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**Miscellaneous Studies on Neotropical Ants
(Hymenoptera, Formicidae)**

By

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(With 47 text-figures)

Contents

Introduction

Subfamily Ponerinae Lepeletier

Ectatomma planidens Borgmeier

Gnamptogenys nana, n. sp.

Trachymesopus compressinodis (Borgmeier), n. stat.

Trachymesopus gilberti, n. sp.

Trachymesopus lunaris (Emery)

Trachymesopus stigma (Fabricius)

Subfamily Myrmicinae Lepeletier

Pogonomyrmex (Ephedomyrmex) naegelii Forel

= *P. (E.) venezuelensis* Weber, n. syn.

= *P. (E.) venezuelensis rupununi* Weber, n. syn.

Hylomyrma reitteri (Mayr)

= *H. goeldii* (Forel), n. syn.

Hylomyrma balzani (Emery)

= *H. speciosa* (Borgmeier), n. syn.

Pheidole gertrudae Forel

= *Megalomyrmex (Wheelerimyrmex) humilis* Borgmeier, n. syn.

Monomorium (Xeromyrmex) salomonis (Linné)

Procryptocerus victoris, n. sp.

Paracryptocerus (Harnedia) adolphi (Emery)

Paracryptocerus (Harnedia) frigidus, n. sp.

Glamyromyrmex appetiatus Borgmeier

Glamyromyrmex aztecus, n. sp.

Key to the species of *Glamyromyrmex*

Gymnomyrmex abditus, n. sp.

Gymnomyrmex dentinasis, n. sp.

Key to the species of *Gymnomyrmex*

Stegomyrmex manni M. R. Smith

Subfamily Formicinae Lepeletier

Camponotus (Tanaemyrmex) pallescens Mayr

Camponotus (Myrmothrix) sericatus Mayr

Camponotus (Myrmosphincta) reinaldi, n. sp.

Camponotus (Hypercolobopsis) paradoxus Mayr

= *C. (H.) paradoxus janitor* Forel, n. syn.

Camponotus (Hypercolobopsis) divergens Mayr

Camponotus (Myrmobranchys) propinquus Mayr

= *C. (M.) paris* Forel, n. syn.

Camponotus (Myrmobranchys) scissus Mayr

Camponotus (Myrmeurynota) linnaei Forel

Bibliography

Introduction

The present contribution deals with ants of a number of different groups and contains descriptions of new species, redescrptions and further definitions of species already known, several cases of new synonymy and a few important new locality records. It is hoped that the fragmentary nature and scope of this study may be justified by the fact that it is a treatment of species belonging to genera which either have recently been revised or are not yet susceptible of a full-fledged revision at the present stage of investigation.

Acknowledgments. — The work was carried out with the help of a fellowship granted by the "Conselho Nacional de Pesquisas" of Brazil. The material was received from the following collections: Borgmeier collection (CTB), now in the custody of the author; Collection of the "Instituto Biológico de São Paulo" (IBSP), loan arranged through the courtesy of Mr. R. L. Araujo; Collection of the "Departamento de Zoologia de São Paulo" (DZSP); Museum of Comparative Zoology at Harvard University (MCZ), loan arranged through the courtesy of Dr. W. L. Brown, Jr.; Mayr collection, in the "Naturhistorisches Museum" of Vienna, Austria (NHMW), loan arranged through the courtesy of Dr. Max Fischer; Kempf collection (WWK). I also gratefully acknowledge the help received from the followings collectors and colleagues: Fathers Columbano Gilbert and Reinaldo Mueller, of the Franciscan Seminary at Agudos, S.P.; Mr. F. Plaumann, of Nova Teutônia, S.C.; Dr. W. Weyrauch, of Lima, Peru; Mr. Karol Lenko, of Barueri, S.P.; Mr. Vítor dos Santos, of São Paulo, S.P.; Dr. Carlos Alberto Campos Seabra, of Rio de Janeiro, Col. Moacyr Alvarenga, of Rio de Janeiro.

Subfamily Ponerinae Lepeletier

Ectatomma Fr. Smith, 1958

The genus has recently been revised by Brown (1958). A few minor doubts concerning the validity of certain closely related species were left undecided, due to insufficient material from critical areas. In the present note I intend to give a solution to the problem of the species pair *E. planidens* Borgm. and *E. quadridens* (F.).

Ectatomma planidens Borgmeier

(Figs. 1-4)

Ectatomma planidens Borgmeier, 1939, Rev. de Ent. 10: 418-419 (Worker; Brazil, S. Paulo State: Pindamonhangaba; Goiás State: Campinas). J. Brown, 1958, Bull. Mus. Comp. Zool. 118: 209-210, 298 (discussion).

Brown (1958) was the first to point out the close similarity between *planidens* and *quadridens* (F.). He even went so far as to suggest that the former might possibly be just a morph of the latter more familiar and widespread species. However, extensive material from several new localities, accumulated over the years in my collection (CTB, WWK), shows that *planidens* is a good and distinct species. In the following I give the differential characters for the worker and the first formal description of the female. The male continues unknown.

Worker. — Differs from *quadridens* in the following features: 1) Color lighter, yellowish-brown. Size smaller, thorax length of 32 workers from 9 different localities 2.24-2.72 mm (as compared with 3.37-4.0 mm thorax length of 16 *quadridens* workers selected at random from the same area of distribution). 2) Eyes globose and more prominent. 3) Median longitudinal carina of head always more prominent. Piligerous tubercles on vertex and occiput coarser and more conspicuous. 4) Midpronotal tubercle narrower, distinctly projecting forward, appearing in profile as a salient tooth (in *quadridens* the tubercle is broader, appearing in profile merely as an angle). 5) Petiole strikingly lower and more compact (Fig. 1); costulae count at middle of the side, excluding concentric costulae of the summit, 15-20; midventral tooth posteriorly not drawn out into a bluntly rounded flange. In *quadridens* (Fig. 2), the petiole is higher, more compressed antero-posteriorly, with well over 30 costulae at the middle of the side; midventral tooth posteriorly drawn out into a bluntly rounded flange. 6) Body sculpture, as stated by Brown (1958): "Individual costulae of sculpture on head and alitrunk, especially on pronotum, with eroded, rough surfaces, in extreme manifestation yielding a beaded effect at magnification of 80x and more". In addition costulae always coarser, quite evident also on mesepisternum, not masked by the overlying pubescence. In *quadridens*, the costulae are indistinct on mesepisternum, and considerably concealed by the loose cover of pubescence. 7) Erect hairs longer and decidedly more flexuous, usually longer ones mixed with shorter ones (cf. Fig. 1). Oblique hairs on scape much longer than the diameter of scape. In *quadridens*, the erect hairs are shorter, stiffer, less diverging in size; oblique hairs on scape not longer than the diameter of scape.

A stray *quadridens* worker from Pôrto Velho, Rondônia Territory, Brazil, at a first glance, seems to be somewhat intermediate between

the typical *quadridens* and *planidens*. It is of very small size (thorax length 2.64 mm), has a somewhat lower petiole with fewer costulae, approaching in this regards *planidens*. As far as the remaining characters are concerned, they are strictly of the *quadridens* type. I believe this is an aberrant, probably nanitic or stunned specimen. It is from outside the territory of *planidens*.

Female (undescribed). — Total length 9.9-10.0 mm; maximum length of head capsule 1.99-2.03 mm; maximum width of head in front of the eyes 1.74 mm; Weber's length of thorax 3.51-3.55 mm. This caste exhibits the same differential characters as pointed out for the worker. However, the eroded sculpture of the costulae is less distinct, quite evident only on the sides of pronotum. Additional characters are the following: Costulae at each side of vertex between midsagittal carina and eyes forming posteriorly concentric arches. ^{Wings} With a brownish (not greyish) tinge, veins brown (not fuscous). Forewing presenting in the first cubital cell a short spur, representing a vestige of the cross-vein *1r* (Fig. 3). Inasmuch as the wings of only one specimen are known, it remains to be seen whether this character is constant. At any rate, this feature was not observed on a number of *quadridens* females from different localities (Fig. 4).

Description based on two stray specimens, one from Campinas, the other from Agudos. Borgmeier (i. litt.) thought that the Campinas specimens represented a new species, whereas Brown (1958: p. 298) considered it transitional to *quadridens*. But the ensemble of the afore-mentioned characters leaves no doubt that they belong to *planidens* and that they are quite different from *quadridens*.

Specimens examined. — 50 workers and 2 females, from the following localities in Brazil: São Paulo State: Pindamonhangaba (type locality) (T. Borgmeier leg.), lectotype and paratypes; 20 km w of Conchas (W. W. Kempf leg.); Lençóis Paulista (Kempf leg.); Agudos (C. Gilbert, W. W. Kempf & R. Mueller leg.) workers and 1 dealated stray female. Minas Gerais State: Lagôa Santa (M. Alvarenga leg.). — Goiás State: Campinas (now a suburb of Goiânia) (J. S. Schwarzmaier leg.), worker paratype and 1 stray alate female; Anápolis (Kempf leg.).

— Mato Grosso State: Chapada (C. Amann leg.); Corumbá (C. R. Gonçalves leg.) (WWK, CTB, MCZ, USNM and elsewhere).

Distribution and Ethology. — So far as is known, this species shares the southern tiers of the range of *quadridens*, the southern limit of the territory being approximately the same for both species. They are known to occur side by side, not only at the same localities, but even in approximately the same niches, for instance at Agudos, Campinas, Anápolis and Chapada. Where both species occur together, *planidens* is less common than *quadridens* but by no means rare. It

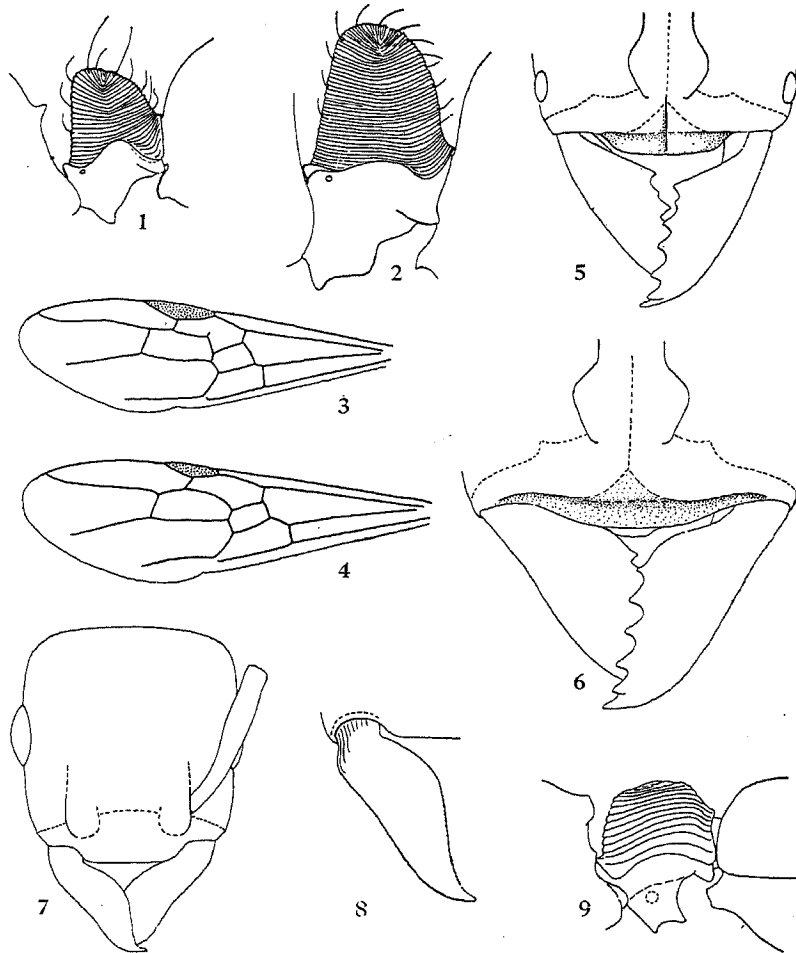


Fig. 1. *Ectatomma planidens* Borgm., worker, petiole. — Fig. 2. *E. quadridens* (F.), worker, petiole. — Fig. 3. *E. planidens* Borgm., female, fore wing. — Fig. 4. *E. quadridens* (F.), female, fore wing. — Fig. 5. *Trachymesopus compressinodis* (Borgm.), worker, mandibles and forehead. — Fig. 6. *T. gilberti*, n. sp., worker, mandibles and forehead. — Fig. 7. *Gnamptogenys nana*, n. sp., worker, head. — Fig. 8. *G. nana*, n. sp., worker, mandible. — Fig. 9. *G. nana*, n. sp., worker, petiole. — (Kempf del.).

is distinctly xerophilous and nests in the barren soil or covered with scanty and low vegetation. Although foraging workers are usually seen running on the ground, at Agudos, I have seen stray workers also climbing low shrubs and trees.

Gnamptogenys Roger, 1863

In Brown's recent (1958) Ectatommini revision this genus was considerably enlarged by the inclusion of several extreme

species and species-groups, formerly considered as generically discrete entities. In the following I give the description of an interesting new species belonging to the species-group of *Gnamptogenys* in the older and stricter sense.

***Gnamptogenys nana*, n.sp.**

(Figs. 7-9)

Worker (holotype). — Total length 3.4 mm; maximum length of head capsule 0.71 mm; maximum width of head, eyes included 0.67 mm; scape length 0.49 mm; greatest diameter of compound eyes 0.21 mm; Weber's length of thorax 1.01 mm; width of pronotum 0.51 mm; petiole length 0.36 mm; petiole width 0.38 mm; petiole height 0.41 mm; Color brownish-red; mandibles, antennae and legs more yellowish.

Mandibles (Fig 8) elongate-triangular, smooth and shining, with a few short costulae dorsolaterally on basal fifth. Head capsule (Fig. 7) with scarcely convex sides; occipital border feebly convex. Anterior margin of narrow anterior apron of clypeus feebly concave in the middle and the lateral corners rounded. Frontal carinae parallel. Eyes relatively very large and protruding. Scapes, when laid back as straight as possible, fail to reach the occipital border.

Thorax lacking even a trace of a promesonotal suture; metanotal groove at most vestigial, traces visible only in certain lights or views. Posterior border of basal face of epinotum at each side with a narrow, slightly raised carinule, separating costulae of dorsal face from those of declivous face; only median 3-4 costulae of basal face continue on declivous face without interruption. Hind coxae with a short basidorsal tooth.

Petiole trapezoidal, slightly broader than long; anterior and posterior corners rounded. Subpetiolar process prominent with an anterior and posterior tooth separated by an excision (Fig. 9).

Head, including clypeus, thorax both dorsally and laterally, tergites and sternites I and II of gaster regularly and rather finely longitudinally costate. Declivous face of epinotum with vertical costulae. Sides and dorsum of petiole longitudinally costate; the lateral costulae arching transversely across the anterior face from top to bottom. About 40 costae on dorsum of head between compound eyes, about 22 between frontal carinae. About 24 costae on dorsum of pronotum, 14 on epinotum. Petiolar dorsum

with about 18 costulae. First gastric tergite, in dorsal view, presenting over 40 costulae. Both costae and intervals lacking microsculpture, leaving the integument highly shining. Fore coxae laterally transversely finely striate; middle and hind coxae with rather vestigial striae antero-laterally. Rest of legs smooth and shining.

Erect or inclined yellowish hairs sparsely on body and appendages.

Type. — 1 worker (holotype) from Agudos, São Paulo State, Brazil, collected by Father Reinaldo Mueller, O.F.M., on August 29, 1958 (WWK, n. 2633).

Discussion. — *G. nana* runs to the second lug of couplet 29 in Brown's key (1958), and coincides with *G. exarata* (Emery), from which, however, it is easily separated by the triangular mandibles, the shorter head, the much larger eyes, the finer and more numerous costulae, the regularly costate sides of thorax, the vertical costae on declivous face of epinotum, the transverse costae on anterior face of petiole, which is broader than long, the lack of a metanotal groove.

In general habitus it is even closer to *G. regularis* Mayr and *G. nigrifrons* Borgmeier. The differences from *regularis* consist in the shape of the mandibles, the rounded lateral corners of the anterior apron of clypeus, the larger eyes, the smaller size, the finer costulation, the transverse costulae from top to bottom on anterior face of petiole, the light color. The scarcely denticulate masticatory border of mandibles, the shorter scapes, the lack of a metanotal groove and of microsculpture on costulae and striae, besides smaller size, distinguish *nana* from *nigrifrons*.

Trachymesopus Emery, 1911

Proposed as subgenus of *Euponera* by Emery (1911, Gen. Insect. 118: 84), *Trachymesopus* was raised to full generic level by Wilson (1958). The genus is cosmopolitan and its species occur principally in warm but also in temperate climates.

From the New World 10 different species have been recorded so far. A new species is added in the present study. Although very little is known about the ethology of these ants, most of them, if not all, are cryptobiotic, forage in leaf litter on the jungle floor and establish their colonies preferably in rotten wood. Following is an up-to-date list of the American species:

cauta (Mann, 1922), worker — Honduras
cognata (Emery, 1896), worker, female — Costa Rica
compressinodis (Borgm., 1928), worker, female — se. Brazil
gilberti, n. sp., worker, female — se. Brazil

gilva (Roger, 1863), worker, female, male — USA: Miss., Ala., Ga., Tenn.
holmgreni (Wheeler, 1925), worker — Peru
lunaris (Emery, 1896), worker — Paraguay, se. Brazil
obsoleta (Menozzi, 1931), worker — Costa Rica
ochracea guatemalensis (Forel, 1899), worker — Guatemala, Nicaragua.
stigma (Fabr., 1804), worker, female, male — s. Florida to n. Argentina; Pacific region.
succedanea (Roger, 1863), worker, female, male — Cuba

Only the four species occurring in southeastern Brazil will be discussed below.

***Trachymesopus compressinodis* (Borgmeier), n. stat.**

(Fig. 5)

Euponera (*Trachymesopus*) *stigma compressinodis* Borgmeier, 1928, Bol. Biol. fasc. 12, pp. 62-64 (Worker; Brazil, S. Paulo State: Raiz da Serra).

Type. — A lone worker (holotype) in the collection of the Departamento de Zoologia do Estado de São Paulo (DZSP n. 9966). This form is quite distinct from *T. stigma* and must be accorded full specific rank. Following are the main distinguishing characters of the species, as observed on the holotype:

Worker. — 1) Size much smaller. Total length 4.4 mm; maximum length of head capsule 0.98 mm; maximum width of head 0.91 mm; Weber's length of thorax 1.34 mm. 2) Mandibles smooth and shining. Masticatory border with 7 teeth (Fig. 5). 3) Clypeus with a median longitudinal sharp keel; anterior apron truncate, nearly perpendicular to posterior half, separated from it by a distinct margination. 4) Eyes separated from mandibular insertion by a distance subequal to the maximum diameter which in turn is subequal to the thickness of the scape (in *stigma* the eyes are almost always very much smaller and farther removed from the mandibular insertion). 5) Frontal carinae less constricted behind antennal insertion; diameter at greatest constriction greater than half the diameter at the maximum width of the frontal lobes. 6) Mesonotum relatively broader, distinctly transverse. 7) Basal face of epinotum broader, not distinctly marginate at the sides. 8) Petiole antero-posteriorly more strongly compressed; apex more attenuate; subpetiolar process posteriorly dentate.

Two additional workers from Jussara near Angra dos Reis, Rio de Janeiro State, Brazil (H. S. Lopes leg.) (CTB) agree perfectly with the holotype, including the measurements. Maxi-

mm length of head capsule 0.94 mm; maximum width of head 0.87-0.90 mm; Weber's length of thorax 1.34 mm. To the same series belong 4 dealate females which give an opportunity for the first diagnosis of this caste.

F e m a l e (undescribed). — Total length 5.5-5.7 mm; maximum length of head capsule 1.12 mm; maximum width of head 1.05 mm; Weber's length of thorax 1.77-7.81 mm. Similar to the worker, except the peculiarities of the caste. Distinguishing features as given for worker, especially ns. 1, 2, 3, 5, and 8. Note that the mandibles are of exactly the same shape as in worker, which does not happen with *stigma*. Wings unknown.

The present species is closest to *gilberti*, n. sp., but differs in smaller size, in having 7 mandibular teeth, a straight basal border of mandibles, a sharp midsagittal keel on clypeus, the subpetiolar process being posteriorly dentate.

Likewise *cognata* (Emery, 1896), which I know only from the description, might be a close relation. It has 7 mandibular teeth both in the worker and female caste and lacks the caste difference on the mandibles, proper to *stigma*. Its size seems a bit larger. Unfortunately Emery doesn't say a thing about the clypeus.

Trachymesopus gilberti, n. sp.

(Fig. 6)

W o r k e r (holotype). — Total length 5.5 mm; maximum length of head capsule 1.16 mm; maximum width of head 1.16 mm; length of scape 0.91 mm; Weber's length of thorax 1.74 mm; maximum petiolar length 0.40 mm; petiolar width 0.65 mm; petiolar height 0.80 mm. — Black; mandibles, antennae, middle and hind coxae, tibiae and tarsi ferruginous brown.

Mandibles with sparse piligerous punctures, smooth and shining. At higher magnification a very faint and minute reticulate-striolate sculpture becomes apparent. Masticatory border with 6 teeth (Fig. 6), of which the basal is the smallest. Basal border noticeably sinuous.

Head capsule opaque; densely and sharply shagreened, slightly more constricted in front than behind; sides moderately convex, occipital corners rounded, occipital border feebly yet noticeably excavate. Anterior half of clypeal apron perpendicular to posterior half, separated from each other by a distinct margination. Truncated anterior half smooth and shining. Posterior half with a short, not well defined median keel. Frontal carinae strongly constricted in back of antennal insertion and the rounded,

laterally projecting frontal lobes; greatest width twice the minimum width at maximum constriction. Frontal suture distinct reaching back to a little beyond the posterior end of frontal carinae. Eyes relatively large, with at least 8 facets across the greatest diameter; their distance from the mandibular insertion equals their greatest diameter.

Antennal scape subclavate. Funicular segments I and XI twice as long as broad. Remaining segments gradually increasing in width and decreasing in length toward apex, from slightly longer than broad to slightly broader than long. No distinct apical club developed.

Thorax in side-view flattened above as a whole; the pronotum and mesonotum each individually very feebly convex. Pronotum submarginate at each side. Promesonotal suture more feebly, mesoepinotal rather strongly impressed. Mesonotum transverse (18: 12). Thorax constricted at anterior end of epinotum; basal face in profile gently convex, its lateral borders rather rounded than marginate, slightly diverging caudad, posteriorly somewhat excavate between the feebly tumescent posterior corners; declivous face smooth and shining, marginate at the sides. A small tooth behind the metathoracic spiracle. Remainder of thorax less strongly shagreened than head, subopaque; posterior portions of sides also faintly striolate. Legs rather feebly sculptured almost shining.

Petiole in dorsal view trapezoidal, in lateral view conical, with rounded tip; anterior face transversely convex, posterior face flat, lateral and apical border rounded-submarginate. Subpetiolar process rounded in front and behind. All of petiolar node surface feebly shagreened to smooth and quite shining. Gaster of similar sculpture, yet a little more shagreened, somewhat shining.

Pilosity yellowish. Oblique to erect pilosity of variable length fairly abundant on mandibles, head, dorsum of thorax, tip of petiole, and on gaster, scarcer on antennae and on legs. Sides and declivous face of thorax, anterior and posterior face of petiole, anterior truncate face of gaster bare. Entire body and appendages covered with rather abundant and mostly appressed pubescence.

Female (paratypes). — Total length 6.3-6.5 mm; maximum length of capsule 1.19-1.27 mm; maximum width of head 1.16-1.23 mm; Weber's length of thorax 1.99-2.03 mm. Exactly as worker with the differences of the caste. Fore wing as in *T. stigma* but crossvein *2r* is equal to *Rsf*₄.

Types. — 1 worker (holotype) from Agudos, São Paulo State, Brazil (C. Gilbert leg.) Jan. 7, 1959 (WWK n. 2869). 3 females (paratypes), 2 from Agudos, S. P. (W. W. Kempf leg.) 23-II and 4-XII-1955 (WWK) and 1 from Pôrto das Caixas, Rio de Janeiro State (O Conde leg.) February 1928 (CTB n. 3680).

Discussion. — Although closely related to *stigma*, the present species is quite distinct from it by the shape and sculpture of the mandibles, the truncate clypeus, the larger eyes, the more convex sides of the head, the shorter, apically more attenuate petiolar scale, and the more transverse mesonotum. Attention is called to the fact that the female possesses the same kind of mandibles as the worker, whereas in *stigma* the female has the mandibles more linear with long basal border and short apical or masticatory border, hence noticeably different from those of the respective worker caste.

I take great pleasure in naming this ant for Father Columbano Gilbert, O.F.M., of the faculty of Franciscan Seminary at Agudos, an industrious discoverer of many myrmecological rarities.

Trachymesopus lunaris (Emery, 1896)

So far this very distinctive species has been recorded solely from the holotype worker, which hails from Paraguay. The original description seems to be sufficient for recognition and the accompanying figures (Emery, 1896, Pl. 1, figs. 12a, 12b) give a good idea of the stout, broad petiole which in dorsal view is crescent-shaped.

Following are new and interesting locality records for the species, all from southern Brazil: Rio Grande do Sul State: Pareci Novo (P. Buck & B. Rambo leg.) 2 workers (CTB). Santa Catarina State: Ibirama (H. Luederwaldt leg.) 1 worker (CTB). São Paulo State: Agudos (C. Gilbert & W. W. Kempf leg.) 2 workers (WWK). Barueri (K. Lenko leg.) 1 worker (Coll. Lenko). Rio de Janeiro State: Jussara nr. Angra dos Reis (H. S. Lopes leg.) 1 worker (CTB).

All the Brazilian specimens have the mandibles rather smooth. The fine striae mentioned for the holotype in the original description, are at most vestigial in the specimens examined.

The Agudos specimens were found in leaf litter in forest floor.

Trachymesopus stigma (Fabricius, 1804)

Described originally from South America, this species occurs in the New World in Central America, and from southern Florida

through the Antilles as far south as southeastern Brazil (São Paulo) and northern Argentina (Formosa). It is also found in Pacific region, viz. in New Guinea, Solomon Islands, Fiji Islands, Aru, Philippines, China and Samoa. (cf. Wilson, 1958, p. 315-316).

In the Neotropical region the extension of the range south of the Amazon river is still unpublished. For this reason I add the following new locality records based upon material from my collection (WWK and CTB):

Brazil. Amapá Territory: Serra do Navio (K. Lenko leg.), Rio Amapari (J. Lane leg.); Pará State: Rio Cuminá (A. J. Sampaio leg.), Jacareacanga (M. Alvarenga leg.); Amazonas State: Itacoatiara (Mann & Baker leg.); Pernambuco State: Recife (L. Lima Castro leg.), Tapera (B. Pickel leg.); Goiás State: Campinas (Goiânia) (J. S. Schwarmaier leg.), Aragarças (H. Sick leg.); Mato Grosso: Rondonópolis (C. Gilbert & R. Mueller leg.), Poconé (C. Valette leg.); São Paulo State: Agudos (W. W. Kempff leg.), São José do Rio Preto (J. Lane leg.).
Argentina, Formosa Province: Ing. Juarez (N. Kusnezov leg.).

Subfamily Myrmicinae Lepeletier

Pogonomyrmex (Epehebomyrmex) naegelii Forel

Pogonomyrmex naegelii Forel, 1886, Ann. Soc. Ent. Belg. (C.R.) 30: 41-42 (Worker; Brazil: Rio de Janeiro).
Pogonomyrmex (Epehebomyrmex) venezuelensis Weber, 1943, Bol. Ent. Venez. 2: 69-71, fig. 2 (Worker; Venezuela: Llanos north of Soledad, nr. Ciudad Bolívar).- Nov. Syn.
Pogonomyrmex (Epehebomyrmex) venezuelensis rupununi Weber, 1943, Bol. Ent. Venez. 2: 71 (Worker; British Guiana: Rupununi Savannah).- Nov. Syn.

This common species has a much greater distribution than that indicated by the hitherto published data. For this reason, I decided to give following locality list, drawn up from specimens in my collection (CTB, WWK).

Argentina, Chaco: R. Saenz Peña (N. Kusnezov); Misiones: Loreto (N. Kusnezov).

Brazil, Rio Grande do Sul State: Erechim (G. Mazurana), Nova Petrópolis (Buck & Hansen), Três Arroios (A. Kops); Santa Catarina State: Blumenau (R. Mueller), Florianópolis (R. Mueller), Gaspar (R. Mueller), Nova Teutônia (F. Plaumann); Paraná State: Rio Negro (M. Witte), Rolândia (W. W. Kempff); São Paulo State: Agudos (W. W. Kempff), Barueri (K. Lenko), Campos do Jordão (W. W. Kempff), Guaratinguetá (L. Wzorek), Ilhabela (E. Garbe), Itu (F. S. Pereira), Mairiporã (W. W. Kempff), São Paulo (A. Carvalho, W. W. Kempff, H. Luederwaldt), São Sebastião (B. Fleddermann), Teodoro Sampaio (O. P. Forattini); Rio de Janeiro State: Itatiaia (J. F. Zikán), Jardim

Primavera (U. Kohnen), Mendes (H. Eidmann), Petrópolis (W. W. Kempf); Guanabara State: Rio de Janeiro, Mt Corcovado (T. Borgmeier), Tijuca Mts. (C. A. C. Seabra); Minas Gerais State: Arassuaí (P. Thiemann), Gov. Valadares (K. Lenko), Mons. Paulo (V. dos Santos), Palmira (T. Borgmeier), Pirapora (E. Garbe), Tiradentes (R. Mueller); Goiás State: Anápolis (W.W. Kempf), Goiandira (W. W. Kempf), Goiânia (J. S. Schwarzmaier); Mato Grosso State: Campo Grande (Gilbert & Mueller, M. Alvarenga), Chapada (C. Amann), Poconé (C. Vallette), Rondonópolis (Gilbert & Mueller); Espírito Santo State: S. Teresa (O. Conde); Baía State: S. Salvador (G. Bondar); Pará State: Rio Cuminá (A. J. Sampaio).

Bolívia, Santa Cruz: S. Ignacio de Velasco (M. Fuss).

Peru, Oaxapampa, 1600 m (W. Weyrauch).

This common ant tolerates different climates and altitudes, but lives and nests in the open fields, in the soil.

Synonymical note. — The description and figure of *P. venezuelensis* Weber fits exactly the widespread *naegellii*. In the original diagnosis, Dr. Weber failed to differentiate *venezuelensis* from other known species of the group. Dr. Brown, of the Museum of Comparative Zoology at Harvard, compared a *venezuelensis* syntype with *naegellii* samples from southern and central Brazil and from Peru, and found no difference, both forms being identical and consequently synonyms. The same applies to the race *rupununi* Weber (1943), attached to *venezuelensis* and described upon a lone worker from British Guiana. Although not having seen the latter specimen, both Dr. Brown and myself also agree in this case of synonymy.

Hylomyrma Forel, 1912

Pogonomyrmex (*Hylomyrma*) Forel, 1912, Mém. Soc. Ent. Belg. 20: 16 (Type of the subgenus: *P. (H.) columbicus* Forel, 1912, by original designation).
Lundella Emery, 1915, Bull. Soc. Ent. France, p. 191 (Type of the genus: *Tetramorium reitteri* Mayr, 1887, by original designation). — Emery, 1922, Gen. Ins. Subf. Myrmicinae, fasc. 174, p. 292.
Hylomyrma, Wheeler, 1922, Bull. Amer. Mus Nat. Hist. 45: 660. — Brown, 1953, *Breviora* Mus. Comp. Zool., n. 18, p. 3 (Syn).

Several ill-differentiated or poorly diagnosed genera in the subfamily Myrmicinae have caused a great deal of confusion and produced a number of partly still undetected synonymy. One of these cases was recently settled by Brown (1953), who pointed out that *Lundella* Emery is nothing but a junior synonym of *Hylomyrma* Forel.

Having seen the types and a large number of additional specimens of *reitteri* (Mayr), the types of *speciosa* (Borgmeier), many specimens of what is doubtless *balzani* Emery, and a few specimens of an unidentified species from Central America, I am now in a position to formulate a stricter generic diagnosis and to clear up a part of the species-level synonymy.

Generic features.

31 Worker and female. — Mandibles with strongly oblique chewing border, bearing apically 5-6 teeth; basally a bluntly rounded curvature marks the transition from the basal to the apical border (Fig. 10). Clypeus with a prominent mesial lobe, having a short tooth at each side. Psammophores absent. Antennae 12-segmented, with 4-segmented apical club. Palpal formula (*reitteri*, *balzani*) 4:3. Worker thorax without distinct dorsal transverse sutures. Epinotum armed with a pair of spines. Flange of metasternal angle, flanking the petiolar peduncle, bidentate. Petiole strongly pedunculate, node elongate cylindrical. Mid and hind tibiae with minutely but distinctly barbate apical spurs.

As already observed by Forel, these ants are closely related to *Pogonomyrmex*, especially to the subgenus *Ephebomyrmex*, the shape of the mandibles, clypeus, metasternal lobes and petiole being their chief distinguishing characters. So far, six species have been described: *balzani* (Emery, 1894), from Paraguay and ne. Argentina, *columbica* (Forel, 1912), from n. Colombia, *dentiloba* (Santschi, 1931), from Panama, *goeldii* (Forel, 1912), from Rio de Janeiro, Brazil, *reitteri* (Mayr, 1887), from São Paulo State, Brazil, and *speciosa* (Borgmeier, 1937), from Itatiaia Mts., Brazil. Copious material from many southern Brazilian localities leads me to consider *goeldii* as a synonym of *reitteri*, *speciosa* as a synonym of *balzani*. The status of the remaining species, due to the lack of pertinent material, could not be settled at this time.

The genus is strictly Neotropical in distribution, and ranges from Vera Cruz in Mexico, to the Misiones Province in Argentina. The species resemble one another very closely, and their differences are rather subtle. They consist mainly in details of sculpturing and minor variations of shape, especially of the petiole, but have been substantiated through examination of fairly large series from several localities for both species considered here. As far as is known, the *Hylomyrma* ants are denizens of the forest floor cover and are usually collected from berlesate samples.

Hylomyrma reitteri (Mayr)

(Figs. 10, 11)

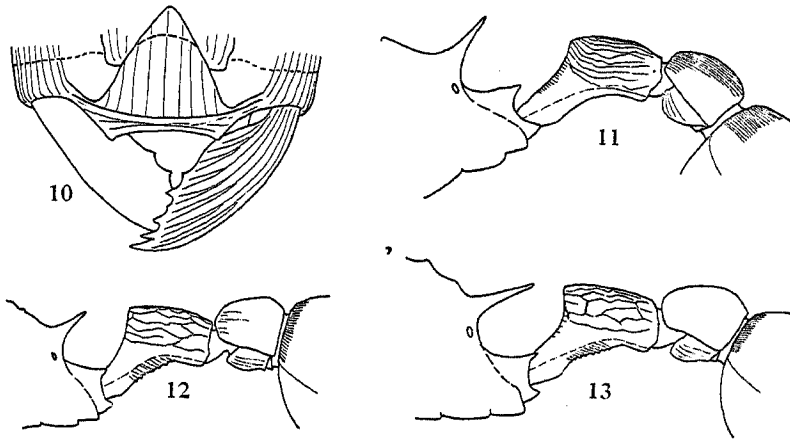
Tetramorium reitteri Mayr, 1887, Verh. Zool.-bot. Ges. Wien 37: 621-622 (Worker; Brazil: São Paulo State).

Lundella reitteri, Emery, 1915, Bull. Soc. Ent. France, p. 191.

Pogonomyrmex (Hylomyrma) goeldii Forel, 1912, Mém. Soc. Ent. Belg. 20: 17 (Female; Brazil: Rio de Janeiro, Mt. Corcovado).- Nov. Syn.

Types. — Workers from an unknown locality in São Paulo State, Brazil, received from E. Reitter, deposited in the Mayr collection (NHMW). 5 syntype workers examined.

Worker (syntypes). — Total length 4.3-4.4 mm; maximum length of head capsule 0.98-1.02 mm; maximum width of head 0.91-0.93 mm; Weber's length of thorax 1.23-1.27 mm. Reddish-brown or brownish-red; mandibles, antennae, and legs lighter, gaster darker.



Hylomyrma Forel

Fig. 10. *H. reitteri* (Mayr), worker, mandibles and forehead. — Fig. 11. *H. reitteri* (Mayr), worker, pedicel in sideview. — Fig. 12. *H. balzani* (Em.), worker, pedicel in sideview. — Fig. 13. *H. balzani* (Em.) (syntype of *H. speciosa* Borgm.), worker, pedicel in profile. — (Kempf del.).

Mandibles (Fig. 10) elongate, subtriangular, dorsally densely and longitudinally costate. Chewing border strongly oblique with 5-6 teeth, basal angle broadly curved, toothless, grading into basal border. When closed, mandibles leave a small triangular interspace between their inner border and the anterior border of clypeus.

Head subopaque, rather coarsely costate-rugose, between costae one to several much finer costulae and fine punctures. Costae longitudinal on clypeus, and cheeks, slightly diverging caudad on front and vertex; laterally, between front and eyes, the costulae become oblique to transverse, running toward the eyes; costae on gular face strongly converging mesad anteriorly. Inferior occipital corners marginate. Clypeus (Fig. 10) with an antero-median projecting apron, broadly but gently emarginate in the middle, with a conspicuous tooth at each side, this apron separated from the rest of the clypeus by a deeply impressed transverse furrow. Remainder of clypeus strongly convex longitudinally; laterally, in front of the antennal socket, its posterior

border strongly raised in a crest-like fashion (as in *Tetramorium*). Frontal carinae, short, laterally convex, fading out at level of eyes. Compound eyes narrowly lentiform, antero-inferior corner nearly pointed, situated in front of middle of sides. Antennal scapes, obliquely bent near base, rest straight, densely and finely costate-rugose. Funiculus 11-segmented, with a 4-segmented apical club, segments 2-7 distinctly broader than long. Palpi 4: 3.

Thorax subopaque with the same sculpture pattern as head, but costae coarser and occasionally more irregular, Dorsum in profile gently convex. Anterior and lateral borders immarginate, shoulders rounded. Pronotum above with transverse costae, prolonged on sides downward and caudad. Mesonotum longitudinally costate, ending at an elevated transverse keel (variable in expression), which has in front a faint transverse impression. Basal face of epinotum transversely regularly costate, transverse or arched costae continuing downwards on declivous face. Epinotal spines moderately long, slightly diverging and raised. Petiolar insertion flanked by a bidentate prominent flange, the upper tooth of which is slightly more prominent and pointed. Sides of thorax with sculpture more variable, horizontal costae usually predominating. Lateral face of fore coxae densely, finely and transversely striate, mid and hind coxae indistinctly sculptured. Rest of legs smooth and shining, but part of extensor face of femore (apex) and tibiae (entire length) weakly longitudinally rugulose. Mid and hind tibiae with a distinctly but finely barbate apical spur.

Petiole (Fig. 11) pedunculate, peduncle tapering and strongly compressed cephalad, node elongate cylindrical. Posterior part of dorsum of peduncle including ascending anterior face of node proper, sharply transversely costate. Node longitudinally costate-rugose, both dorsally and the sides. Anterior peak of node less prominent, not forming a sharply rectangular corner in profile. Ventral side of petiole without conspicuous transverse costae. Postpetiole longer than broad, constricted in front and behind, sides gently convex, dorsum sharply, finely and regularly longitudinally striate. Gaster smooth and shining, except for anterior fifth of tergite I (more than half the length of postpetiole) which is densely longitudinally striate.

Erect to oblique flexuous hair rather abundant on body and appendages, slightly shorter and less pointed on gaster, strictly oblique to subdecumbent on legs.

Female (undescribed). — Total length 4.3-4.8 mm; maximum length of head capsule 0.96-1.07 mm; maximum width of head, eyes excluded 0.87-1.06 mm; Weber's length of thorax 1.30-1.45 mm. Ocelli small, not prominent, posterior ocelli slightly farther apart from each other than from anterior ocellus. Pterothorax normally developed. For the rest, exactly as worker. Note the following distinguishing features; 1) head dorsolaterally with oblique to transverse costae, at level of, and converging toward eye. 2) Dorsum and sides of pronotum regularly costate, costae transverse above, continuing downward and caudad at the sides. 3) Mesothoracic scutum at anterior margin with 4-8 transverse costae, forming concentric arches. 4) Basal face of epinotum with regular, fine, transversely arched costulae. 5) Petiole dorsally transversely striate at peduncle, lacking striae ventrally; anterior peak of node not sharply raised, nor laterally sharply marginate; dorsum of node rather regularly longitudinally rugose. 6) Postpetiole dorsally longitudinally striate. 7) Basidorsal fine striae on first gastric tergite as long as half the length of the postpetiole.

Distribution. — Se. Brazil, from Rio Grande do Sul to Rio de Janeiro.

Specimens examined. — Over 100 workers and 7 females, as follows: Brazil, Rio Grande do Sul State: Nova Petrópolis (F. Plaumann leg.) workers and 1 female, Tainhas (Plaumann leg.) (WWK). Santa Catarina State: Nova Teutônia (Plaumann leg.) workers and 5 females, Passo Bormann (Plaumann leg.), Xanxerê (Plaumann leg.), Chapecó (Plaumann leg.), Seara (Plaumann leg.) (WWK, CTB); Paraná State: Rondon (Plaumann leg.), Rio Azul (Plaumann leg.) (WWK); São Paulo State: loc. unknown (E. Reitter ded.) 5 syntype workers and 1 female (NHMW), São Paulo City, Parque do Estado (W. W. Kempf leg.) (WWK); Guanabara State: Rio de Janeiro, Floresta da Tijuca (C. A. Campos Seabra leg. (WWK, Coll. Seabra).

Discussion — The outstanding features of this species, as far as the worker caste is concerned, are the same as pointed out above for the female, namely the sculpture of the dorso-lateral portion of the head above eyes, the regular transversely arched costae of pronotum, longitudinal costae of mesonotum, transverse costae of epinotum. The petiolar peduncle has deeply impressed transverse striae on the posterior half of peduncle and ascending anterior face of node, lacking the same ventrally. The shape and sculpture of the node is also quite distinctive, as shown in the description and figure 11. The same applies to the longitudinally striate postpetiolar dorsum and the broad transverse band on longitudinal basidorsal striae on first gastric tergite. The size variation, a bit greater than that of the cotype series, is as follows: Total length 3.9-4.6 mm; maximum length of head capsule 0.87-1.07 mm maximum width of head 0.85-1.06 mm; Weber's length of thorax 1.09-1.37 mm. The syntypes are rather bleached. Fresh and fully colored workers have the body dark fuscous-brown to nearly piceous.

Synonymical note. — Forel's *goeldii*, described upon a lone female from Rio de Janeiro, Mt. Corcovado, was not seen, but the description contains enough details to show that it is the female of *reitteri* and not of *balzani*. I have both species from approximately the same locality (Tijuca mountains in Rio).

Hylomyrma balzani (Emery)

(Figs. 12, 13)

Tetramorium balzani Emery, 1894, Bull. Soc. Ent. Ital. 26: 165 (Worker; Paraguay: Asunción).
Lundella balzani Emery, 1915, Bull. Soc. Ent. France, p. 191. — Santschi, 1933, An. Soc. Ci. Argent. 116: 117 (Argentina; Misiones: Loreto).
Lundella speciosa Borgmeier, 1937, Arch. Inst. Biol. Veget. Rio de Janeiro, 3: 241-242, figs. 25-29 (Worker; Brazil, Rio de Janeiro State: Itatiaia). N o v. S y n.

Types. — Workers from Asunción, Paraguay, collected by L. Balzan, in the Emery collection, Museum of Genova. Not seen.

Worker. — Total length 3.7-4.3 mm; maximum length of head capsule 0.91-0.98 mm; maximum width of head behind eyes 0.85-0.94 mm; Weber's length of thorax 1.05-1.27 mm. Resembling very closely the preceding *reitteri*, but with the following differences: 1) Sculpture of dorsum and sides of thorax decidedly coarser, more irregular and consisting of vermiculate and frequently anastomosing rugulae. Rugae never regularly transversely arched on pronotum, never regularly longitudinal on mesonotum. Transverse keel present at mesoe-pinotal junction, but transverse to arched costulae never quite distinct and regular on basal and declivous face of epinotum. 2) Petiolar peduncle slightly less distinctly transversely striate above, but with highly distinct transverse costulae ventrally. Node with coarser and rather vermiculate to anastomosing rugosities above and at the sides, its anterior peak in profile sharply raised, anterior and lateral border sharply marginate (Figs. 12, 13). 3) Striation on dorsum of postpetiole usually quite obsolete discally, often nearly smooth and shining. 4) Basidorsal striae on first gastric tergite shorter than in *reitteri*, usually distinctly less than half the length of the postpetiole.

Female (undescribed). — Total length 4.3-4.8 mm; maximum length of head capsule 0.94-1.01 mm; maximum width of head behind eyes 0.93-0.98 mm; Weber's length of thorax 1.27-1.41 mm. Similar to the worker with the usual caste differences. Also close to the same caste of *reitteri*, with the following distinguishing features: 1) head dorso-laterally with

rather longitudinal, not transverse nor oblique rugae between front and eyes. 2) Sides of pronotum with rather irregular, vermiculate and anastomosing coarse rugosities. 3) Mesothoracic scutum at anterior margin usually with less than 3 transversely arched concentric costae, longitudinal costae of scutum generally converging anteriorly to a single point on anterior margin. 4) Basal face of epinotum without distinct and regular transverse costulae. 5) Petiole with transverse striae on dorsum of peduncle less distinct than in *reitteri*, but very distinct ventrally. Node of the same shape and sculpture as in worker. 6) Sculpture of postpetiolar dorsum and basidorsal costulae of first gastric tergite as in worker.

Distribution. — The range of this species covers nearly the same territory as that of *reitteri*, having been recorded from Paraguay, from Misiones in Argentina, and the S. Brazilian States of Rio Grande do Sul, Santa Catarina, Paraná, and Rio de Janeiro, including the former Federal District, now Guanabara State.

Specimens examined. — Over 100 workers and 8 females as follows: Argentina, Misiones Province: Loreto (A. A. Oglobin) 1 worker, 1 female (CTB). Brazil, Rio Grande do Sul State: Nova Petrópolis (F. Plaumann leg.) workers and 1 female (WWK); Santa Catarina State: Nova Teutônia (Plaumann leg.), workers and females, Seabra (Plaumann leg.), Linha Facão (Plaumann leg.), workers and 1 female, Xarim (Plaumann leg.), Chapecó (Plaumann leg.), Xanxerê (Plaumann leg.), Concórdia (Plaumann leg.) (WWK, CTB); Paraná State: Pôrto Vitória (Plaumann leg.) workers and 1 female). Rio de Janeiro State: Itatiaia (J. F. Zikán leg.) 3 syntypes of *speciosa* Borgm. and 3 additional workers, (T. Borgmeier leg.) (CTB); Guanabara State: Rio de Janeiro, Floresta da Tijuca (C. A. C. Seabra leg.) 1 worker (WWK).

Synonymical note. — As Borgmeier (1937) pointed out in the original description of his *speciosa*, it differs from the more typical *balzani*, at that time known only from scanty material from Argentina and Paraguay, which he had no chance to see, in darker color, longer epinotal spines and greater size. As regards size, the types of *speciosa* fall within the upper brackets of the measurements of the common *balzani* populations from Se. Brazil. The darker color is also a variable feature, but at any rate, the contrasting color of dark thorax and rather light brown legs in all "*speciosa*" specimens (3 syntypes and 3 additional specimens from the type locality taken at a much later date) is noteworthy, but occurs occasionally also in specimens from other localities. The most striking character consists in the longer epinotal spines, (Fig. 13), which however vary in size in the 6 types and topotypes, and grade into the common shorter length of specimens from other localities. Furthermore, all other critical characters, pointed out above for the

balzani worker apply without restriction to all "*speciosa*" types, so that, to my mind, they are best considered synonyms of *balzani*, on hand of the presently available evidence.

Pheidole gertrudae Forel

Pheidole gertrudae Forel, 1886, Ann. Soc. Ent. Belg. (C.R.) 30: 42 (Worker; Brazil: Rio de Janeiro).
Megalomyrmex (*Wheelerimyrmex*) *humilis* Borgmeier, 1930, Arch. Inst. Biol. S. Paulo 3: 35-36, Pl. 5, figs. 34, 36 (Worker; Brazil: Rio de Janeiro).- Nov. Syn.

Megalomyrmex humilis was described upon two stray workers, collected by O. Conde at Rio de Janeiro, on December 25, 1927. Father Borgmeier sent one specimen to C. Menozzi, who identified it as *Megalomyrmex* n. sp. Trusting the generic allocation, Borgmeier then described the workers in 1930.

Recently, I had a chance to examine the holotype of *humilis*, deposited in the collection of the Instituto Biológico de São Paulo, and to my great amazement realized at once that the specimen does not belong to *Megalomyrmex* at all, but to *Pheidole gertrudae* Forel.

Menozzi's and Borgmeier's mistake is understandable, inasmuch as only workers and no soldiers of this otherwise aberrant species of *Pheidole* were at hand. Indeed, *Pheidole gertrudae* workers are rather unique in having a continuously vaulted promesonotum and a completely unarmed epinotum, much as in *Megalomyrmex*. However, the broad, rounded head, the obliquely inclined and scarcely vaulted clypeus, the costulate cheeks, the broadly separated frontal carinae, the long and basally attenuate scapes, the finely punctate mesopleura, the strongly pedunculate petiole with a well differentiated, laterally punctate node, separate the worker of *Pheidole gertrudae* from all known *Megalomyrmex* species.

Monomorium (*Xeromyrmex*) *salomonis* (Linnaeus, 1758)

The typically Old World species increased its ranges due to human agency. As far as the New World is concerned, *M. salomonis* has been recorded so far only from the Antilles (Antigua, Dominican Republic, Virgin Islands: St. Croix).

In May 1954, my friend and colleague Moacyr Alvarenga discovered the same species on Fernando Noronha Island, an

oceanic island off the shore of ne. Brazil. This new record is very interesting as it means a considerable extension of the range of the present species.

***Procryptocerus victoris*, n. sp.**

(Figs. 14-18)

Worker (holotype). — Total length 5.7 mm; maximum length of head capsule 1.23 mm; maximum width of head 1.27 mm; length of thorax 1.68 mm. Black; tip of apical funicular segment, tip of scape, tarsites, extensor face of tibiae more or less fuscous ferruginous.

Head (Figs. 17, 18) subopaque. Mandibles longitudinally striate. Clypeus longitudinally costate (8-9 costae); anterior border distinctly notched at the middle. Frontal carinae strongly sinuous: anterior half strongly diverging laterad, vertically truncate, exposing the scrobe and the conspicuously prominent antennal socket; posterior half of carinae less diverging, plate-like, overhanging and concealing the scrobe in full-face view, broadly rounded and curving mesad posteriorly before joining the small yet distinct occipital tooth. Occipital border marginate, biconvex, gently impressed at the middle. Cheeks convex. Surface of compound eyes uniformly convex, upper half not visibly flattened nor pushed in. Front with a few rather straight, longitudinal striae, margined at the sides and behind by a series of concentric, vermiculate, finely punctate arches of rugae, covering the rest of the front and the vertex. Scrobe and truncate portion of frontal carinae very finely and densely reticulate, somewhat shining. Cheeks longitudinally to slightly reticulate-rugose. Gular face regularly and rather coarsely longitudinally costate. Occiput finely reticulate-punctate with a few transverse striae at the bottom of each side.

Thorax subopaque (Fig. 14), rather regularly longitudinally striate both dorsally and at the sides, about 20 striae dorsally on pronotum. Promesonotal disc gently convex, about as long as broad, shoulders angulate, sides marginate, gently convex, subparallel; laterotergite of pronotum flat, not excavate. Sides of mesonotum not prominent, the posterior corners in the shape of a rectangular tooth. Mesoepinotal groove impressed, not interrupting the sculpture. Antero-lateral lobes of basal face of epino-

tum little projecting, rounded. Epinotal spines terete, about one half the length of the basal face, slightly diverging and slightly raised toward apex. Declivous face vertically striate (continuing striae of basal face). Coxae striate. Outer face of fore femora with vestigial striae.

Petiole (Figs. 15, 16) slightly longer than broad, sides and dorsum somewhat convex, longitudinally and rather coarsely striate; anterior face of node truncate with transverse striae. Postpetiole slightly broader than long, longitudinally striate, in profile strongly curved downward in front of the posterior border. Gaster subopaque. Tergites and sternites more finely and rather densely longitudinally striate.

Dorsum of body appendages with whitish, sparse, rather stiff, apically pointed setae, suberect and shorter on head, more or less oblique, longer but not decumbent on thorax, peduncle and gaster. No short, fine, appressed hairs on first gastric tergite except for the lateral borders, where they are present.

Types. — 23 workers (holotype and paratypes) from a colony taken in a hollow dead twig, near the old São Paulo — Santos highway, near the summit of the Serra do Mar, on August 15, 1958, (W. W. Kempf & Vitor dos Santos Coll.) (WWK n. 2599).

The paratypes measure as follows: Total length 5.3-6.3 mm; maximum length of head capsule 1.16-1.38 mm; maximum width of head 1.19-1.45 mm; Weber's length of thorax 1.52-1.81 mm. For the rest much the same as the holotype, except for minor details in thoracic outline and sculpture.

The peculiarly antero-laterally truncate frontal carinae separate the present species from all other known forms of the genus. The striate integument places it in the vicinity of the *striatus*-like forms. In my key (1951) it runs to couplet 16, differing from *gibbosus* in the conspicuously less convex promesonotum; the more strongly sinuous frontal carinae; the concentric striato-rugose sculpture of front and vertex of head. The lack of coarse striae on femora, the scarcely projecting and rather blunt lateral lobes of mesonotum and basal face of epinotum, separate *victoris* from *schmalzi* and *convergens*.

The species is dedicated to Mr. Vitor dos Santos, of São Paulo, my faithful companion on many field-trips.

Paracryptocerus (Harnedia) adolphi (Emery)

(Figs. 20, 21)

Cryptocerus adolphi Emery, 1905, Bull. Soc. Ent. Ital. 37: 172-173, fig. 33 Worker;
Brazil, Mato Grosso: Coxipó).

A single worker from Valle Chanchamayo (800 m), Peru,

captured on Aug. 8, 1939 by Dr. W. Weyrauch, provides an opportunity for redescribing this species, poorly diagnosed in the original description and misinterpreted by myself in a previous revisionary study (Kempf, 1958, p. 86).

Worker. — Total length 3.9 mm; maximum length of head 1.20 mm; maximum width of head in front of the eyes 1.23 mm; maximum diameter of eyes 0.29 mm; Weber's length of thorax 1.12 mm; maximum width of gaster 1.12 mm. Light ferruginous; frontal carinae, occipital lobes, tips of thoracic and pedicellar spines, extensor face of tibiae testaceous.

Head (Fig. 20) subquadrate, subopaque, slightly broader than long. Mandibles finely and densely punctate, opaque. Clypeal suture vestigial. Frontal carinae semitranslucent, weakly sculptured throughout, nearly smooth and shining; their anterior border feebly crenulate. Sides of head excised in front of eyes, conspicuously upturned above eyes. Occipital lobes semitranslucent, foliaceous, with irregularly crenate border. Disc of cephalic dorsum notably convex in both directions. Upper surface of head finely, densely yet not heavily reticulate-punctate, somewhat shining, with rather large oval foveolae. Cheeks marginate below, more heavily shagreened, opaque, densely foveolate. Gular surface practically devoid of sculpture, quite shining.

Thorax (Figs. 20, 21) conspicuously narrower than head, finely reticulate-punctate, the ~~micro~~sculpture superficial to obsolescent on dorsum which therefore is quite shining, heavier on sides which are opaque. Scapular corner free, angulate, and subdentate. Sides of pronotum anteriorly with a prominent spiniform tooth, followed by a broad, apically rounded, and conspicuously upturned lobe. Promesonotal suture obsolete. Mesonotum at each side anteriorly with a short tooth. Mesoepinotal suture more or less vestigial, not impressed. Basal face of epinotum grading into declivous face; their lateral border anteriorly with a small tooth, followed by a prominent spiniform tooth, and, farther down the declivous face, two more or less vestigial denticles. Dorsum of thorax with rather crowded, elongate oval foveolae. Laterotergi-

te of pronotum longitudinally costate. Rest of sides with elongate, horizontal foveolae. Legs subopaque, weakly shagreened. Femora spindle-shaped. Tibiae not prismatic.

Petiolar and postpetiolar nodes with a prominent spiniform appendage at each side, as shown in Fig. 20. Dorsum of petiole with a pair of minute denticles. Dorsum of body of postpetiole, as seen in profile, moderately convex. Gaster short, oval, with obsolescent microsculpture, with broad, well-developed, hyaline lamellate antero-lateral crests. Setigerous foveolae not developed.

Erect hairs scarce, a row of short, club-shaped setae along the rim of the frontal carinae and the sides of head back to the occipital angle. Longer, rather pointed setae on apex of gaster. Ground pilosity consisting of pale golden, appressed scale-like setae, sparsely covering the body and appendages of the insect. These scales are more conspicuous and distinctly canaliculate when lying in the foveolae of the dorsum and cheeks of head and on the thorax. Scales on gaster simple, finer, and not lying in foveolae.

Discussion. — Emery (1905) limited his original diagnosis merely to the figure, and the description of the color, sculpture and pilosity. In my revision (1958), when discussing this species, of which I had not seen specimens, I tentatively associated with it a specimen from Cabo Frio, Rio de Janeiro State, (T. Borgmeier leg.), which has the same prominent petiolar and postpetiolar spines, and moderately convex dorsum of the postpetiole. Now, after seeing a specimen which truly belongs to *adolphi*, I realize that this association may not be maintained, and the Cabo Frio specimen must be given a new name (cf. below).

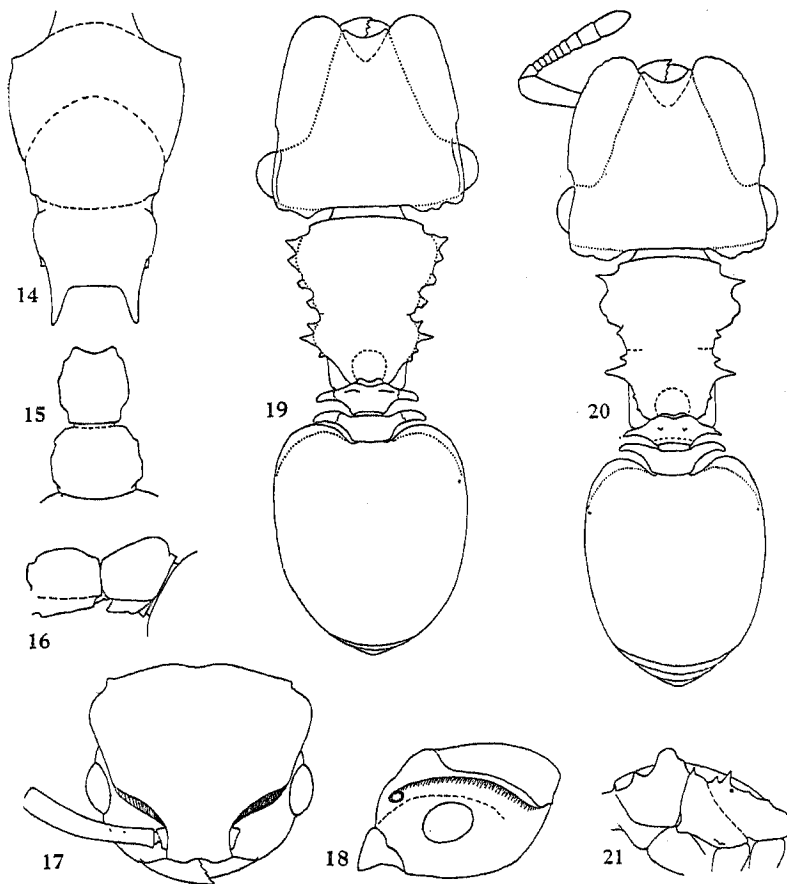
P. adolphi, of which only the worker is known, is a highly distinctive species by its light color (not a callow as previously suggested), by its membranaceous occipital lobes, the broad upturned second prothoracic lobe, the evanescent microsculpture, the elongate squamiform hairs, the drawn-out lateral appendages of the petiole and postpetiole. The present specimen agrees very well with Emery's description and figure except for the fact that it has also the gaster quite shining. It belongs to the *angustus-subgroup* and, on account of the long, drawn-out, pedicellar spines is closest to the following *frigidus*, n. sp.

Paracryptocerus (Harnedia) frigidus, n. sp.

(Fig. 19)

Paracryptocerus (Harnedia)? adolphi Kempf, 1958 (*nec* Emery, 1905), Stud. Ent. 1: 87, Pl. 1, fig. 3.

Worker (holotype). — Total length 3.9 mm; maximum length of head 1.14 mm; maximum width of head in front of



Figs. 14-18. *Procryptocerus victoris*, n. sp., worker, — Fig. 14. Thorax. — Fig. 15. Pedicel in dorsal view. — Fig. 16. Pedicel in sideview. — Fig. 17. Head in full face view. — Fig. 18. Head in sideview. — Fig. 19. *Paracryptocerus frigidus*, n. sp., worker, holotype. — Fig. 20. *Paracryptocerus adolphi* (Em.), worker, — Fig. 21. *adolphi* (Em), worker, thorax in sideview. — (Kempf del.).

the eyes 1.08; maximum diameter of eyes 0.29 mm; Weber's length of thorax 1.10 mm; maximum width of gaster 1.16 mm. Black; mandibles, antennae, legs except fore coxae, tips of occipital lobes, thoracic and pedicellar spines brown or ferruginous; frontal carinae and antero-lateral foliaceous border of gaster testaceous.

Head (Fig. 19) subopaque, subquadrate. Mandibles finely and densely reticulate-punctate, opaque. Clypeal suture vestigial. Frontal carinae flat, depressed, semitranslucid, superficially re-

reticulate-punctate above without conspicuous foveolae; borders anteriorly vestigially crenulate; lateral borders rather straight, evenly converging cephalad. Sides of head slightly but distinctly emarginate in front of eyes, convex and somewhat upturned above eyes. Occipital lobes with obliquely truncate and feebly crenate crest. Eyes very prominent, remarkably convex. Disc of cephalic dorsum moderately convex in both directions, front, vertex and occiput densely and finely reticulate-punctate, with sparser, larger, sharply impressed oval foveolae. Cheeks more heavily shagreened, with irregular rugulae and indistinct foveolae, lower border marginate. Gular surface reticulate-punctate with fine and sparse longitudinal rugulae.

Thorax (Fig. 19) subopaque, reticulate-punctate. Scapular corner free, angulate and subdentate. Lateral margin of pronotum tridentate, the first tooth acute, the following two teeth obtuse to blunt at apex. Promesonotal suture obsolete. Mesonotum at each side with a blunt to slightly bifid projecting tooth. Mesoe-pinotal suture practically absent, indicated laterally by a faint depression. Lateral margin of epinotum with 3 to 4 teeth, the anterior pair acute, the second the largest, the following 1-2 teeth minute, none at the bottom of the declivous face. Basal face of epinotum grading into declivous face. Dorsum of thorax reticulate-rugose and densely foveolate. Laterotergite of pronotum with a few horizontal costae. Remainder of sides of thorax longitudinally rugose and foveolate. Fore coxae laterally transversely costate. All legs subopaque and finely reticulate-punctate. Femora spindle-shaped. Tibiae not prismatic.

Petiolar and postpetiolar nodes with a prominent, drawn out spiniform appendage at each side, as shown in Fig. 19. Postpetiole slightly broader than petiole. Body of petiole with an anterior subvertical truncate face, separated laterally from dorsal face by a faint and short transverse carinule. Postpetiolar dorsum in profile feebly convex. Both pedicellar segments subopaque, reticulate-punctate, and indistinctly reticulate-rugose.

Gaster broad oval, reticulate-punctate, subopaque, with super-imposed fine longitudinal but frequently anastomosing rugulae. Antero-lateral foliaceous border subhyaline, relatively narrow, terminating posteriorly at the level of the first gastric spiracle.

Erect hairs scarce. Short, apically blunt setae anterolaterally on rim of frontal carinae, and on sides of head behind the eyes and in front of occipital corner. Longer and more pointed hairs on apex of gaster, including the posterior margin of the

first tergite. Squamiform, canaliculate, silvery appressed hairs rather abundant in all foveolae on dorsum of body, more sparsely on frontal carinae, gular face, legs, and posterior half of gaster, where they are narrower, simple and usually not canaliculate.

Type. — 1 worker from Cabo Frio, Rio de Janeiro State, Brazil, taken by Father Borgmeier on August, 1926 (IBSP, n. 1131).

Discussion. — As noted above, in a previous study (Kempf, 1958), I tentatively associated this worker with *adolphi*, which at that time I only knew from the description. Now, after examining a true *adolphi* worker (cf. above) I came to realize that the present specimen belongs to a different, still undescribed, species in the vicinity of *conspersus* (Fr. Smith) and *fleddermanni* Kempf.

The differences that separate *frigidus* from *adolphi* are obvious and have already been stated in part in a former paper (Kempf, 1958, p. 87). They consist principally in the difference of color, in the heavier microsculpture, and in the remarkably diverging armature of the lateral thoracic borders. In addition, *frigidus* has the lateral margins of frontal carinae straight and less expanded in front of eyes and lacks the pairs of denticles on the dorsum of petiole.

The differences from *conspersus* (olim: *targionii* Emery) and *fleddermanni* are stated in the following key, which is an expansion and correction of the key contained in my revisionary study of the *angustus*-group (Kempf, 1958, pg. 68):

17. Second lateral prothoracic tooth having the shape of a stout, strongly upturned rounded and carinate lobe (Fig. 20); microsculpture of thoracic and gastric dorsum obsolete, basic color light ferruginous-brown *adolphi* (Emery)
- Second lateral prothoracic tooth small and horizontal; thoracic and gastric dorsum subopaque, distinctly reticulate-punctate; basic color black 17a
- 17a. Intervals between foveolae on thoracic dorsum not forming a network of raised rugulae; dorsum of postpetiole, as seen in profile, strongly convex to acuminate *conspersus* (Fr. Smith)
- Intervals between foveolae on thoracic dorsum forming a distinct network of raised rugulae; dorsum of postpetiole, as seen in profile, very gently convex, never acuminate 17b
- 17b. Lateral border of head scarcely emarginate in front of the eyes, not upturned above eyes; lateral margin of epinotum with a tooth near the bottom of declivous face; petiolar and postpetiolar appendages relatively short, that of petiole in the form of a triangular tooth *fleddermanni* Kempf
- Lateral border of head emarginate in front of the eyes, upturned above eyes; lateral margin of epinotum without a tooth near the bottom of declivous face; petiolar and postpetiolar lateral appendages relatively long and drawn out into prominent spines (Fig. 19) *frigidus*, n. sp.

***Glamyromyrmex appretiatus* Borgmeier**

Glamyromyrmex appretiatus Borgmeier, 1954, Rev. Brasil. Biol. 14: 282-284, figs. 7-9 (Worker; Brazil, Santa Catarina State: Nova Teutônia).

Father Borgmeier described this interesting ant upon a lone worker (holotype), which is now deposited in the Museum of Comparative Zoology at Harvard. In the meantime 14 additional specimens have been collected in southeastern Brazil, at the following localities:

Santa Catarina State: Nova Teutônia, IV-1954, VIII-1956, VII-1959 (F. Plaumann leg.) 3 workers; Xaxim, XII-1957 (Plaumann leg.) 2 workers; Ibicaré, VII-1959 (Plaumann leg.) 1 worker. Paraná State: Pôrto Vitória, X-1959 (Plaumann leg.) 1 worker; Rio Azul, X-1959 (Plaumann leg.) 6 workers. São Paulo State: Serra da Cantareira, 25-II-1959 (W. W. Kempf & V. dos Santos leg.) 1 worker (WWK, CTB).

***Glamyromyrmex aztecus*, n. sp.**

(Figs. 22, 27, 28)

Worker (holotype). — Total length 1.8 mm; maximum length of head capsule 0.47 mm; maximum width of head 0.40 mm; Weber's length of thorax 0.45 mm; cephalic index 85; mandibulo-cephalic index 19. Color brown; mandibles, antennae, clypeus and legs more or less yellowish-brown.

Head (Figs. 22, 27) longer than broad, subtrapezoidal; sides gently convex, greatest width at the posterior fourth of the head capsule length; occipital lobes prominent, rounded; occiput in full face view rather deeply excised. Clypeus flat; anterior border broadly and gently excised; lateral corners rounded; sides nearly continuous with frontal carinae; posterior border vestigial, broadly rounded in the middle. The plate-like, semitranslucent frontal carinae completely roof the deeply excavate antennal scrobe. Vertex convex both longitudinally and transversely. Lower border of cheeks marginate in front of the eyes; tip of the rather small antero-ventral tooth deflected mesad under the mandibular insertion. Lower border of antennal scrobe not distinctly marginate. Eyes small, consisting of about 10 facets. A deeply impressed transverse trough on gular surface in front, just behind the mentum, the lateral walls of the trough constituted by the cheeks, which at this place are plate-like and somewhat translucent. Dorsum of head including clypeus rather smooth and shining,

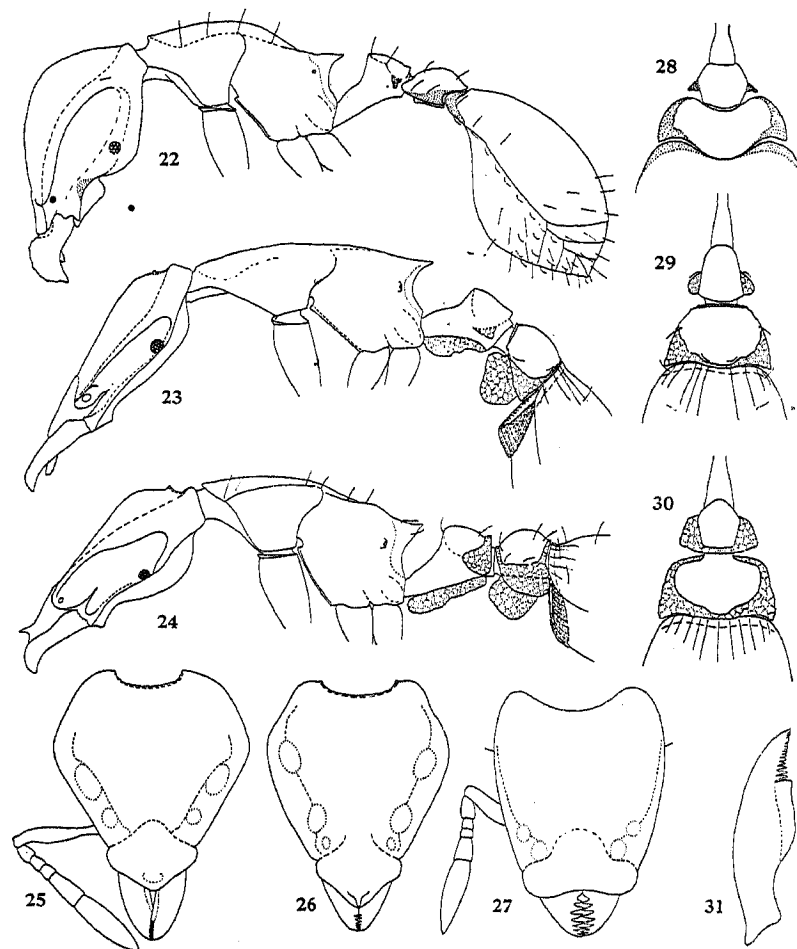


Fig. 22. *Glomyrmex aztecus*, n. sp., worker. — Fig. 23. *Gymnomyrmex abditus*, n. sp., worker. — Fig. 24. *Gymnomyrmex dentinasis*, n. sp., worker. — Fig. 25. *Gymnomyrmex abditus*, worker, head. — Fig. 26. *Gymnomyrmex dentinasis*, worker, head. — Fig. 27. *Glomyrmex aztecus*, worker, head. — Fig. 28. *Glomyrmex aztecus*, worker, pedicel in dorsal view. — Fig. 29. *Gymnomyrmex abditus*, worker, pedicel in dorsal view. — Fig. 30. *Gymnomyrmex dentinasis*, worker, pedicel in dorsal view. — Fig. 31. *Gymnomyrmex* worker, mandible. — (Kempf del.).

sparsely covered with minute punctulae. Frontal carinae, along lateral borders, somewhat rugulose. Occipital lobes faintly and finely rugulose. Cheeks reticulate-punctate. Antennal scrobe highly smooth and shining. Gular face mostly smooth and shining.

Mandibles short, subtriangular, rather shining and smooth except for the fine piligerous punctulae. Basal lamella mostly hidden beneath the anterior apron of clypeus. Chewing border horizontal at base, gradually curving into a vertical position

toward apex; serially dentate, with 7 sharp teeth; excision between teeth at the middle deeper than that of the teeth at the extremities.

Antennal scape clavate, finely reticulate-punctate, subopaque. Funicular segments: I as long as II and III combined; II and III rather transverse, not longer than broad; IV twice as broad as long; V as long as I-IV combined.

Thorax (Fig. 22) somewhat compressed, mostly smooth and shining, dorsum with ill-defined obsolescent sculpture, declivous face of epinotum superficially reticulate-punctate; a faint longitudinal median carinule on anterior half of mesonotum. Dorsum of thorax anteriorly and laterally marginate; humeri bluntly angulate; mesoepinotal suture indicated by a series of faint transverse rugosities. Promesonotum gently convex both transversely and longitudinally. Basal face of epinotum flat; posterior corners with a pair of upright, compressed, plate-like triangular spines, their base posteriorly continued downwards as a prominent translucent crest, flanking the declivous face. Epinotal spines as long as basal face proper. Legs, except the smooth and shining fore coxae, finely reticulate-punctate, subopaque.

Petiole (Figs. 22, 28) pedunculate; peduncle and sides of node finely reticulate-punctate. Node subquadrate, its disc smooth and shining, borders marginate, the anterior border straight, transverse, the lateral borders convex, bearing posteriorly a small spongiform and spinelike process; in profile the disc is slanting caudad, the anterior border forming an acuminate peak. Postpetiole strongly transverse and dorso-ventrally compressed; anterior border concave in the middle, the posterior border convex; each side with a prominent wing-shaped and platelike lateral process, rounded anteriorly and angulate posteriorly, the postero-lateral portions in the form of spongiform and semitranslucent material. Disc smooth and shining, gently convex. Ventral spongiform appendages lacking on both the petiole_p and postpetiole_p.

Gaster (Fig. 22) dorso-ventrally compressed in front: the first sternite excavate antero-laterally; lacking a spongiform semicircular pad; with a foliaceous mesally excised anterior translucent border on the first tergite; basal costulae absent but instead anterior half of first tergite with fine and numerous but vestigial longitudinal rugulae. Rest of gaster smooth and shining.

Erect hairs very scarce, straight, simple and short: 1 at each side of head behind the scrobe; 4 on each side of thoracic dorsum; 4 on petiolar and 8 on postpetiolar disc; more abundant (but apparently partly rubbed off) on gaster, more numerous on

apex. Decumbent hairs more conspicuous on antennae, gular face of head, legs and sternum of gaster; minute appressed hairs sparsely on dorsum of head, thorax and gaster.

Types. — 2 workers from Mexico, Vera Cruz: Pueblo Nuevo nr. Tetzonapa, collected with a Berlese funnel by E. O. Wilson, on August 7, 1953 (holotype: MCZ) and on August 18, 1953 (paratype: WWK).

The paratype worker measures: total length 1.75 mm; maximum length of head capsule 0.45 mm; maximum width of head 0.36 mm; Weber's length of thorax 0.47 mm; cephalic index 80, mandibulo-cephalic index 16. It differs from the holotype in longer head with less convex sides and more prominent occipital lobes. The lateral borders of the thorax are also more weakly marginate and most of the standing hairs mentioned in the description of holotype are missing (probably rubbed off). ¹⁶

This species is quite distinct from all the other four species of the genus. It is at once recognized by its deeply excavate occiput in full face view, the shape of the postpetiole and the peculiarly depressed anterior end of the gaster, which lacks antero-ventrally a semicircular spongiform pad. The 5 species of the genus presently known may be identified by means of the subjoined key (modified after Brown, 1954, p. 31):

Glamyromyrmex Wheeler: Key to the species for workers

1. Anterior clypeal border deeply and rather narrowly excised in the middle; petiolar node seen in profile very low and gently rounded (Brazil: Pará) *beebei* Wheeler
- Anterior clypeal border transverse or shallowly and very broadly excised; petiolar node seen in profile forming a raised narrowly rounded or marginate peak 2
2. Ventral spongiform appendages of petiole and postpetiole large and conspicuous; posterior dorsum of head with a few erect hairs (Cuba) *convexiceps* (Santschi)
- Ventral spongiform appendages of petiole and postpetiole very small or even absent; posterior dorsum of head without erect hairs 3
3. First gastric sternite anteriorly excavate and lacking a spongiform semicircular pad; occiput in full face view rather deeply excised in the middle (Mexico: Vera Cruz) *aztecus*, n. sp.
- First gastric sternite anteriorly not excavate, always with a spongiform semicircular pad; occiput in full face view scarcely excised in the middle 4
4. Petiolar node from above distinctly longer than broad; ventral surface of petiole with a low, longitudinal spongiform crest (Panama C. Z.) *wheeleri* M. R. Smith
- Petiolar node from above distinctly broader than long; ventral surface of petiole without a spongiform crest (Southern Brazil) *apretiatus* Borgmeier

Gymnomyrmex Borgmeier, 1954

When Dr. Borgmeier described this genus upon the single new species *splendens*, there was hardly any doubt about its generic distinctness. However, in the meantime, Mr. Plaumann discovered in this group four additional species, two already described (Kempf, 1959), the other two being described below, which show that *splendens* is only one extreme of a variegated series of species coming at the other end rather close to the genus *Chelystruma* Brown.

Certainly, there is still available a set of characters which permits a clear-cut separation between both groups. But the question is whether these characters are sufficient for generic distinction in such variable a group as the Dacetini. Inasmuch as Dr. Brown intends to revise the generic classification of the Dacetini in a near future, and as still more new forms may eventually be detected and give us completely different ideas, I rather leave the problem unsolved.

The characters which help to discriminate *Gymnomyrmex* from *Chelystruma* are the following:

Gymnomyrmex. — Mandibles more linear, with an elongate basal lamella and without a prominent apical tooth. Petiolar node, excluding lateral foliaceous appendages, rather longer than broad. Occiput without erect hairs at the middle.

Chelystruma. — Mandibles rather triangular with a short, narrowly rounded basal lamella and with a prominent apical tooth, conspicuously crossing over its mate at full mandibular closure. Petiolar node twice as broad as long, its dorsum strongly slanted downward and backward, the anterior border strongly marginate forming a rather sharp summit when seen from the side. Occiput with a pair of erect hairs at the middle.

Gymnomyrmex abditus, n. sp.

(Figs. 23, 25, 29, 31)

Worker (holotype). — Total length 3.0 mm; maximum length of head capsule 0.76 mm; maximum width of head 0.67 mm; Weber's length of thorax 0.83 mm. Cephalic index 88; mandibulo-cephalic index 21. Reddish-brown; antennae and legs somewhat lighter; dorsum of thorax and petiolar node slightly, gaster more strongly fuscous; spongiform appendages of pedicel and gaster brownish-white.

Head (Figs. 23, 25) rather strongly depressed, little convex above and below, broadly pyriform. Mandibles (Fig. 31) finely

but sharply reticulate and subopaque; conspicuously projecting from beneath the clypeus; basal lamella elongate and semitranslucid; dentition consisting of 4 well-separated acute teeth followed apicad by a series of more numerous ill-differentiated and nearly completely ankylosed denticles; a prominent apical tooth is lacking. Clypeus one fifth broader than long, flat, rather densely reticulate-rugose and punctate, subopaque; anterior border convex forming in the middle a bluntly rounded angle; posterior border distinct; a faint transversely oval tumescence anteriorly on the disc. Sides of head conspicuously diverging caudad to posterior third of head proper, then obliquely converging mesad toward laterally rounded and mesally angulate occipital lobes. Occipital excision rather deep and narrow. Frontal carinae plate-like, greatly expanded over smooth and shining, deeply excavate antennal scrobe; dorsally reticulate-rugose and subopaque, semitranslucid in part. Front and vertex smooth and shining, sparsely yet conspicuously beset with fine punctulae. Cheeks finely but superficially reticulate-punctate, lower border marginate. Eyes small with about 15 facets, situated noticeably behind the middle of the head. Gular surface smooth and shining. Scape and funiculus of antennae not noticeably different from those of the other species of the genus.

Thorax (Fig. 23) slender, smooth and shining; posterior half noticeably compressed. Pronotum not distinctly marginate at the sides, sparsely and finely punctulate; shoulders rounded; gently convex transversely. Mesonotum rather flat, sides more strongly marginate; setigerous punctures almost obsolete, specially posteriorly. Mesopinotal suture impressed. Basal face of epinotum flat, subquadrate, sides marginate, lacking punctulae. Epinotal spines compressed and platelike; when seen from above slender, scarcely diverging caudad, as long as the interval between their bases. Declivous face smooth and shining, with a few faint transverse striae on the upper portion; its sides margined by the prominent reticulate-punctate and semitranslucid infradental lamella. Epinotal spiracles prominent. Legs, with the exception of the smooth and shining outer face of fore coxae and apical half of extensor face of femora, finely and superficially reticulate-punctate and subopaque.

Petiole (Figs. 23, 29) with a distinctly set off node, forming in profile a prominent peak anteriorly; peduncle finely reticulate-punctate and subopaque; disc of node smooth and shining, longer than broad, its anterior border rounded and marginate; its sides

posterolaterally with a small subtriangular spongiform appendage; ventral longitudinal spongiform crest well developed. Postpetiolar node proper transversely oval, its disc completely smooth and shining, gently convex in both directions; its anterior border with a narrow hyaline crest; postero-lateral spongiform appendages moderate in size, its posterior corner drawn out into a subacute angle. Ventral appendages well developed.

Gaster smooth and shining; its anterior margin transverse, bordered by a thin sinuate lamella. First tergite with 9 basidorsal costulae, the mesal ones longer than the lateral ones. Spongiform semicircular pad on anterior half of first sternite very well developed.

Erect pilosity extremely scarce, practically reduced to a few hairs on postpetiolar disc (4), anterior end of gaster, and more abundantly on tip of gaster dorsally and ventrally. Antennae and mandibles densely clothed with short, fine appressed hairs. Legs with abundant, rather long stout subreclinate hairs. Dilute and inconspicuous pubescence densest on clypeus, sparser on front and posterior dorsum of head; extremely sparse on promesonotal disc, vestigial and scarce on pedicellar nodes, scarce on gaster.

Types. — 13 workers, collected from sifted leaf mould at Rio Azul, Paraná State, Brazil (alt. 1000 m), in October 1959, by Fritz Plaumann (WWK n. 3151, paratypes in MCZ).

The paratype workers agree in all essentials with the foregoing description of the holotype. The most conspicuous divergence occurs in the basidorsal costulae of the gaster which vary in number from 7 to 11 distinct ones, always distributed asymmetrically, there being one more on the left side than on the right side. The measurements vary as follows: Total length 2.9-3.1 mm; maximum length of head capsule 0.76-0.78 mm; maximum width of head 0.65-0.69 mm; Weber's length of thorax 0.81-0.87 mm; cephalic index 86-88, mandibulo-cephalic index 21-23.

This species is closest to *splendens* and *rugithorax* differing however very strikingly in the prominent mandibles, the strongly sculptured clypeus, the broader head of different shape.

***Gymnomyrmex dentinasis*, n. sp.**

(Figs. 24, 26, 30)

Worker (holotype). — Total length 2.9 mm; maximum length of head capsule 0.78 mm; maximum width of head 0.63 mm; Weber's length of thorax 0.76 mm; cephalic index 81;

mandibulo-cephalic index 9. Ferruginous; gaster fuscous-brown; antennae and legs yellowish-brown; spongiform appendages slightly brownish.

This species is very close to *comis* (Kempf, 1959), from which it differs, however, in the following significant features:

Larger in size (see measurements). Color lighter. Integument still shinier and smoother. Basal face of epinotum lacking vestigial rugulae and punctulae. Petiolar peduncle only superficially reticulate-punctate, partly smooth. Standing hairs slightly more numerous, especially on dorsum of thorax.

Clypeus (Figs. 24, 26) bearing dorsally just behind the anterior slightly rounded tip an obliquely elevated spine, pointing forward. Frontal carinae somewhat more expanded, also in front, covering completely the preocular lamellae from above. Mesonotum lacking a faint median longitudinal carinule. Epinotal spines longer, as long as the distance between their bases. Postpetiole (Fig. 30) nearly twice as broad as long.

Types. — 3 workers (holotype and paratypes) from sifted leaf mold taken at Rio Azul, Paraná State, Brazil, altitude 1000 m., by F. Plaumann, October 1959 (WWK n. 3150).

The paratype workers agree with the holotype in all essentials and even the measurements are scarcely diverging: Total length 2.95 mm; maximum length of head capsule 0.78 mm; maximum width of head 0.63 mm; Weber's length of thorax 0.78-0.79 mm; cephalic index 81; mandibulo-cephalic index 9.

The most striking feature of this species is the anterior clypeal spine, lacking in all other known species of the genus.

Gymnomyrmex Borgmeier: Key to the species for workers

1. Clypeus and mandibles sharply sculptured and subopaque; mandibles prominent (mandibulo-cephalic index about 20) .. *abditus*, n. sp.
— Clypeus and mandibles practically smooth and shining with only fine and sparse punctulae; mandibles not prominent (mandibulo-cephalic index less than 15) 2
2. Dorsum of pronotum distinctly marginate in front and at the sides; declivous face of epinotum and disc of petiolar node smooth and shining 3
— Dorsum of pronotum immarginate in front and at the sides; declivous face of epinotum and disc of petiolar node reticulate-punctate 4
3. Clypeus anteriorly with an obliquely raised spine; postpetiole including spongiform appendages nearly twice as broad as long; color ferruginous *dentinasis*, n. sp.

- Clypeus anteriorly without an obliquely raised spine; postpetiole including spongiform appendages distinctly less than twice as broad as long; color fuscous-brown *comis* Kempf
- 4. Promesonotum longitudinally rugose; lateral edge of frontal carinae slightly scalloped; thoracic dorsum with two pairs of long, flagellate hairs *rugithorax* Kempf
- Promesonotum smooth and shining; lateral edge of frontal carinae continuous; dorsum of thorax lacking long flagellate hairs *splendens* Borgmeier

***Stegomyrmex manni* M. R. Smith, 1946**

Mr. Plaumann succeeded in collecting the second worker of this extremely rare and taxonomically important species. The specimen was taken in October 1959 at Rio Azul, Paraná State, Brazil, at an altitude of 1000 m (WWK). The holotype worker originated from Barro Colorado Island, Panama Canal Zone.

Subfamily **Formicinae** Lepeletier

***Camponotus* Mayr, 1861**

The cosmopolitan genus *Camponotus* is by far the richest in species of all ant genera. From the Neotropical region alone, not counting the equally numerous and formally named infraspecific variants, well over 200 species have been heretofore described and distributed into approximately 20 subgenera.

Aside from the great number of species, also the relative paucity and variability of good distinguishing structural characters render rather difficult the study of this genus, which is badly in need of a thorough revision. There, too, is a predominance of convergent and adaptive characters, especially in the soldiers, often masking the basic and true affinities. The splitting up of the maze of species into minor groups or subgenera, which in its positive value goes nearly exclusively to Emery's credit, is still far from being altogether satisfactory. While some of the subgenera, as Creighton (1951) puts it very adequately, are "monuments of heterogeneity", most of them lack clearly defined limits and have often led to confusion and synonymy.

Here I am giving a redescription based on types of five species proposed by Mayr. A new species is added to the more distinctive subgenus *Myrmosphincta*. Furthermore, several more

obvious yet hitherto undetected synonyms are formally proposed and a few interesting new distributional data are recorded. As far as subgeneric assignment is concerned, I am following Emery's system as proposed in the Formicine section of *Genera Insectorum* (1925). In a few instances, nevertheless, a subgeneric shift was found necessary for reasons to be pointed out below in each case.

***Camponotus (Tanaemyrmex) pallescens* Mayr**

(Figs. 32, 35, 38)

Camponotus pallescens Mayr, 1887, Verh. Zool.-bot. Ges. Wien 37: 512-513 (Soldier, worker; Brazil: Santa Catarina State). — Forel, 1912, Mém. Soc. Ent. Belg. 20: 74 (Brazil, Guanabara State: Rio de Janeiro, Serra Vermelha; Espírito Santo State).
Camponotus (? *Pseudocolobopsis*) *pallescens*, Emery, 1920, Rev. Zool. Afric. 8: 259.

Types. — Soldiers and workers in the Mayr collection (NHM). 2 soldiers (lectotype and paratype) and 4 workers (paratypes) examined.

Soldier (holotype and paratype). — Total length 5.4 (5.2) mm; maximum length of head capsule 1.48 (1.41) mm; maximum width of head 1.37 (1.27) mm; length of scape 1.23 mm; Weber's length of thorax 1.74 (1.70) mm. Pale testaceous to yellowish brown; head above, mandibles, antennae and gaster often slightly darker than rest of the body.

Head (Fig. 35) somewhat longer than broad, not obliquely truncate in front, narrower in front than in back; sides gently curved; occipital border feebly excised. Mandibles vestigially coriaceous at base, the rest smooth, shining and sparsely punctate; chewing border with five (or six?) teeth. Clypeus with a blunt yet distinct longitudinal keel; median apron strongly projecting in front, anterior border feebly convex to transversely truncate, lateral corners angulate; a rectangular excision at each sides between median and lateral lobes. Frontal area distinct. Frontal suture as long as the moderately sinuous and posteriorly diverging frontal carinae, which barely reach the level of the middle of the eyes. Integument finely and superficially coriaceous, very sparsely punctate; cheeks and clypeus with slightly coarser, less shining, reticulate sculpture; rest of head, especially occiput and gular face rather strongly shining. Scapes finely coriaceous.

Thorax (Fig. 38) very finely coriaceous and shining. Dorsum gently and continuously arched. Mesoepinotal suture present but not impressed. Epinotum rather strongly compressed from side to side, basal face nearly as long as declivous face, both forming in

profile an obtuse angle, the vertex of which is broadly rounded. Legs coriaceous and shining.

Petiole shining and superficially transversely coriaceous-rugulose, with a rather low, anteriorly convex, posteriorly flat, scale; the superior transverse border bluntly rounded, not excised in the middle. Gaster very finely transversely rugulose-coriaceous, rather shining.

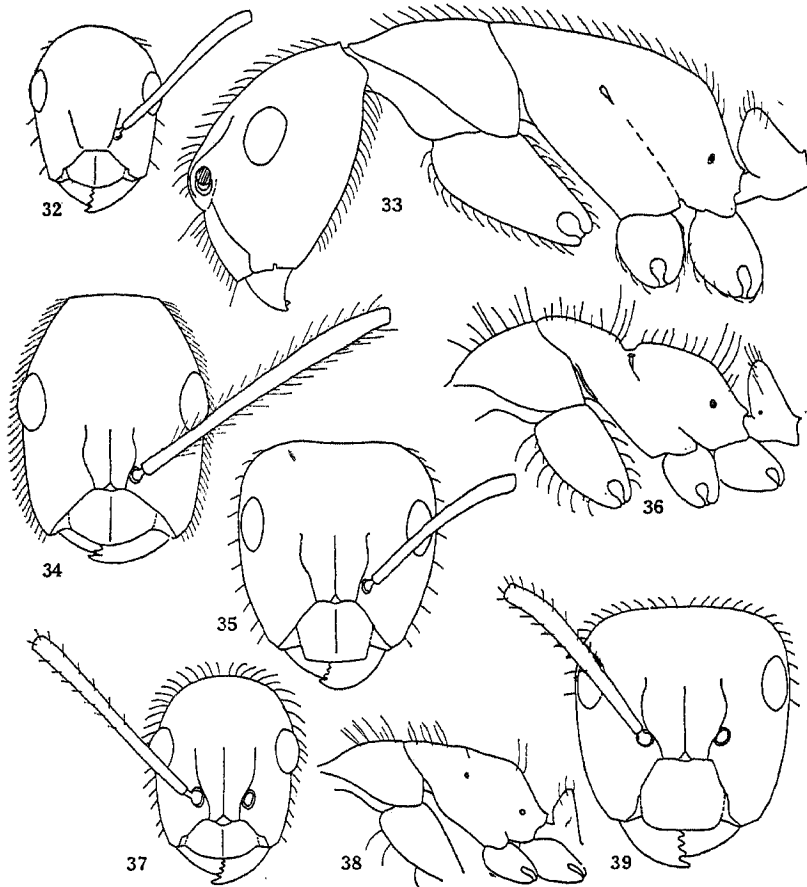
Erect hairs yellowish-brown, moderately abundant on head and gaster, scarcer on dorsum of thorax, lacking on scapes (except apex) and legs (except coxae and basal portion of flexor face of femora). Hairs bordering sides of head and dorsum of thorax in profile shown in Figs. 35, 38. Short, subappressed to appressed hairs on cheeks, clypeus, scape, tibiae, and gaster, minute and inconspicuous on rest of head and dorsum of thorax. Appressed sparse pilosity of gaster one third to one half as long as standing hairs.

Worker (paratypes). — Total length 4.0-4.8 mm; maximum length of head 0.98-1.08 mm; maximum width of head (eyes included) 0.83-0.91 mm; length of scape 1.05-1.16 mm; Weber's length of thorax 1.38-1.56 mm. Completely resembling the soldier except for the narrower, posteriorly rounded head (Fig. 32), rounded anterior apron of clypeus, much longer scape and smaller size. Frontal area and frontal suture obsolescent.

Discussion. — Emery (1920) placed this species into the *Pseudocolobopsis* group, with doubt. Probably he was led by the description only, not having seen authentic material. As a matter of fact, this ant is much closer to the "*Myrmoturba*" complex of *Tanaemyrmex*, resembling very closely *cillae* Forel, differing only by the lack of contrasting coloration, slightly scarcer pilosity and the feeble occipital excision of the soldier.

Besides the types, I have seen the following material from southeastern Brazil: Santa Catarina State: Nova Teutônia (F. Plauermann leg.) 1 soldier. São Paulo State: Barueri (K. Lenko leg.) several nest series; Ilha Santo Amaro, Praia Iporanga (L. Travassos F. leg.) 1 soldier (WWK). Several nest series from São Paulo State: Campos do Jordão (W. W. Kempf leg.) and Goiás State: Anápolis (W. W. Kempf leg.) are doubtfully referred to the same species because they are fuscous-brown in color but otherwise completely similar. They also seemingly agree with *bonariensis parvulus* Emery (1894) and its varieties *opicus* Forel (1911) and *naevius* Forel (1912) erroneously attached to *bonariensis* and possibly synonyms of *pallescens*.

Biology. — The types were collected by Hetschko under bark and in seed pods of Leguminosae. The material collected by Lenko at Barueri was invariably nesting in rolled up pieces of dead bark of Eucalyptus trees or dead leaves, still hanging on the branches. The fuscous specimens from Campos do Jordão and Anápolis were nesting in dead hollow twigs still attached to the respective shrub or tree. This all seems to point out that *pallescens* is an obligatory tree-dweller or xylocete.



Camponotus Mayr

Fig. 32. *C. pallescens* Mayr, paratype worker, head. — Fig. 33. *C. sericatus* Mayr, lectotype worker, head and thorax in sideview. — Fig. 34. *C. sericatus*, worker, head. — Fig. 35. *C. pallescens*, lectotype soldier, head. — Fig. 36. *C. reinaldi*, n. sp., holotype soldier, thorax and petiole. — Fig. 37. *C. reinaldi*, paratype worker, head. — Fig. 38. *C. pallescens*, soldier, thorax. — Fig. 39. *C. reinaldi*, soldier, head. — (Kempf del.).

***Camponotus* (*Myrmothrix*) *sericatus* Mayr**

(Figs. 33, 34)

Camponotus sericatus Mayr, 1887. Verh. Zool.-bot. Ges. Wien. 37: 515-516 (Worker; Brazil: Santa Catarina State).

Types. — Workers from an unknown locality in Santa Catarina State, Brazil, in the Mayr collection (NHMW). Three specimens (lectotype and paratypes) examined.

Worker (lectotype and paratypes). — Total length 8.8-9.2 mm; maximum length of head capsule 1.99-2.10 mm; maximum width of head in front of eyes 1.38-1.52 mm; length of

scape 2.28-2.35 mm; Weber's length of thorax 3.26-3.36 mm; length of hind femur 2.35-2.46 mm. Fuscous brown to nearly black; mandibles, often also anterior portion of clypeus and cheeks reddish brown; antennae and legs yellowish brown, funiculus, coxae, femora and tibiae lighter; petiole and gaster brown, tip of the latter yellowish red. Oblique to erect hairs rather abundant on body and appendages, but of nearly uniform length and relatively short. Pubescence long, dense and silky on head and gaster, sparser on dorsum of thorax, absent on sides.

Head elongate, shape as shown in Figs. 33, 34. Mandibles smooth and shining with sparse, fine punctures and fine vestigial striolae near apical border, which bears six teeth. Clypeus with a median longitudinal keel, its anterior margin broadly rounded in the middle, laterally emarginate. Vertex and occiput flattened and depressed, posterior portion of head subconical, sides behind eyes rather strongly converging toward transverse and scarcely arched occipital border. Dorsum of head, including clypeus, rugulose, sparsely and coarsely punctate, somewhat shining. Gular face finely reticulate with sparse fine punctures and quite shining. Scapes somewhat rugulose.

Thorax in profile as shown in Fig. 33; dorsum scarcely arcuate. Promesonotum more sparsely, basal face and sides of thorax more densely punctate, intervals quite shining, often vestigially coriaceous-reticulate. Declivous face of epinotum finely transversely coriaceous and shining. Coxae, femora and tibiae finely coriaceous and shining.

Petiolar scale (Fig. 33) low, bluntly rounded at apex, thick, with superficial coriaceous sculpture and shining. Gaster finely but rather superficially rugulose-punctate, somewhat shining.

Discussion. — This species, still known only from type material, was placed into the *Myrmothrix*-group on account of the long erect or oblique hairs on the scapes and the legs. But the subconical depressed posterior half of the head is definitely transitional to some species of the *Tanaemyrmex*-group. The distinctive features of *sericatus* consist in the combination of the following characters: Erect to oblique pilosity on scapes and legs; uniform and relatively short standing hairs on head and on thorax; subconical flattened occiput; scarcely arcuate dorsum of thorax; low, thick petiolar scale; coarse and relatively sparse punctulae on head and on thorax, fine superficial punctulae on gaster.

***Camponotus (Myrmosphincta) reinaldi*, n. sp.**

(Figs. 36, 37, 39)

Soldier (holotype). — Total length 6.7 mm; maximum length of head capsule 1.52 mm; maximum width of head 1.45 mm; length of scape 1.41 mm; Weber's length of thorax 2.28 mm;

length of hind femur 1.59 mm. Black; mandibles, clypeus, cheeks and antennae fuscous reddish brown. Integument opaque, densely reticulate-punctate; sculpture more superficial on cheeks, scapes and legs, obsolescent on gular face which is quite shining. Whitish standing hairs, short and sparse on scape and funiculus; more abundant, longer but of unequal length on front, vertex, occiput, gular face, dorsum of thorax, coxae, flexor face of femora, petiole and gaster; oblique on extensor face of tibiae; none on clypeus and cheeks. Pubescence dilute on head and thorax; minute on cheeks, longer on dorsum of head; a patch of longer silky pubescence at each side of thorax below the metanotal groove and on bottom of posterior half of thorax. Gaster with rather short but dense pubescence.

Head shape as shown in Fig. 39. Mandibles smooth and shining, beset with fine, sparse, setigerous punctures; chewing border with six teeth. Clypeus without a median longitudinal keel; anterior apron little projecting forward, anterior margin nearly transverse, lateral cornes rounded. Cheeks with sparse setigerous punctures. Frontal area and suture distinct. Frontal carinae sinuous, diverging, reaching a little beyond the level of middle of eyes.

Thorax as shown in Fig. 36. "Neck" transversely striolate. Dorsum of pronotum with 2-3 faint longitudinal furrows at each side. Mesonotum as seen from above about as long as broad. Metanotal groove deeply impressed and broad, flanked at each side by the spiracles which are nearly dorsal in position. Basal and declivous face of epinotum, as seen in profile, forming nearly an even curvature, basal face distinctly longer than declivous face.

Petiolar scale distinctly narrower than epinotum, anterior face gently convex, posterior face flat, conical in profile, apex tapered to almost a point, narrowly rounded in both directions, sides not sharply marginate. Gaster anteriorly not truncate.

Worker (paratype). — Total length 5.4 mm; maximum length of head capsule 1.27 mm; maximum width of head (eyes included) 1.03 mm; length of scape 1.52 mm; Weber's length of thorax 1.81 mm; length of hind femur 1.52 mm. Resembling closely the soldier, with the following differences:

Head (Fig. 37) more elongate, broadly rounded in back. Mandibles finely punctate, subopaque. Clypeus with a longitudinal keel. Scape longer; when laid backward, about half of its length surpasses the occipital border. Cheeks with erect or oblique hairs. Clypeus and cheeks black.

Types. — 1 soldier (holotype) and 1 worker (paratype) from Agudos, São Paulo State, Brazil, taken in May 1958 by Father Reinaldo Mueller, O.F.M., at the Franciscan Seminary (WWK n. 2505). The species is gratefully dedicated to the collector, who during the eight past years has sent me a great many fine ant species.

Discussion. — *C. reinaldi* is readily separated from the other species of the subgenus *Myrmosphincta*. The narrow, elongate head, the lack of long appressed hair on head, thorax and gaster, the continuously curved epinotum, the short hairs on the scape, and the immarginate lateral and superior border of the petiolar scale distinguish it from *lancifer* Emery, while *sexguttatus* (F.) is more elongate, has a shallower metanotal impression, and a shiny transversely coriaceous gaster. *C. urichi* Forel is likewise not completely reticulate-punctate and opaque, has the long pubescence of *lancifer*, and long oblique hairs on the extensor face of femora.

Camponotus (Hypercolobopsis) divergens Mayr

(Figs. 40, 41, 45)

Camponotus divergens Mayr, 1887, Verh. Zool.-bot. Ges. Wien 37: 516-517 (Soldier; Brazil: S. Catarina).

Type. — A single soldier from Santa Catarina State, Brazil, (Hetschko leg. ?), in the Mayr collection (NHMW). I have seen the holotype, which has lost the gaster. No other specimens of this striking species are known.

Soldier (holotype). — Total length (after Mayr) 7.2 mm; maximum length of head capsule 2.06 mm; maximum width of head 2.02 mm; length of scape 1.56 mm; Weber's length of thorax 2.35 mm; height of petiole 0.73 mm. Fuscous brown; head and antennae yellowish-red; anterior clypeal border blackish; mandibles chestnut brown; trochanters, coxae II and III (except for the brown base), tip of femora pale testaceous. Erect hairs scarce on head and thorax (Figs. 40, 45). Scape and tibiae without erect or oblique hairs. Gaster (according to Mayr) with sparse erect pilosity and rather scarce pubescence.

Head (Figs. 40, 45) subquadrate, strongly constricted in front at mandibular insertion, widest in front of eyes, sides slightly converging caudad, occiput emarginate in frontal aspect. Anterior part of face including clypeus and part of cheeks, rather flattened and obliquely truncate yet not separated by a margination from rest of head. Mandibles finely striato-punctate at base, nearly smooth and somewhat shining at apex. Clypeus (Fig. 41)

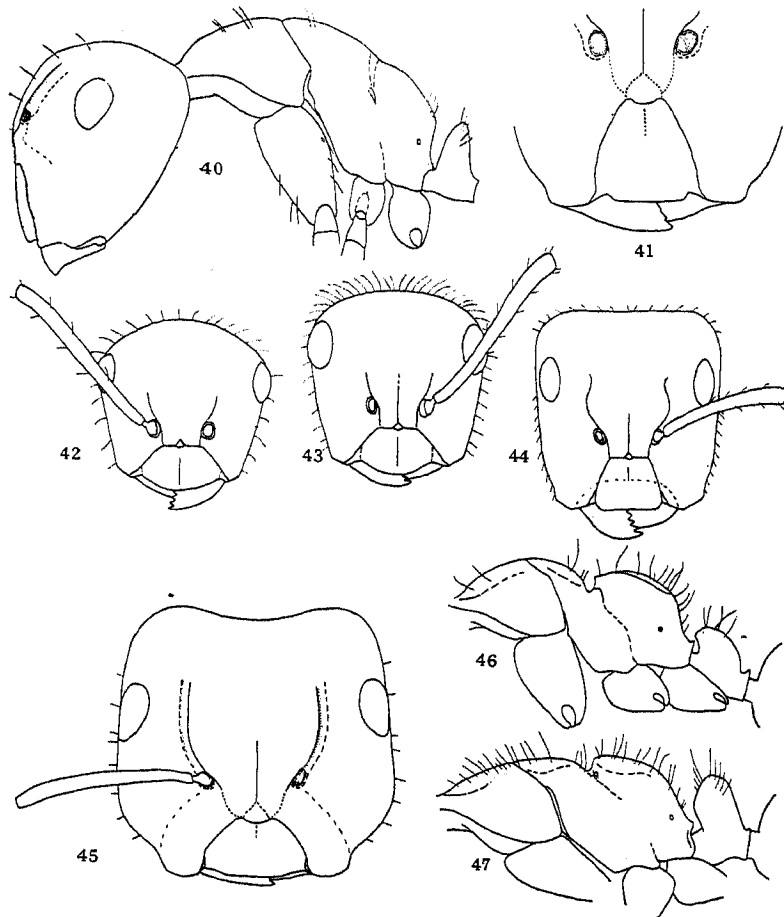
*Camponotus* Mayr

Fig. 40. *C. divergens* Mayr, holotype soldier, head and thorax in sideview. — Fig. 41. *C. divergens*, soldier, clypeus. — Fig. 42. *C. scissus* Mayr, lectotype worker, head. — Fig. 43. *C. propinquus* Mayr, lectotype worker, head. — Fig. 44. *C. propinquus*, soldier, head. — Fig. 45. *C. divergens*, soldier, head. — Fig. 46. *C. scissus*, worker, thorax. — Fig. 47. *C. propinquus*, worker, thorax. — (Kempf del.).

subtrapezoidal rather flattened, posteriorly with a very faint median longitudinal keel. Frontal area distinct. Frontal suture deeply impressed. Frontal carinae strongly sinuous, widely separated from each other behind, reaching back to level of posterior border of eyes. At each side of frontal carinae a distinctly impressed and excavate antennal scrobe. Antennal sockets far removed from posterior border of clypeus; in side view situated at about the middle of the head. Scape rather thin, strongly curved at base, when laid obliquely backward, scarcely

surpassing the occipital border. Eyes conspicuously flattened, situated in back of middle of head. Dorsum of head, clypeus, and antero-median portion of gular face reticulate-punctate and opaque. Sculpture coarsest on truncated portion of head (cheeks and clypeus), rather obsolete leaving integument quite shining on occipital corners and posterolateral areas of gular face.

Thorax subopaque above, more shining on the sides. Finely reticulate. Profile as shown in Fig. 40. Petiole surmounted by a anteroposteriorly compressed scale, the integument of which is very finely reticulate-rugulose, and shining, conical in profile. Gaster (according to Mayr) transversely striolate.

Discussion. — This is a remarkable species and should not offer difficulties in recognition. Emery who had not seen the type, placed it in the subgenus *Pseudocolobopsis*, although the shape of the broad, truncated head, clypeus and frontal carinae and the distinct and impressed antennal scrobe show at once that *Hypercolobopsis* is the better choice.

Camponotus (Hypercolobopsis) paradoxus Mayr

Camponotus paradoxus Mayr, 1866, Verh. Zool.-bot. Ges. Wien 16: 887-888 Pl. 20, fig. 2 ("worker" recte: female; Brazil).
Camponotus paradoxus janitor Forel, 1908, Verh. Zool.-bot. Ges. Wien 58: 41¹/₅ (Soldier, workers, female, male; Brazil: São Paulo). — Forel, 1911, Deutsche Ent. Zeitschr. p. 310 (Brazil, S. Paulo State: Alto da Serra = Paranapiacaba). — Luederwaldt, 1926, Rev. Mus. Paulista 14: 298-299, Pl. (Biology). — Nov. Syn.

Mayr described the species upon a broken-up female (not a worker as stated by mistake in the original diagnosis) from Brazil, received from the Museum of Stockholm. The gaster and the petiole were missing. Mayr's description of gaster fragments found in the same box, show that they did not belong to the specimen in question.

Forel, when describing the "race" *janitor*, admitted the possibility of this being just the same thing as *paradoxus* in the strict sense. Material examined from several localities gives no evidence of geographical races or two closely related species. Hence *janitor* is best considered a synonym of *paradoxus*.

I have not seen the types, but a good number of specimens, workers, soldiers and females, from the following localities in southeastern Brazil: Santa Catarina State: Blumenau, nest in bambo canes, (C. Prade leg.) (CTB). Paraná State: Taquara (M. Witte leg.) (CTB). São Paulo State; São Paulo City, boroughs of Ipiranga and Santo Amaro (H. Luederwaldt and J. Melzer leg.), Paranapiacaba (Alto da Serra), nest in bamboos,

(H. Luederwaldt leg.) (CTB). Guanabara State: Rio de Janeiro, Floresta da Tijuca (C. A. C. Seabra leg.) 1 alate female (WWK).

Camponotus (Myrmobrachys) propinquus Mayr

(Figs. 43, 44, 47)

Camponotus propinquus Mayr, 1887, Verh. Zool.-bot. Ges. Wien 38: 517-518 (Worker; Brazil: Santa Catarina State). — Emery, 1920, Bull. Soc. Ent. Ital. 52: 46, fig. VII, 4 (Worker. Brazil, Santa Catarina: Joinville). — Kusnezov, 1951, Acta Zool. Lill. 12: 194, 215 (Worker, soldier, female; Argentina, Jujuy; Misiones; Tucumán: Vila Padre Monti, Monumento al Indio).
Camponotus paris Forel, 1912, Mém. Soc. Ent. Belg. 20: 80-81 (Soldier; Brazil, São Paulo: Botucatu). — Nov. Syn.

Types. — 2 workers (lectotype and paratype) from the Mayr collection (NHMW); both were examined. Type of *paris* presumably in the Forel collection. Not seen.

Worker (lectotype). — Total length 3.8 mm; maximum length of head capsule 0.94 mm; maximum width of head including eyes 0.91 mm; length of scape 0.94 mm; Weber's length of thorax 1.27 mm; Black; coxae, femora and tibiae fuscous brown; mandibles, antennae and tarsi brown.

Head shape in full-face view as in Fig. 43. Mandibles narrow, smooth and shining, sparsely punctate. Clypeus rather shining, finely and superficially reticulate, with a distinct blunt median longitudinal keel. Front, vertex and occiput subopaque, finely and densely reticulate-punctate. Cheeks with more evanescent sculpture, gular face nearly smooth and quite shining. Frontal area impressed and shining. Frontal suture more or less vestigial, reaching level of posterior end of strongly sigmoid frontal carinae. Eyes gently convex. Scapes coriaceous-rugulose but rather shining.

Thorax in profile as shown in Fig. 47. Shoulders rounded. Promesonotum very gently curved in both directions, sides bluntly marginate. Mesonotum transversely elliptical, laterally separated from pronotum by a shallow excision, posteriorly gradually descending into deeply impressed metanotal groove, which is laterally delimited by the somewhat protruding spiracles. Basal face of epinotum anteriorly abruptly raised above the metanotal groove, subcircular when seen from above, moderately convex in both directions; antero-laterally bluntly marginate, posteriorly grading into declivous face.

Dorsum of pronotum reticulate-punctate, sides with rather obsolescent sculpture and quite shining. Mesonotum finely reticu-

late-rugulose, rugulae forming transverse concentric arches, their convexity facing caudad. Basal face of epinotum with similar sculpture, rugulae disposed in concentric circles. Sides of thorax also somewhat shining, but more strongly reticulate-rugose predominating the horizontal rugae. Declivous face and legs superficially coriaceous and shining.

Erect hairs whitish, abundant, of variable length, longest on epinotum and on petiolar scale, shortest on scape. Hairs bordering head in full face view and dorsum of thorax and petiolar scale shown in Figs. 43 and 47. Appressed short pilosity sparse and rather inconspicuous on head, dorsum of thorax and legs; on gaster less than half as long as standing hairs. Extensor face of tibiae with oblique hairs. Scapes rather densely beset with hairs, most of them subappressed; only erect hairs shown in Fig. 43.

Soldier. — Total length 5.0-5.5 mm; maximum length of head capsule 1.27-1.52 mm; maximum width of head 1.12-1.34 mm; length of scape 0.91-0.94 mm; Weber's length of thorax 1.48-1.60 mm. Black; mandibles, anterior border of clypeus and cheeks, scape and tarsi fuscous reddish brown to yellowish brown.

Head (Fig. 44) subrectangular, sides rather straight, slightly converging anteriorly, occipital border straight to feebly excised. Mandibles subopaque and coriaceous at base, finely striolate but shining at apex; chewing border with 6 teeth. Antero-median portion of head slightly obliquely truncate or impressed, the truncate area comprising part of the cheeks and two thirds of the clypeus. The latter with the subrectangular mesial portion scarcely projecting forward, its antero-lateral corners rounded, with a short longitudinal keel on posterior third. Frontal area very small, impressed and shining. Frontal suture vestigial, fading out before reaching level of posterior end of strongly sinuous and diverging frontal carinae. Eyes remarkably flattened. Scape, when laid obliquely backward, attaining or slightly surpassing the occipital corner. Erect hairs on cheeks, occiput and scape very short. Promesonotum laterally indistinctly marginate. For the rest, resembling the worker caste.

Distribution. — From southeastern Brazil to northwestern Argentina.

Specimens examined: Brazil, Santa Catarina State: Blumenau (R. Mueller leg.) 1 worker (WWK); locality unknown (Hetschko leg.) 2 workers, lectotype and paratype (NHMW). São Paulo State: Agudos (R. Mueller, W. W. Kempf leg.) 13 workers (strays) (WWK); Barueri (K. A. Cantareira (A. Cruz leg.) 1 soldier (WWK). Goiás State: Anápolis (W. W. Kempf leg.) 8 workers, 2 soldiers (WWK).

(Lento leg.) 12 workers, 3 soldiers (WWK & Coll. Lento).

Discussion. — The present species is a close relative of *jheringi* Forel and *scissus* Mayr. It differs from *jheringi* (worker and soldier) in the more deeply impressed metanotal groove, much longer basal face of epinotum and the blunt petiolar apex. The differences from *scissus* will be given below. The workers and soldiers taken from the same nest at Barueri and at Anápolis show that *paris* (soldier) and *propinquus* (worker) are synonyms. Although the holotype of *paris* was not examined, Forel's description leaves no doubt concerning its identity.

The worker measurements vary as follows: Total length 3.5-4.0 mm; maximum length of head capsule 0.83-0.98 mm; maximum width of head, eyes included 0.76-0.91 mm; length of scape 0.83-0.95 mm; Weber's length of thorax 1.16-1.34 mm.

Santschi (1922) described a variety *baretoi* from Rosario de la Frontera, Salta Province, Argentina. Apparently this is just another synonym of *propinquus*, the formal proposition of which depends however from an examination of the types, not seen during this investigation.

Ethology. — *C. propinquus* has been found nesting in hollow dead twigs still attached to the shrub or tree. The Argentine specimens taken by Kusnezov (1951) in the Tucumán province were taken in tree trunks or twigs of herbaceous plants at relatively humid localities. /v

Camponotus (Myrmobrachys) scissus Mayr

(Figs. 42, 46)

Camponotus scissus Mayr, 1887, Verh. Zool.-bot. Ges. Wien. 38: 518-519 (Worker); Brazil, Santa Catarina State: Blumenau). — Emery, 1920, Bull. Soc. Ent. Ital. 52: 47. — ? Kusnezov, 1951, Acta Zool. Lill. 12: 184, 223, fig. 15 (Worker); Argentina, Misiones: Eldorado).

Types. — 3 workers in the Mayr collection (NHMW), all of them examined. The locality label attached to the specimens states that they were collected at Blumenau, although Mayr does not mention this in the original description, which is otherwise quite thorough and complete.

Worker (lectotype). — Total length 3.8 mm; maximum length of head capsule 0.85 mm; maximum width of head including eyes 0.87 mm; length of scape 0.91 mm; Weber's length of thorax 1.12 mm. Black; mandibles, antennae, mid coxae, trochanters, tarsi yellowish brown; femora and tibiae more reddish brown. Quite close to the preceding *propinquus*, from which it differs as follows:

1) Integument more shining, sculpture superficially coriaceous on head and thorax, lacking punctulae. Sides of posterior half of thorax less sharply reticulate-rugose. 2) Head (Fig. 42) lacking frontal suture. 3) Promesonotum (Fig. 46) in profile much more strongly vaulted. Metanotal groove very deeply impressed. Anterior and lateral border of basal face of epinotum

sharply marginate. Lateral border of pronotum less distinctly marginate. 4) Petiolar node low and long, scale inclined cephalad, posterior face oblique and convex (Fig. 46). 5) Standing hair somewhat sparser, especially on sides of head and on occiput, also on pronotum. 6) Contrasting coloration of coxae: coxae I and III black, coxae II yellowish brown.

Variation of measurements: Total length 3.5-4.0 mm; maximum length of head capsule 0.78-0.94 mm; maximum width of head 0.82-0.91, Weber's length of thorax 1.12-1.23 mm.

Specimens examined. — Brazil, Santa Catarina State: Blumenau (Hetschko leg.) 3 workers (holotype and paratypes) (NHMW) (R. Mueller leg.) 1 worker (WWK). Espírito Santo State: S. Teresa (O. Conde leg.) 2 workers (CTB).

So far, only a few stray workers of this species have been collected, the remaining castes still being unknown. Kusnezov's (1951) record of this species from Misiones, Argentina, is rather doubtful. Borgmeier determined the specimens in question (of which I have not seen any material) as "sp. prope *scissus*". Kusnezov's figure of the worker shows that it is something closer to *jheringi*.

***Camponotus (Myrmeurynota) linnaei* Forel**

Camponotus angulatus Mayr, 1870 (*nec* Fr. Smith, 1859), Sitzber. Akad. Wiss. Wien 61: 375, 382 (Worker; Colombia).
Camponotus linnaei Forel, 1886, Ann. Soc. Ent. Belg. 30: 171 (n. n.) — Wheeler, 1934, Bull. Mus. Comp. Zool. Harvard 77: 210-213 (Soldier, worker; Panama Canal Zone).
Camponotus angulicollis Emery, 1887, Ann. Mus. Stor. Nat. Genova 24: 218 (n. n.).
 ? *Camponotus (Colobopsis) christopherseni* Forel, 1912, Mém. Soc. Ent. Belg. 20: 85-87 (Soldier, worker, female; Panama: Manei).

This species, which was originally described upon a few workers from Colombia, is known to occur from the Amazon and the Guianas to southern Mexico. The soldier was described by Wheeler in 1934, and due to its truncate head the species was shifted to the subgenus *Manniella*. As shown by Creighton (1951, p. 56), the latter step may not be maintained, inasmuch as *Manniella*, in order to cease to be "a monument of heterogeneity", must be restricted to the peculiar Cuban species *sphaericus*. On the other hand, on account of the marginate lateral border of the pronotum, I cannot follow Creighton's suggestion, to associate *linnaei* with *Myrmaphaenus*, and propose to leave it in the subgenus *Myrmeurynota*.

According to the original description, *C. christopherseni* Forel, 1912, is certainly quite removed from the subgenus *Hypercolobopsis* and closer to, if not a synonym of, *linnaei*, although a few

minor points of the diagnosis are in disagreement. I do not propose formal synonymy, but I like to point out a case which bears investigation.

A new interesting locality record for *linnaei* is now available, based on a single soldier, collected by Dr. C. R. Gonçalves at the Monumento Rodoviário, Rio de Janeiro State, on the Rio-São Paulo highway. This means a noteworthy and interesting increase of the range of the species.

Wheeler (1934), not having been able to take females from nests of the species collected by himself at several localities in British Guiana and Central America, suggested that the species might possibly be lacking this caste, its function being taken over by the soldier. This is not correct, because I have in my collection two workers and 1 female of *linnaei*, from Guatemala (same nest series), received from the U. S. National Museum.

Bibliography

- Borgmeier, T., 1928, Algumas formigas do Museu Paulista. — Bol. Biol. São Paulo, fasc. 12, pp. 55-69, 4 figs.
- 1930, Duas rainhas de *Eciton* e algumas outras formigas brasileiras. — Arch. Inst. Biol. S. Paulo 3: 21-40, 4 pls.
- 1937, Formigas novas ou pouco conhecidas da América do Sul e Central, principalmente do Brasil. — Arch. Inst. Biol. Veget. Rio de Janeiro 3: 217-255, 38 figs. and 6 pls.
- 1939, Nova contribuição para o conhecimento das formigas neotrópicas. — Rev. de Ent. Rio de Janeiro 10: 403-428, 19 figs.
- 1954, Two interesting Dacetine ants from Brazil. — Rev. Brasil. Biol. 14: 279-284, 9 figs.
- Brown, Jr., W. L., 1950, Revision of the ant tribe Dacetini: II. *Glaomyrmex* Wheeler and closely related small genera. — Trans. Amer. Ent. Soc. 76: 27-36, 2 figs.
- 1953, Characters and synonymics among the genera of ants. — Breviora Mus. Comp. Zool. Harvard, n. 18, pp. 1-8.
- 1958, Contributions toward a reclassification of the Formicidae. II. Tribe Ectatommini. — Bull. Comp. Zool. Harvard 118: 175-362, 48 figs.
- Creighton, W. S., 1950, The ants of North America. — Bull. Mus. Comp. Zool. Harvard 104: 1-585, 57 pls.
- 1951, Studies on Arizona ants. 1. The habits of *Camponotus ulcerosus* Wheeler and its identity with *C. bruesi* Wheeler. — Psyche 58: 47-64, 3 figs., 1 pl.
- Emery, C., 1887, Catalogo delle formiche esistenti nelle collezioni del Museo Civico di Genova. III. Formiche della regione Indo-Malese e dell'Australia. — Ann. Mus. Stor. Nat. Genova 24: 209-258, 3 figs., 2 pls.
- 1894, Studi sulle formiche della fauna neotropica. VI-XVI. — Bull. Soc. Ent. Ital. 26: 137-242, 4 pls.

- 1896, Studi sulle formiche della fauna neotropica. XVII-XXV. — Bull. Soc. Ent. Ital. 28: 33-107, 1 pl.
- 1905, Studi sulle formiche della fauna neotropica. XXVI. — Bull. Soc. Ent. Ital. 37: 107-194, 47 figs.
- 1911, Subfam. Ponerinae. — Gen. Insect. Insect. fasc. 118, 125 pp., 3 pls.
- 1915, Noms de sous-genres et de genres proposés pour la sous-famille des Myrmicinae. Modifications à la classification de ce groupe. — Bull. Soc. Ent. France (1915), pp. 189-192.
- 1920, Studi sui "Camponotus". — Bull. Soc. Ent. 52: 3-49, 8 figs.
- 1920, Le genre "Camponotus" Mayr. Nouvel essai de sa subdivision en sous-genres. — Rev. Zool. Afric. 8: 229-260.
- 1925, Subfam. Formicinae. — Gen. Insect fasc. 183, 302 pp., 4 pls.
- Forel, A., 1886, Études myrmécologiques en 1886. — Ann. Soc. Ent. Belg. 30: 132-215.
- 1886, Espèces nouvelles de fourmis américaines. — Ann. Soc. Ent. Belg. (C. R.) 30: 38-49.
- 1912, Formicides Néotropiques. Part. IV-VI. — Mém. Soc. Ent. Belg. 20: 1-92.
- Kempf, W. W., 1951, A taxonomic study on the ant tribe Cephalotini. — Rev. de Ent. Rio de Janeiro 22: 1-244, 157 figs.
- 1958, New studies of the ant tribe Cephalotini. — Stud. Ent. Petrópolis 1: 1-176, 28 figs. and 8 pls.
- 1959, Two new species of "Gynomymex" Borgmeier, 1954, from southern Brazil, with remarks on the genus. — Rev. Brasil. Bio. 19: 337-344, 9 figs.
- Kusnezov, N., 1951, El género "Camponotus" en la Argentina. — Acta Zool. Lill. 12: 183-252, 4 maps, 3 pls.
- Mayr, G. 1870, Formicidae novogranadenses. — Sitzber. Akad. Wiss. Wien 61: 370-417, 1 pl.
- 1887, Suedamerikanische Formiciden. — Verh. Zool.-bot. Ges. Wien, 37: 511-632.
- Weber, N. A., 1943, New ants from Venezuela and neighboring countries. — Bol. Ent. Venez. 2: 67-78, 3 figs.
- Wheeler, W. M., 1922, Keys to genera and subgenera of ants. — Bull. Amer. Mus. Nat. Hist. 45: 631-710.
- 1934, Neotropical ants collected by Dr. Elisabeth Skwarra and others. — Bull. Mus. Comp. Zool. Harvard 77: 159-240, 6 figs.
- Wilson, E. O., 1958, Studies on the ant fauna of Melanesia. III. *Rhytidoponera* in western Melanesia and the Molucas. IV. The tribe Ponerini. — Bull. Mus. Comp. Zool. Harvard 119: 303-371.