

On a Small Collection of Ants (Hym., Formicidæ) from West Africa, associated with Coccidæ. By HORACE DONISTHORPE, F.Z.S., F.R.E.S., etc.

Family **Formicidæ.**

Subfamily *MYRMICINÆ.*

Crematogaster (Sphærocrema) boxi Donisthorpe, 1945, Entomologist, lxxviii. p. 10.

No. H.1361. Eight workers taken by Mr. H. E. Box with a *Pseudococcus* sp. in pods of *Sterculia tomentosa*. Gold Coast, N. Ashanti, 20 miles north of Wenchi, May 5, 1944.

Crematogaster (Sphærocrema) striatula Emery, 1892, Ann. Soc. Ent. France Bull. lxi. p. 53.

No. H.1367. With *Pseudococcus* sp. ?, on swollen shoots of infected Cacao. Near Abengourou, Ivory Coast, May 18, 1844. No. H.1350, with *Pseudococcus* ? *exitabilis* on unknown liane (*Clerodendron* sp. ?). Gold Coast, May 2, 1944. No. H.1380, on Cacao (pod). British Togo, Lekleki Dafo, Nov. 4, 1944. No. H.1381, on *Coffea excelsa* (cultivated, berry pedicels and leaf axils). British Togo, Lekleki, Dafo, Nov. 4, 1944. No. H.1375, on Cacao (pod). British Togo, Bame Pass (800 ft. alt.), Nov. 2, 1944. No. H.1405, on Cacao. Gold Coast, Nka-kaw, Nov. 23, 1944, taken by Mr. J. Paine. No. H.1411, on Cacao. Gold Coast, Bawdua, nr. Kade (Centr. Prov.), Dec. 2, 1944, K. O. Darko collection. No. H.1425, on *Strombosia pustulata* (*Olaaceæ*). Young sapling, in prim. forest, Gold Coast, Bunsu, 750 ft., Jan. 1, 1945. No. H.1435, on *Voacanga africana* (*Apocynaceæ*). First record on a lacticiferous plant: Gold Coast, Pimpinso, near Begoro, Jan. 9, 1945.

All the above were taken by Mr. H. E. Box, except where otherwise stated.

The data concerning the different plants are of importance in connection with the Coccidæ found on them; the ants having simply sought out the scale-insects on them.

Crematogaster (Sphærocrema) fulva, sp. n.

♂. Smooth and shining, light brownish yellow, club of antennæ slightly lighter, gaster piceous, especially towards

apex, teeth of mandibles and eyes black. Clothed with very short and sparse decumbent yellow hairs, more plentiful on gaster, and a few short erect yellow hairs.

Head subquadrate, cheeks and temples rounded, posterior angles round, posterior border excised in middle; *mandibles* triangular, longitudinally striate, *masticatory border* armed with four teeth, the two apical ones being longer and sharper; *clypeus* round and convex on disc, anterior border slightly rounded in middle and sinuate at sides, posterior border round with concave part of curve at base; *frontal area* indistinct; *frontal carinæ* moderate, sharp, slightly raised, slightly divergent posteriorly; *antennal foveæ* rounded externally, somewhat deep; *antennæ* 11-jointed, with a 3-jointed club, fairly long, *scape* narrow and curved at base, not reaching posterior border of head, *funiculus* with first joint longer than broad, longer and broader than the five following joints, which are transverse, sixth joint longer and slightly broader than the five preceding, second joint of club longer and broader than the first, last joint longer and broader than, but not quite as long as, the two preceding taken together; *eyes* round, oval, somewhat convex. *Thorax* longer than broad, broadest before middle, considerably contracted before epinotum, furnished with a neck; *pronotum* convex, anterior angles rounded but prominent, margined at sides; *pro-mesonotal suture* only visible at sides; *mesonotum* transverse if viewed from the side, convex above in continuation with the pronotum; *meso-epinotal suture* well marked; *sternites* of *meso-* and *metathorax* distinctly longitudinally striate; *epinotum* armed with two sharp rather strong teeth which project outwards and slightly downwards at apex, dorsal surface slightly convex, as long as declivity, which is concave; *petiole* broadest at base, narrowed to apex, flat on disc; *post-petiole* small, globular, convex, rounded above and at sides, narrower than petiole, without any furrow or impressions; *gaster* heart-shaped, fairly long, truncate at base, pointed at apex.

Long. 3.5 mm.

Type in B.M. (Nat. Hist.).

No. 1415. Described from 15 specimens taken by Mr. H. E. Box. Gold Coast, Ashanti, 11 miles east of Nkoranza (Ejura Rd.), 26. xii. 1944, on *Lophira alata* (*Ochnaceæ*) in parkland savannah.

Crematogaster (Acrocœlia) painei, sp. n.

♀. Smooth and shining, yellowish brown, club of antennæ dirty yellow; clothed with fine short decumbent yellow hairs.

Head subquadrate, about as long as broad, slightly narrowed anteriorly, rounded from eyes to posterior angles, which are round, posterior border slightly excised in middle; *mandibles* narrow, shining, armed with teeth, the apical one being the longest and sharpest; *clypeus* round and convex on disc, anterior border truncate, very slightly sinuate at sides; *frontal area* distinctly defined; *frontal furrow* extending to centre of head, enclosed in a shallow pit on disc; *cheeks* finely longitudinally striate; *frontal carinæ* narrow, rather wide apart, slightly divergent posteriorly; *antennæ* 11-jointed, with a 3-jointed club, *scapæ* narrow, reaching posterior border of head, *funiculus* with first joint longer and broader than the six following joints, the second, sixth and seventh joints are longer than broad, the three joints of the club increase in length and breadth, the last joint not longer than the two preceding ones taken together; *eyes* fairly large, oval, somewhat prominent, situated about the centre of sides of head. *Thorax* longer than broad, contracted before epinotum; *neck* concave; *pronotum* smooth and shining, convex, margined in front and at sides, anterior angles and sides rounded; *pro-mesonotal suture* very faintly indicated; *meso-epinotal suture* deep and well marked; *mesonotum* somewhat longitudinally striate on dorsal surface; *episternite of mesothorax* closely but finely punctured; *epinotum* armed with two short sharp spines, projecting outwards, and slightly downwards at apex, space between spines flat, smooth and shining, no marked angle between dorsal surface and declivity. *Petiole* narrowed in front and behind, broadest about middle, flat, smooth, with a narrow transverse furrow before apex; *post-petiole* convex, rounded, about as broad as petiole in middle, with a longitudinal suture dividing dorsal surface into two spheres; *gaster* short, heart-shaped, pointed at apex.

Long. 2.8 mm.

Type in B.M. (Nat. Hist.) Coll.

Described from three specimens (No. H.1431) taken by Mr. J. Paine on *Ceiba pentandra* (*Bombacaceæ*). Young tree, Gold Coast, Koransang, Jan. 6, 1945.

These ants are smaller than any species of *Acrocelia* in the B.M. Collection. It is always possible, however, that they belong to the first brood of a young *Crematogaster* queen.

Crematogaster (Atopogyne) africana Mayr, 1895, Ann. Naturh. Hofmus. Wien, x. p. 142.

No. H.1413, on *Cola ? togoensis* in fringing forest in the savannah-forest belt, N. Ashanti, 6 miles north of Wenchi. Taken by Mr. H. E. Box, Dec. 25, 1944.

Crematogaster (Atopogyne) cuviera Donisthorpe, 1945, Entomologist, lxxviii. p. 10.

No. H.1023, taken by Mr. H. E. Box from myrmecodomatia on leaf petioles of *Cuviera acutiflora*. Gold Coast, Asuansi, Sept. 8, 1943. No. H.1403. In hollow stems (domatia) of young *Canthium glabriflorum* (*Rubiaceæ*) inhabited by this ant. Gold Coast, Bunsu, 750 ft., Nov. 22, 1944. Taken by Mr. H. E. Box.

Crematogaster (Atopogyne) halli, sp. n.

♂. Blackish brown, mandibles, sides of clypeus, cheeks anteriorly, apex of frontal carinæ, tarsi and articulations of legs reddish, extreme apex of last joint of club yellow (in some specimens the whole of the club is inclined to be reddish), clothed with short sparse decumbent yellow hairs.

Head subquadrate, narrower in front than behind, posterior angles rounded, posterior border excised in middle; *mandibles* triangular, stout, strongly longitudinally striate and punctured, masticatory border armed with four rather blunt teeth, the apical one being the longest and sharpest (in some specimens the teeth are all blunter, possibly from use); *clypeus* large, convex, anterior border truncate, slightly sinuate at sides, strongly longitudinally striate, the central stria forming a carina extending from apex to base, posterior bluntly pointed; *frontal area* triangular, well marked, deep; *frontal furrow* fine, narrow, reaching about the middle of head; *frontal carinæ* narrow, flat, fairly long; *antennal foveæ* rather wide but not deep; the whole head is finely, but distinctly longitudinally striate; *antennæ* 11-jointed with a 3-jointed club, *scape* narrow and slightly curved at base

thickened to apex, just reaching posterior border of head, none of the joints of *funiculus* are transverse, the club is large and long, increasing in length and breadth, almost as long as rest of *funiculus*, the last joint is not quite as long as the two preceding taken together; *eyes* rather large, oval, somewhat flat, situated a little behind the centre of sides of head. *Thorax* thick-set, longer than broad, broadest a little behind anterior point of mesonotum, contracted before epinotum, the whole thorax is longitudinally striate; *pronotum* large, convex, prominent, disc submarginate, sides rounded and finely margined, neck flat, anterior angles rather prominent, the interstices of striæ on disc are also finely longitudinally striate; *mesonotum* raised, somewhat flat, slightly longer than broad, pointed anteriorly, the point raised and continued in a carina reaching beyond middle of mesonotum, sides rounded, base truncate, declivous, and transversely striate, the longitudinal striæ on disc are closer than those of the pronotum; *meso-epinotal suture* deep and rather wide; *epinotum* armed with two strong sharp spines, rather thick at base, and projecting outwards, *dorsal surface* shorter than declivity, with coarse longitudinal striæ, *declivity* concave, almost smooth in middle, transversely striate at sides. *Petiole* broader in front than behind, narrowed to apex, flat anteriorly, shining and very finely punctured; *post-petiole* globular, sides rounded, convex, broader than long, very finely punctured and with a very faint (hardly visible) impression* at apex; *gaster* heart-shaped, broad at base, pointed at apex, first segment very finely punctured and transversely striate, second segment more finely transversely striate.

Long. 3.8–4.8 mm.

Type in B.M. (Nat. Hist.) Coll.

This species is described in honour of Dr. W. J. Hall, who is working out the different species of Coccidæ (*Pseudococcus*, etc.) with which all the ants in this paper are associated.

* Emery's character "Postpétiole sculement impressionné en arriere" for the subgenus *Atopogyne* Forel, in his table of the subgenera of *Crematogaster*, is most unsatisfactory. In our specimens of *C. (Atopogyne) depressa* Latr., I am unable to see it at all. *Crematogaster halli* is a true *Atopogyne*; the pro-mesonotal suture is impressed, the mesonotum is carinate in front, and the foundation of the sculpture is densely striate.

Described from 24 workers (H.1426 A and H.1426 B) taken by Mr. H. E. Box in hollow stems (domatia) of mature *Canthium glabriflorum* inhabited by these ants.

Gold Coast, Bunsu, Jan. 1, 1945.

This distinct species comes in the *C. (A.) depressa* Latr. group, to which *C. (A.) mottazi* Santschi, from the Ivory Coast, also belongs.

Crematogaster (Atopogyne) togoensis, sp. n.

♀. Black, somewhat shining, clothed with short decumbent yellow hairs and some outstanding longer yellow hairs; club of antennæ and tarsi dirty yellow; mandibles reddish at apex.

Head a little longer than broad, broadest before posterior angles, which are round, posterior border excised in middle; *mandibles* triangular, striate and punctate, masticatory border armed with four rather strong teeth, the apical one longest and sharpest; *clypeus* convex, anterior border rounded, slightly sinuate at sides, longitudinally striate, posterior border rounded; *frontal area* narrow, triangular, well defined, but shallow, longitudinally striate; *frontal furrow* fine, continued beyond centre of head, spaces on each side very finely longitudinally striate, rest of head slightly more strongly striate and faintly and fairly closely punctured; *frontal carinæ* narrow, flat, divergent posteriorly; *antennal foveæ* fairly large and deep; *antennæ* 11-jointed, *club* 3-jointed, *scape* not reaching posterior border of head, not much thickened to apex, *funiculus* with first joint broader, but shorter, than second, club increasing in length and breadth, last joint about as long as the two preceding taken together. *Thorax* rather short, longer than broad, contracted at meso-epinotal furrow, sides rounded anteriorly to furrow; *pronotum* finely longitudinally striate and punctate, the punctures on the sides are larger than on the disc and wider apart, disc (with mesonotum) submarginate, humeral angles rather prominent; *mesonotum* rather flat, very finely longitudinally striate and punctured, the striæ on sides being stronger, a strong carina extends from the pointed anterior margin to the declivity at base, posterior border declivous and transversely striate; *meso-epinotal furrow* wide and deep; *epinotum* armed with two rather stout short sharp spines,

projecting outwards, dorsal surface not as long as declivity, longitudinally striate, declivity somewhat concave, smooth and shining, transversely striate at sides; *post-petiole* broader than long, sides rounded, rather flat on disc, with a slight longitudinal impression posteriorly; *gaster* heart-shaped, first segment very finely and closely punctured, which gives a somewhat dull appearance, with larger (though quite small) punctures regularly scattered over it, second segment finely transversely striate and somewhat shining.

Long. 3-4 mm.

Type in B.M. (Nat. Hist.) Coll.

No. H.1385. Described from thirteen specimens taken by Mr. H. E. Box on *Cacao* (pod). French Togo, Mayondi (two miles east of Honuta, British Togo), Nov. 5, 1944.

Subfamily FORMICINÆ.

Camponotus (Myrmopiromis) flavosetosus, sp. n.

♂. Black, mandibles and legs brown, articulations of the legs, tarsi and funiculi lighter. Head and thorax dull, *gaster* shining, clothed with very sparse yellowish pubescence and fairly long outstanding pointed golden-yellow hairs.

Head triangular, narrowed to apex, slightly rounded to posterior angles, which are round, considerably broader behind eyes than anteriorly, posterior border almost straight, the sculpture consists of very fine, close, somewhat reticulate puncturation; *mandibles* strong, triangular, with larger and smaller scattered punctures, masticatory border armed with five or six strong teeth, the apical one being long and sharp; *clypeus* large, convex, triangular, broadly but distinctly carinate, anterior border widely excised in middle, rather deeply sinuate before side-pieces, furnished with a row of rather uneven yellow bristles or hairs, the centre one being the longest; *frontal area* indistinct; *frontal furrow* fine and narrow, extending beyond the centre of the flat surface between the frontal carinæ; *frontal carinæ* long, sharp, raised, sinuate in front and behind, flat surface between, broadest behind middle; *antennæ* 12-jointed, *scape* narrow, slightly curved, broadest before apex, reaching a little beyond posterior border of head, *funiculus* with all

the joints longer than broad and increasing in length and slightly in breadth to apex, first joint shorter than second, last joint not as long as the two preceding taken together; *eyes* fairly large, oval, not very convex, situated above and behind centre of sides of head. *Thorax* longer than broad, narrowed to base, broadest a little behind centre of pronotum, viewed from the side forming a regular arch, sculpture similar to that of head; *pronotum* rounded at sides, narrowed anteriorly, posterior border rounded, embracing mesonotum; *mesonotum* transverse, narrow and rather flat above; *meso-epinotal* suture not very distinct on disc and only partly so at sides; *epinotum* long, narrow, sloping to base, angle between dorsal surface and declivity not very distinct. *Petiole* furnished with a bluntly pointed node-like scale, anterior surface convex, posterior surface flat, sculpture similar to that of thorax; *gaster* oval, shining, very finely transversely striate, the outstanding yellow setæ are longer and more abundant than elsewhere. *Femora* compressed; *tibiæ* cylindrical.

Long. 7.5 mm.

♀. Colour and sculpture similar to that of the soldier; *head* longer and narrower in proportion and more parallel-sided, about as broad anteriorly as posteriorly; *carina* on *clypeus* more distinct; *scape* longer in proportion, reaching pro-mesonotal suture.

Long. 4.5–5 mm.

Type and ♀ in B.M. (Nat. Hist.) Coll.

Described from one soldier and three workers (No. H.1384) taken by Mr. H. E. Box on young *Cacao* (shoots). British Togo, near Flabo Falls, 1200 ft. alt., Nov. 11, 1944; and one worker (No. H.1404) taken by Mr. J. Paine on seedling *Cacao* on edge of swollen-shoot outbreak. Gold Coast, Kwahu, Nov. 25, 1944.

Ants of the subgenus *Myrmopiromis* occur in South and West Africa, Madagascar, the Mascarene and the Seychelle Islands. They are divided into three groups—the *fulvopilosus* group consisting of a few rather large ants with a thick pile of hairs on the gaster, mostly found in South Africa; the *niveosetosus* group, small or medium ants, chiefly occurring in Madagascar. They are usually furnished with outstanding setæ, or hairs, yellow, red, or white. To this group our species belongs. It comes

nearest to *niveosetosus* Mayr, but is abundantly distinct. That species possesses a longer and narrower head, and the setæ are blunter and snow- or milk-white, and are more abundant; and the *chrysurus* group, medium-sized ants, very few in number, with an impression in front of the epinotum. Widely distributed in Africa.