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SOME NEW SPECIES OF DACETINE ANTS

BY WILLIAM L. BROWN, JR.

Museum of Comparative Zoology, Harvard University

The five species of ants described here include two in *Colobostruma* Wheeler (which genus I currently consider to include *Alistruma* Brown and *Clarkistruma* Brown), one in the *gundlachi* group of *Strumigenys* Fr. Smith, one in *Smithistruma* Brown, and one in *Codiomyrmex* Wheeler. These descriptions are offered in order to validate names used in a general paper on dacetine evolution by E. O. Wilson and myself, which we hope to publish shortly. The paratype variation and other data pertaining to the two *Colobostruma* and the *S. gundlachi* group species are to be discussed in revisions of these groups now in preparation. Abbreviations for measurements and proportions used are given in Brown, 1953, Amer. Midl. Nat., 50: 7-15; and Brown, 1953, Jour. New York Ent. Soc., 61: 53 and 101. The initials [MCZ] refer to deposition of types in the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

COLOBOSTRUMA CERORNATA new species

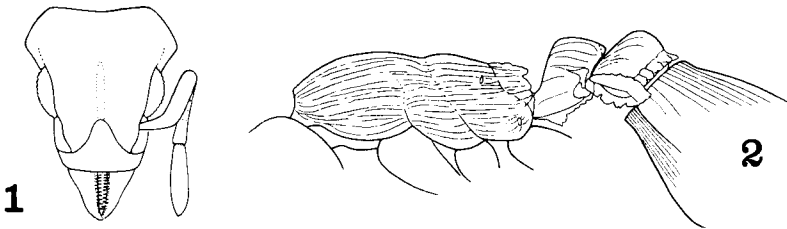
(Figs. 1, 2)

Holotype worker. TL 2.5, HL 0.59, HW 0.52 (CI 88), ML 0.17 (MI 29), WL 0.71, scape L 0.31, greatest diameter of eye 0.17 mm.

Shape of head as in Figure 1 (drawn from a paratype); seen in side view, deep, convex above, with occiput rounded. Mandibles with a stout apical tooth and lesser preapical tooth; inner margins straight, edentate (though appearing falsely denticulate

due to integumental microstructure); beneath the border, however, are fine, sharp teeth arranged serially, visible only from below or when mandibles are open (Fig. 1).

Eyes very large, with 80-85 coarse facets, set in shallow depressions or scrobes below cariniform dorsolateral margins of head. Antennae with curved scapes to fit around eyes when retracted; funiculus with 3 segments, the second of these long, representing the fused segments II, III, and IV of the related 6-segmented species. Labrum large, covering under-mouthparts when retracted, bipartite, the two rounded lobes separated by a shallow notch.



Figs. 1 and 2. *Colobostruma cerornata* new species, worker paratype.

Fig. 1. Head; full-face (dorsal) view, right antenna and pilosity omitted.

Fig. 2. Alitrunk, nodes and base of gaster, side view, pilosity omitted.

Alitrunk as in Figure 2 (drawn from a paratype). Promesonotum gently convex, weakly submarginate along dorsolateral borders; humeral angles prominent, subacute, margined with white waxlike material, also edging the anterior pronotal border except in the middle. No promesonotal suture; alitrunk constricted at distinct metanotal groove. Propodeal lamellae (no teeth distinguishable) waxlike, white, thick, soft and irregular, readily bent or distorted (as seen in paratypes). Petiole and postpetiole with waxlike borders, simulating modest spongiform appendages (as in *Strumigenys*). Gaster both above and below with coarse longitudinal costulae, waxlike at base, the dorsal costulae extending more than $1/3$ the length of the basal segment. Gaster otherwise loosely shagreened, weakly shining, as is also the posterior portion of the postpetiolar disc.

Head dorsally covered with shallow indistinct foveolae, mostly contiguous; the boundaries between these form fine longitudinal rugules or costules. This coarser (but not conspicuous) sculpture is overlain by dense, opaque punctulation which also extends to the rest of the head; gula also with loose longitudinal costulation. Alitrunk, petiolar node, and anterior part of postpetiolar disc distinctly longitudinally costulate, the costulae often whitish and waxlike in appearance, especially on sides of alitrunk and extending onto propodeal lamellae. Intercostular spaces, antennae, legs and mandibles chiefly very finely and shallowly, but densely, punctulate-granulose, opaque.

Head and scapes covered evenly above by numerous whitish, suborbicular, subappressed squamose hairs of nearly equal size throughout. Hairs on alitrunk dorsum narrower, more cochlear and more erect, less abundant, not conspicuous. Numerous short, spatulate erect hairs on both nodes and both gastric surfaces, curved caudad. Mandibles and legs with short, sparse appressed hairs.

Color dull yellow; legs, mandibles and antennae light yellow.

Holotype [MCZ] a worker taken foraging on Dempster Head (also called Telegraph Hill), at Esperance, Western Australia, February 4-6, 1955 (E. O. Wilson leg., journal no. 428). Dempster Head is a large, rounded gneissic-outerop hill with low heath-like shrubs and some dwarf wattles and mallee. Paratypes were taken at the type locality and on the sandplain about 8 km. northeast of the old (abandoned) Thomas River Station, about 65 miles (airline) east of Esperance, near the end of January, 1955, by E. O. Wilson and C. P. Haskins. All specimens were taken at night by sweeping the low heath-like vegetation. Variation is mostly in size, and this is not particularly marked.

This species is very distinct from all other *Colobostruma* in its very large eyes, small size, and particularly in its peculiar pilosity (recalling that of certain *Strumigenys* species), and its waxlike costulation and pedicellar appendages. The 3-segmented funiculi are also found in two or three other *Colobostruma* species. This is one of a peculiar large-eyed, depigmented fauna of ants, including three species of *Colobostruma*, found foraging at night on low heath-like vegetation of the coastal plain of this isolated part of Western Australia.

COLOBOSTRUMA AUSTRALIS new species
(Fig. 3)

Holotype worker. TL 3.2, HL 0.73, HW 0.66 (CI 90), ML 0.19 (MI 27), WL 0.85, scape L 0.37, greatest diameter of compound eye 0.17 mm.

Head like that of *C. alinodis* (Forel), but shorter; evenly convex above; lateral lobes behind eyes evenly rounded. Clypeus broadly triangular, flat, rounded behind, with slightly convex anterior (free) margin mesad. Mandibles triangular, flattened above, with slightly down-curved apices; masticatory margins very finely denticulate (as seen when mandibles are fully closed), but ventral to this margin is a row of fine, acute, oblique teeth, visible from above only on opened mandible. Apex of mandible with one stout tooth and one smaller (preapical)

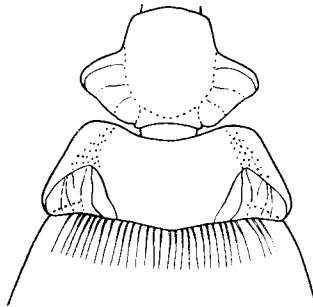


Fig. 3. *Colobostruma australis* new species, worker paratype (Kallista), petiole, postpetiole and gastric base as seen from above.

triangular tooth. Antennae with sigmoidally-curved, incrassate (but not lobed) scapes; funiculus with 5 distinctly separated segments. Labrum large, tongue-like, with rounded, entire margin.

Alitrunk with a depressed, nearly flat pronotum having blunt, almost rounded humeral angles, not marginate. Mesonotum distinct, convex, rising above pronotum and propodeum. Promesonotal suture and metanotal grooves marked by shallow sulci. Propodeum downsloping caudad, convex between large, broad lamellae, each forming a large acute tooth above, concave below, with a ventral projection.

Petiolar node subcuboidal as seen from side and above, with short, downsloping peduncle, lateral alae, and a short, oblique anteroventral spine trailing a narrow, areolate keel. Postpetiole shorter and lower in side view, but broader in dorsal view (Fig. 3). Basal costulae extending about $1/8$ the length of the basal segment. Gaster otherwise smooth and shining. Head, alitrunk and both nodes coarsely but shallowly foveolate, the foveolae centrally punctate, most distinct and mostly contiguous on head, becoming smaller, less distinct and sparser caudad and on clypeus.

Interfoveolar spaces vary from nearly smooth, shining (on occiput) to finely shagreened and opaque (nodes, clypeus). Mandibles, antennae, legs, petiolar peduncle finally punctulate-granulose, opaque. Lower pleura indefinitely rugulose, opaque.

Pilosity confined to four stiff truncate and a few smaller flexuous hairs at the gastric apex. Legs, mandibles, and antennae with very fine, short, sparse reclinate pubescence. Color ferruginous yellow, with dark brown markings, one on vertex, one on center of clypeus, extending to frontal triangle, a large diamond-shaped spot in the center of the first gastric tergum, flanked on each side by a similar spot. This "three diamond" pattern occurs also in some other species of the genus.

Holotype worker [MCZ] one of a nest series taken in a large red-rotten log in wet *Eucalyptus regnans*-tree fern forest at Kallista, in the Dandenong Range, Victoria, Australia (J. Clark and W. L. Brown leg., September, 1950). Several paratype series, including males and females, were examined from Kallista (J. Clark leg.), Narbethong (J. J. McAreavey leg.), and Fern-tree Gully (J. Clark leg., Brown leg.) in Victoria, and from Moss Vale (T. Greaves leg.) and Dorrigo (W. Heron leg.) in New South Wales. This species is obviously widespread in moist forests in southeastern Australia. Its nests are normally in rotting wood. It is distinguished from the other *Colobostruma* species, described and undescribed, by means of its 6-segmented antennae with non-lobate scape, its "normal" head, with rounded lobes in back of the eyes, its partly shining sculpture and its predominantly yellow color.

STRUMIGENYS JAMAICENSIS new species

Holotype worker. TL 2.6, HL 0.54, HW 0.44 (CI 81), ML 0.41 (MI 76), WL 0.60, scape L 0.37 mm. (SI 84). Resembles *S. gundlachi*, but larger in size and with relatively much longer mandibles and antennae. Mandibles with gently convex outer borders and straight inner (masticatory) borders, the latter bearing 8 denticles on the left and 7 on the right; denticles strong and acute, occupying about the apical 2/3 of the free inner border, roughly decreasing in size from apex toward base of mandible.

Alitrunk relatively longer than in *gundlachi*, forming two separate convexities divided by the rather deeply impressed metanotal groove. Petiole, postpetiole and gaster also a little longer and more slender than in *gundlachi*. Sculpture and pilosity much as in *gundlachi*, although the ground hairs tend to be less conspicuous in the new species, and the erect hairs larger; *gundlachi* has more but shorter erect hairs on the gastric dorsum. Color blackish-brown; mandibles and legs medium brown. The color is considerably darker than is usual for *gundlachi*, but samples of *gundlachi* from Jamaica are also rather dark — nearly as dark as *jamaicensis*.

Holotype (Collection of the Illinois Natural History Survey, Urbana, Illinois) a worker from a series taken at Corn Puss Gap (about 2000 feet), St. Thomas Parish, eastern Jamaica (H. B. Mills leg.), INHS accession no. 49627, Mills no. J-18. Paratypes from the type collection and in two series from Hardwar Gap (about 4000 feet), Portland Parish, Jamaica (Mills leg.), INHS accession nos. 49613 and 49616, Mills nos. J-4 and J-7, deposited in INHS, MCZ and elsewhere. Paratypes are similar to holotype; principal variation is in mandibular teeth, varying from 6-8 in number.

The large size, long mandibles, long scapes and slender alitrunk will distinguish this species at once from the other two members of the *S. gundlachi* group on Jamaica, *S. gundlachi* Roger and *S. eggarsi* Emery. The long scapes and blackish color, among other characters, distinguish *S. jamaicensis* from the Cuban and mainland species of the group.

SMITHISTRUMA WEBERI new species
(Fig. 4)

Holotype worker. TL 2.3, HL (omitting cervical flange) 0.61, HW 0.39 (CI 64), ML (estimated from open mandibles) 0.08, WL 0.58, scape L 0.27 mm.

Head and mandibles as shown in Figure 4; dorsum of head gently convex behind in both directions, in side view its dorsal outline nearly straight from vertex to clypeus, central or "frontal" part of head gently convex from side to side. Clypeus with a broad and very shallow transverse impression near mid-length; tumulus of clypeus broad, indicated by dashed lines in Figure 4. Eyes fairly large and convex. Mandibles small, with basal lamella like that of *S. truncatidens* Brown, but more slender and with broader apical expansion; diastema distinct; first tooth of principal series very small, second tooth largest; all teeth acute. Scapes inerassate, broadest near the middle, only slightly bent near their bases.

Pronotum depressed, broad, gently convex and forming a single profile convexity with mesonotum; promesonotal suture present but inconspicuous. Seen from above, promesonotum broadly oval, separated in center front by a short transverse margin from the cervix, but not marginate on sides; no humeral angles. Metanotal groove distinct but shallow; propodeal dorsum slightly convex (straight in profile), terminating in a pair of very small triangular teeth subtended by narrow, nearly straight infradental lamellae. Petiole with a peduncle about as long as its node; node high, rounded, with a flat, smooth, steep anterior face defined by weak carinae on both sides and above. Free portion of nodal summit seen from above trapezoidal, a little broader than long. Postpetiolar node with a convex, smooth and shining disc about twice as wide as the petiolar node. Both nodes, as well as the anterodorsal gastric margin (but not the anteroventral face of the gaster), provided with unusually voluminous spongiform appendages in all the usual positions. Base of first gastric segment with coarse costulae extending about $1/3$ the free length of the segment. Gaster otherwise smooth and shining.

Head, alitrunk and petiolar node generally punctate-rugulose, this sculpture much coarser and more irregular than in other

Smithistruma species. Pronotal rugules more longitudinal. The mesepisterna and propodeal dorsum are densely punctulate, and the metapleura, propodeal declivity, anterior face of petiolar node and tumulus of clypeus are mostly smooth and shining. Antennae, scrobes, exposed parts of mandibles and legs finely punctulate-granulose.

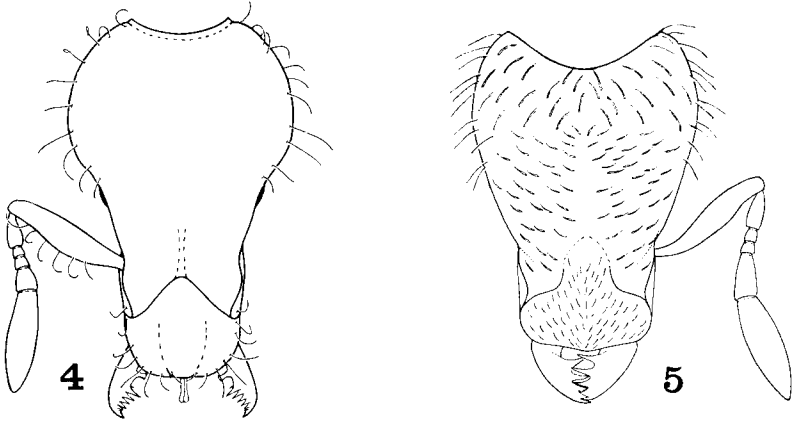


Fig. 4. *Smithistruma weberi* new species, holotype worker, full-face view of head, showing principal fringing pilosity only. Fig. 5. *Codiomyrmex semicomptus* new species, paratype worker with rather narrow head, full-face view of head.

The dorsal surfaces of head, thorax proper, both nodes and both upper and lower sides of gaster, and also the anterior border of clypeus and scapes, with long, fine curved hairs. On the dorsal surface of the head proper, the 50-60 hairs are erect, mesally curved, and have narrowly flattened-clavate apices. On the clypeus, there are an additional 30 or more hairs of various lengths, predominantly directed anterolaterad, but with their apices mostly recurved dorsad and more or less posteromesad. The central clypeal hairs have slightly enlarged apices. Hairs, more peripherally situated on cranium, scapes and clypeus, are finer and tend to have apices merely truncate, rather than enlarged (Fig. 4). The long hairs on the rest of the body become progressively finer caudad, and many of them show "furled

coachwhip'' looping, or else arch back to the surface. Arched and looped hairs are abundant on the gastric dorsum. Appendages clothed with fine arched-reclinate hairs.

Color light reddish-ferruginous, extremities more yellowish.

Holotype a unique worker from Ango, Belgian Congo, 1948 (N. A. Weber leg., no. 2170), in the Weber Collection. Several years ago I saw another worker of this species from northern Angola (Machado leg.) in Dr. F. Bernard's collection; because at that time I thought he might eventually describe this species, I did not record the details.

CODIOMYRMEX SEMICOMPTUS new species
(Fig. 5)

Holotype worker. TL 2.1, HL 0.56, HW 0.42 (CI 75), ML 0.10 (MI 18), WL 0.52, scape L 0.25 mm. Shape of head and mandibles as in Figure 5, drawn from a paratype, but slightly wider across occiput. Dorsal surface of cranium strongly convex in the center, sloping toward occiput and anteriad (toward clypeus), so that the occipital lobes are narrowly rounded apically as seen from side. Mandibles strongly convex, rising above the anterior clypeal border (as is usual in *Codiomyrmex*); with five strong, acute conical teeth, the first (nearest base) and fourth a little smaller than the second and third, the apical (fifth) tooth smallest. The basal lamella is normally hidden beneath the clypeus at full closure; it is set at a lower level than the principal teeth and oblique to them, and is separated from them by a brief diastema; in shape and size it resembles the lamella of *Smithistruma weberi* (Fig. 4), but is sharply truncate without being broadened at the apex. Clypeus almost perfectly plane.

Alitrunk narrow, only slightly more than half as wide as the head, its dorsum almost flat from side to side and defined by lateral margins, but forming one gentle convexity from pronotum to propodeal teeth, with only a slight dip at the posterior mesonotum. Seen from above, the pronotum is evenly rounded and marginate, without humeral angles and only slightly wider than the propodeum; promesonotum with a faint median longitudinal carinula. Propodeum curving evenly down into the concave declivity between the dorsolateral margins and the

propodeal teeth; teeth with horizontal dorsal borders, completely involved in the broad infradental lamellae, which are briefly concave below the short acute dorsal tips, then below this broadly convex.

Petiole large, its peduncle rapidly enlarging caudad, but distinctly differentiated from the large node. Node high in front, with a strong, bluntly raised anterodorsal margin and steep bicarinate anterior face, the dorsal surface then strongly convex and sloping caudad; node distinctly longer than high, and, seen from above, longer than broad, with rounded sides and truncate anteriorly. Postpetiolar disc broadly subelliptical, broader than long and about $1 \frac{1}{3}$ times as broad as petiolar node. A full complement of voluminous, areolate spongiform appendages present in all the usual positions on both nodes and at the base of the gaster. Gaster depressed, much broader than deep. Basigastric costulae distinct, crowded, effaced mesally, extending about $\frac{1}{5}$ the length of the first segment.

Gaster otherwise, both nodes, entire alitrunk, most of legs, anterior frontal area of head, and clypeus smooth and shining except for scattered piligerous punctures. Scrobes, upper sides of hind coxae and petiolar peduncle densely reticulate-punctate. Mandibles, antennae and small parts of legs finely punctulate-granulose, subopaque to opaque. Cranium, both dorsal and ventral surfaces, loosely and rather coarsely rugose or costulate, the rugae running more or less longitudinally. Between the rugae are various coarse and fine punctures, rendering the surface here opaque (more shining near the midline).

Occiput and rest of dorsal surfaces of body, including the entire legs, with numerous long (mostly 0.07-0.10 mm.) fine hairs with tapered or truncate tips, becoming more spatulate on center of head, and on anterior half of head proper represented by shorter, appressed linear-spatulate hairs directed mesad, this appressed pilosity repeated in miniature on clypeus. Scapes each with a row of short remiform hairs, inclined apicad. Mandibles, antennae, gula, and tarsi with fine reclinate hairs.

Color deep reddish-brown, head and gaster darkest; clypeus, mandibles, antennae and legs yellowish-ferruginous.

Holotype [MCZ] a worker, chosen from a series of 18 workers taken together in heavy, dense eucalypt forest adjoining rain

forest at Shipton's Flat, about 20-25 miles south of Cooktown, Queensland, Australia (P. F. Darlington leg.). The 17 paratypes are very similar to the holotype, and vary hardly at all in measurements; several are subteneral; these will be placed in the MCZ and with other ant collections.

This species greatly resembles the larger Sumatran ant *Weberistruma jacobsoni* (Menozzi) in shape of head and thorax proper, as well as in sculpture and pilosity, but many details are different, including the diagnostic shape of the petiole (clavate, with only feebly differentiated node in all *Weberistruma*). From the two other known *Codiomyrmex* species, *C. thaxteri* Wheeler (Trinidad) and *C. loveridgei* Brown (Nyasa-land), the new species is distinct in many characters, but it fits this genus in formal diagnostic characters and is obviously similar in overall habitus. It is becoming clearer with each new find that the genera *Codiomyrmex*, *Weberistruma*, *Glamyromyrmex* and their relatives are interrelated. Although each species in this relict group is very distinct, the generic limits are at present not very satisfactory.

This capture is a remarkable one, regardless of eventual generic placement, because it represents the first short-mandibulate species of subtribe Strumigeniti found on the Australian continent.