrucis* Ckll.

Exomalopsis paraguayensis manni subsp. nov.

Female. Length about $8\frac{1}{2}$ mm.; black, the mesothorax, scutellum and abdomen shining; agrees with the description of *E. paraguayensis* Schrottky, except as follows: mesothorax shining, not very densely punctured, the anterior third with scanty pale hair, the posterior part with very scanty black hair, easily overlooked; scopa of hind legs creamy-white, the basitarsi densely black-haired behind; wings dusky at apex; stigma large, amber-color, nervures more dusky; tegulæ rufopiceous. The head is broader than long, and the abdomen is elongate, not subglobose as in many *Exomalopsis*. The base of the metathorax is roughened. The mandibles are black, with a bright red spot about the middle. The b. n. goes basad of t. m., and second s. m. is very small.

Hab.—Natal, Brazil (W. M. Mann). Probably a distinct species, but agreeing so nearly with the description of *D. paraguayensis* that I leave it for the present as a subspecies.

Tapinotaspis heathi n. sp.

Male. Length about $8\frac{1}{2}$ mm., anterior wing nearly 8; shining black, the supraclypeal region, front and abdomen very brilliant; pubescence mainly black, but dense and shining creamy-white on clypeus and sides of face, long silvery hairs project below mandibles, the anterior half of pleura has long plumose white hair, anterior legs with white hair on outer side, hair on inner side of hind tibiae dull white, and on inner side of their tarsi pale ferruginous; fourth abdominal segment with a tuft of white hair on each side, fifth and sixth with white hair at sides, and dorsally in the subapical region with glittering, pale, partly metallic hairs; under side of abdomen with black hair-bands; hair of thorax above, and the very abundant hair of middle legs, all black; malar space obsolete; supraclypeal area smooth and impunctate; antennae long and slender, scape black, flagellum ferruginous, pale beneath, the first joint largely dark, *the last three joints on inner side, and a square patch on apical part of the one before, shining snow-white*; mesothorax microscopically sculptured; anterior wings dark fuliginous, the apical field very large, nervures fuscous, stigma rather large, reddish; b. n. meeting t. m.; marginal cell obtusely pointed at apex, away from costa; first and second submarginals about equal, third larger; second quadrate, narrowed about a third above, receiving first r. n. almost at its apex; third s. m. broader above than second, receiving second r. n. a little beyond beginning of its last third; lower wings hyaline, darkened on costa and broadly so at apex, anal lobe very well developed; hind basitarsus nearly as long as tibia, produced at end into a thumb-like lobe which is largely red; first three abdominal segments without apical hair, except at sides; fourth with a short purplish-black fringe, fifth and sixth with heavy black fringes; apical plate broadly truncate. The elongate two basal joints of labial palpi are subequal.

Hab.—Independencia, Parahyba, Brazil (Mann & Heath). This may perhaps have been described as a *Tetrapedia* from the female, but if so, there is no way to ascertain the fact. It looks like *Tetrapedia diversipes* Klug, except for the smaller size and the color of the hair on the hind legs. The venation is however entirely different from that of *T. diversipes*, and also very different from *Exomalopsis*, to which genus I next thought to refer it. The reference to *Tapinotaspis* is unsatisfactory, because the second submarginal cell is not at all as in that genus, but it is possible that the definition of *Tapinotaspis* may be altered to include such forms as the present. *Tapinotaspis* is considered by Brethes a synonym of *Tetrapedia*, while a species was described by Friese as an *Exomalopsis*. It is probably a valid genus, or at any rate, the species

now described is generically distinct from both *Tetrapedia* and *Exomalopsis*.

Diadasia Patton.

The three bees described below are referred to *Diadasia*, which is probably distinguishable from *Ancyloscelis*. I have not been able to examine the type of *Ancyloscelis* (*A. ursinus* Hal.), but from what I can learn, I believe it is a *Dipedia* or *Leptergatis*. Holmberg's *Leptometria* and *Teleutemnesta* have been referred to *Ancyloscelis*, but they have an apparently valid character in the hind wings, pointed out by Holmberg; the separation of the discoidal and cubital nervures takes place about half way between the transverso medial and the transversocubital, instead of very much nearer the transversomedial as in *Diadasia*, etc. In this character the bees now described agree with *Diadasia*, and are readily separated from *Leptometria* and *Teleutemnesta*. The North American *Dasiapis*, which in some ways closely resembles *Leptometria*, has the *Diadasia* venation of the hind wings.

Diadasia parahybensis sp. nov.

Male. Length about $6\frac{1}{2}$ mm., the abdomen short and subglobose; black, wholly without light face-markings, the long tarsi, and apical spot on tibiae, ferruginous; eyes pale ochreous; facial quadrangle very much longer than broad; hair of head and thorax very pale ochreous, almost white, quite white below; on vertex the short hair is stained with brownish; flagellum ferruginous beneath; mesothorax shining, with rather dense strong punctures; tegulae dark reddish; wings strongly dusky; b. n. meeting t. m.; middle and hind femora incrassate, but not excessively so; hind spur of hind tibia considerably longer than the other; hind basitarsus gently curved; abdomen covered with a short felt-like reddish tomentum, the hind margins of the segments broadly pallid but also hairy.

Hab.—Independencia, Parahyba, Brazil (Mann & Heath). In Friese's table of *Ancyloscelis* (Flora og Fauna, 1908, p. 51) this runs to 4, and runs out on account of its size, but really comes nearest to *A. riparia* Ducke, with which it agrees in the keeled sixth ventral segment of abdomen; it differs, however, by the dusky wings and the color of the hair of the head. In my table of North American species (Amer. Nat., XXXIX, p. 742) it runs to *Diadasia diminuta* (Cr.), from which it differs at once in the character of the abdominal hair, which in *diminuta* is long and loose.

Diadasia murihirta sp. nov.

Male. Length about 11 mm.; black, the head and thorax with rather dense hair, which is warm ochreous above (fuscous on scutellum, and slightly so on disc of mesothorax) and white below, the transition from one color to the other quite gradual; small joints of tarsi ferruginous; antennæ short for a male, the flagellum obscurely reddish beneath; clypeus densely covered with light hair; mesothorax with small but strong and rather close punctures; hind femora incrassate but not at all subglobose; spurs piceous (in *D. parahybensis* they are cream-color); hind basitarsus curved, red at apex but not prolonged; tegulæ fuscoferruginous, pallid at sides; wings moderately dusky (not reddish as they are in *D. sumichrasti vulpihirta*); abdomen with pale ochreous hair on first segment, the other segments with very short and thin black hair (obscure brown on basal half and sides of second), and broad dense apical ochreous hair-bands; sixth ventral with a large median hair-tuft.

Hab.—Independencia, Parahyba, Brazil, 2 males (*Mann & Heath*). In Friese's table runs to *facialis* Friese, differing in the total lack of light face-markings. In the North American table it runs to the Mexican *D. sumichrasti* (Cr.), but the hair is less brightly colored, while the second s. m., is broader above than in *sumichrasti*, and receives the first r. n. nearer the apex.

Diadasia sumichrasti vulpihirta subsp. nov.

Female. Exactly like *D. sumichrasti* (one of Cresson's cotypes compared) except that it is somewhat larger, the scape is largely red, and the flagellum is partly red beneath, the color especially bright on the second joint and apex of the first. There is a strong contrast between the bright fox-red hair of the mesothorax and region about the tubercles, and the grayish-white of pleura. The abdominal bands are broad and bright ochreous. The mouth-parts are as follows: maxillary palpi 6-jointed, joints measuring in μ (1.) 224 (2.) 416 (3.) 464 (4.) 272 (5.) 176 (6.) 176; apex of second joint, and all of third, with a dense brush of hair on one side; last joint very slender; blade of maxilla about 2400 μ long, about 160 broad near middle, and about 352 near base; maxillary comb very well developed, with about 23 sharp teeth; paraglossæ linear, reaching to a little beyond middle of first joint of labial palpus; labial palpi with first joint about 1170 μ long and 192 broad, second 1010 long; third (arising laterally 160 μ from end of second) 176 long; fourth 160. Labrum about 1360 μ broad and 800 long, apex very obtusely angled, the apical margin with strongly fimbriate hairs.

Hab.—Baixa Verde, Rio Grande do Norte, Brazil (*Mann*). Six females.

The following list enumerates all the bees collected by Mr. Mann and his associates in Brazil.

RIO GRANDE DO NORTE.

- (1.) Natal (
- W. M. Mann & Heath*
-). June, 1911.

<i>Xylocopa brasiliatorum</i> L.	<i>Exomalopsis paraguayensis manni</i> n. subsp.
“ <i>branneri</i> n. sp.	<i>Megachile permunda</i> n. sp.
<i>Centris ænea</i> Lep.	<i>Trigona amalthea</i> Oliv.
“ <i>maculata</i> Lep.	“ <i>ruficrus</i> Latr.
“ <i>lanipes</i> Fabr.	<i>Dianthidium heathi</i> n. sp.

- (2.) Baixa Verde (
- W. M. Mann*
-). June, 1911.

<i>Megachile virescens</i> n. sp.
<i>Diadasia sumichrasti vulpiphirta</i> n. subsp.

PARAHYBA.

- (3.) Independencia (
- Mann & Heath*
-). Collecting was done in the hills north of the city. June, 1911.

<i>Xylocopa grisescens</i> Lep.	<i>Trigona ruficrus</i> Latr.
“ <i>frontalis morio</i> Fabr.	“ <i>amalthea</i> Oliv.
<i>Bombus kohli</i> Ckll.	“ <i>frontalis flavocincta</i> n. subsp.
<i>Centris libertatis</i> n. sp.	<i>Psænythia canina</i> n. sp.
“ <i>bimaculata</i> Lep.	<i>Cænonomada tertia</i> n. sp.
<i>Augochlora diversipennis</i> Lep.	<i>Tapinotaspis heathi</i> n. sp.
<i>Dianthidium heathi</i> n. sp.	<i>Diadasia parahybensis</i> n. sp.
<i>Ceratina maculifrons</i> Sm.	“ <i>murihirta</i> n. sp.
“ <i>manni</i> n. sp.	

PARÁ.

- (4.) Pará (
- Mann, Heath & Baker*
-). Most of the collecting was done in the suburb of Souza, along trails through the forest. July, 1911.

<i>Xylocopa frontalis morio</i> Fabr.
<i>Oxæa festiva</i> Sm.
<i>Trigona recursa</i> Sm.

AMAZONAS.

- (5.) Manaus (
- Mann & Baker*
-). On the Rio Negro. The bees were collected in a little meadow near the hacienda “Kete Purange.” August, 1911.

<i>Bombus cajennensis</i> Fabr.	<i>Trigona clavipes</i> Fabr.
<i>Xylocopa barbata</i> Fabr.	“ <i>amalthea</i> Oliv.
<i>Melissa maculata</i> Friese.	“ <i>branneri</i> n. sp.
<i>Centris bimaculata</i> Lep.	<i>Melipona pseudocentris</i> n. sp.
“ <i>ceratocephala</i> n. sp.	<i>Tetrapedia plumipes</i> Sm. (? = <i>ornata</i> Spin.)
<i>Megalopta idalia</i> Sm.	
<i>Ceratina chrysocephala</i> n. sp.	

- (6.) Porto Velho (Mann & Baker). This is located seven kilometers north of the old native town, San Antonio, which is just below the lowest falls of the Madeira, State of Amazonas. September, 1911.

Megachile microsoma n. sp.

" *lenticula* Vachal.

" *curvipes* Sm.

" *brasiliensis* D. T.

" *flabellata* Vachal.

Coelioxys ardescens n. sp.

Euglossa cordata L.

Centris heterodonta n. sp.

Trigona fulviventris Guér.

" *guianæ* Ckll.

" *silvestriana* Vachal.

" *longipes* Sm.

" *manni* n. sp.

" *pellucida* n. sp.

" sp.

- (7.) Itacoatiara (Mann & Baker). "The town is situated on the north bank of the Amazon, about forty miles below the mouth of the Rio Madeira. The bees were taken about some orchids, which had been brought aboard an anchored boat."

Euglossa cordata (L.)

MATTO GROSSO.

- (8.) Abuná (Mann & Baker). "On the Rio Madeira nearly opposite mouth of Rio Abuná." September 1911.

Xylocopa viridis Sm.

Eulæma dimidata Fabr.

" *manni* n. sp.

Melissa decorata Sm.

Euglossa cordata L.

Melipona rufiventris Lep.

" *abunensis* n. sp.

Centris tarsata Sm.

Trigona pallida Latr.

" *manni* n. sp.

" *rhodoptera* n. sp.

" sp.

- (9.) Madeira-Mamore R. R. Camp 41 (Mann & Baker). "Located on Rio Madeira 306 km. from Porto Velho." September 1911.

Euglossa cordata (L.)

Trigona rhodoptera n. sp.

" sp.

- (10.) Madeira-Mamore R. R. Camp 43. (Mann & Baker). "On Rio Mamore 325 km. from Porto Velho." September 1911.

Megachile lenticula Vachal.

Centris bakeri n. sp.

The following abbreviations are used in the descriptions, in accordance with my usual custom: s. m., submarginal cell; r. n., recurrent nerve; t. c., transverso-cubital nerve; t. m., transverso-medial nerve; b. n., basal nerve.

