

RESEARCH BULLETIN No. 5.

ANTS OF THE NIGERIAN FOREST ZONE  
(HYMENOPTERA: FORMICIDAE) PART II)  
FORMICINAE, DOLICHODERINAE

An illustrated guide to worker caste

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SYNOPSIS

This is the second volume in a short series of illustrated guides to the worker caste of ants of the Nigerian forest zone. The sub-families of ants covered in this volume are the Formicinae and the Dolichoderinae.

## INTRODUCTION

This is the second part of an illustrated annotated guide to the worker caste of the ants of the Nigeria forest zone. Further information, references, a guide to nomenclature and a glossary of terms can be found in Part I of the guide.

The subfamilies dealt with in this part are the Formicinae and the Dolichoderinae.

### Subfamily FORMICINAE

#### Diagnostic features:

Pedice of a single segment, usually with a narrow connection to the gaster so that the petiole has a distinct posterior face. Eyes usually present clypeus developed so that the antennal insertions are some distance behind the anterior margin of the head. Frontal carinae may or may not cover antennal insertions. No sting, apex of gaster with a circular acidopore formed from the hypopygium, this structure often projecting as a nozzle and fringed with setae. Occasionally the orifice of the acidopore is hidden by a projection of the pygidium, in which case the pronotum, petiole or both armed with spines.

Genera recorded from West Africa but not represented in the CRIN collection are Cataglyphis Förster (confined to savannah and semi-desert), Prenolepis Mayr, Pseudolasius, Emery, Aphomomyrmex Emery, Acropyga Roger and Santschiella Forel.



Tribe CAMPONOTINI

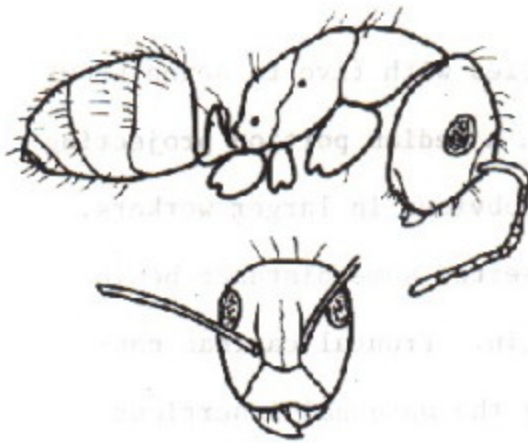
Genus Camponotus Mayr

Diagnostic features:

Polymorphic. Mandibles with five to seven stout teeth. Clypeus often with a median portion projecting as a truncated lobe, more obvious in larger workers. Antennae 12-segmented, inserted some distance behind the posterior clypeal margin. Frontal carinae converging anteriorly leaving the antennal insertions only partially or not at all covered. Eyes present, usually well developed, situated behind the midlength of the head. Promesonotal suture distinct, development of other sutures variable. Alitrunk unarmed. Petiole a node or scale, unarmed. Acidopore circular, clearly visible.

A very large, complex genus; taxonomically extremely confused.

The sizes given for each species are for the largest major worker (large headed) and the smallest minor worker in the CRIN collection. Intermediate sizes are also often found.

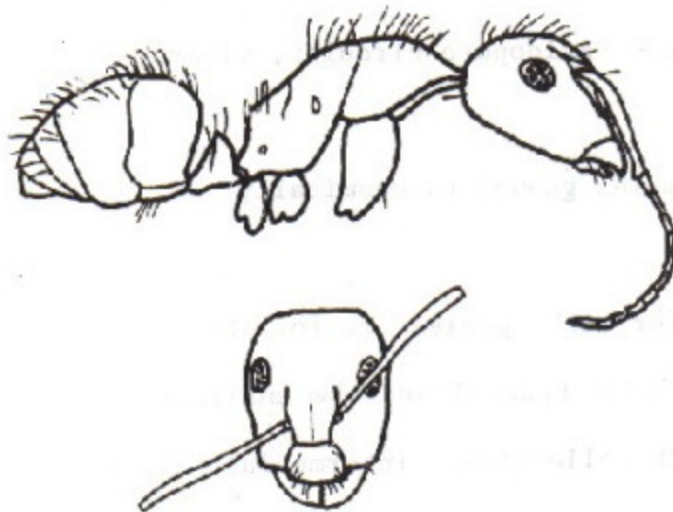


minor

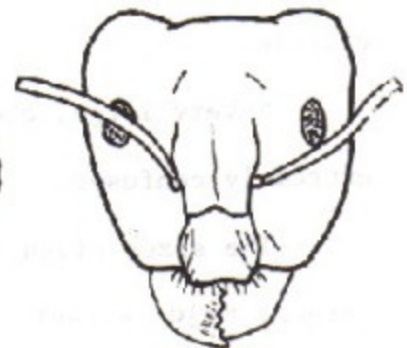


major

Camponotus acvapimensis × 15



minor



major

Camponotus brutus × 7.5

C. acvapimensis

Major worker TL 7.28 HL 2.18 HW 1.96 SL 1.49 PW 1.28

Minor worker TL 5.38 HL 1.40 HW 1.15 SL 1.49 PW 0.87

Colour black/very dark red-brown, lighter on extremities.

Appearance dull due to fine reticulate sculpturation on

head and alitrunk, gaster very finely transversely

striate. Declivity of propodeum smoothly rounded,

petiole a sharp scale. Coarse erect setae most abundant on gaster, fine pilosity very sparse.

By origin probably a savannah species, it nests in insolated ground. An avid tender of various Homoptera over which it often constructs roofs, or tents, of soil particles.

C. brutus

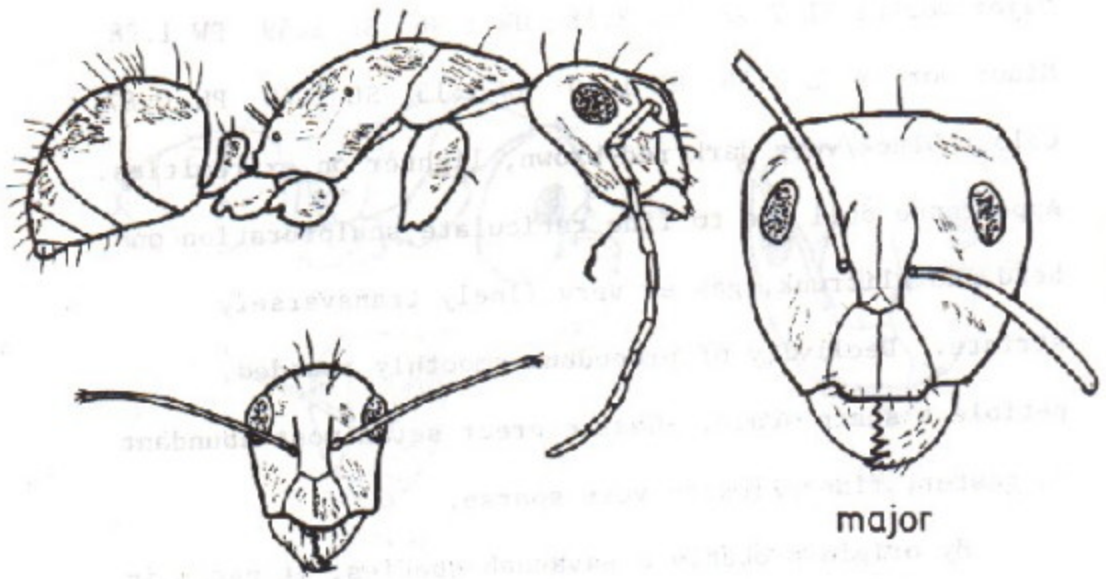
Major worker TL 15.38 HL 4.43 HW 4.75 SL 3.23 PW 2.72

Minor worker TL 11.0 HL 3.04 HW 2.41 SL 3.23 PW 1.96

Colour dark red-brown, extremities orange, shiny. Erect

setae coarse and relatively sparse. Declivity of propodeum obtusely angled. Petiole a sharp scale.

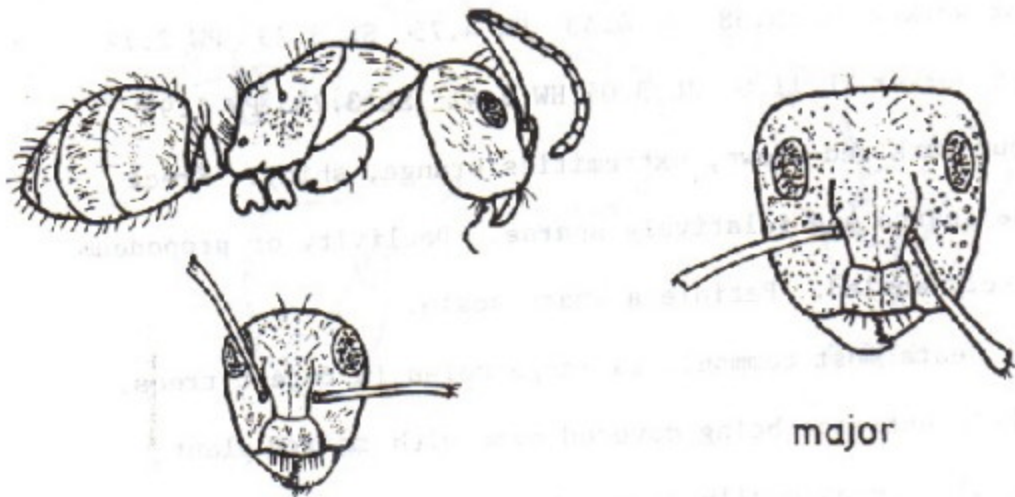
Nests most commonly in large holes in forest trees, the hole entrance being covered over with matted plant material. Occasionally seen foraging on cocoa.



minor

major

Camponotus flavomarginatus × 15



minor

major

Camponotus foraminosus dorsalis × 15

C. flavomarginatus

Major worker TL 9.00 HL 2.49 HW 2.49 SL 1.93 PW 1.52

Minor worker TL 5.76 HL 1.43 HW 1.12 SL 1.87 PW 1.03

Colour black, extremities dark red-brown, dull. Coarse erect setae sparse but covered all over with fairly dense pilosity of a pale yellow colour particularly on gaster. Declivity of propodeum smoothly curved. Petiole a rounded node. Fairly common especially on insolated ground, will tend aphids on cocoa but does not build tents.

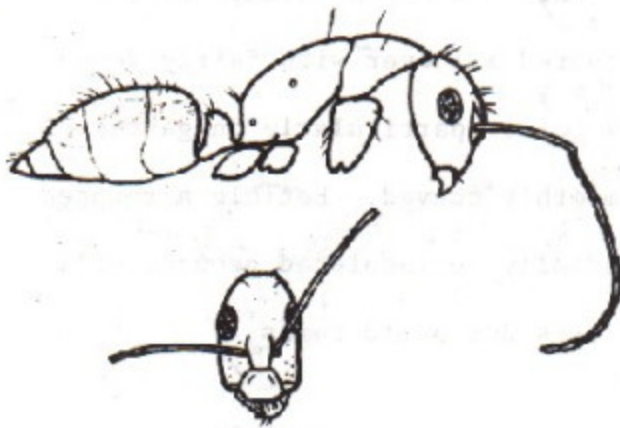
C. foraminosus dorsalis

Major worker TL 7.35 HL 2.02 HW 2.05 SL 1.56 PW 1.34

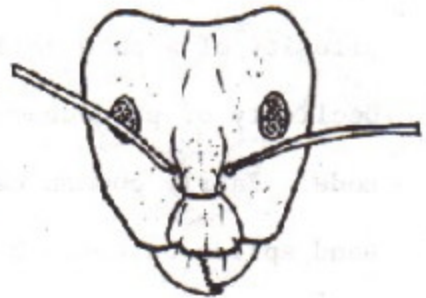
Minor worker TL 4.37 HL 1.28 HW 1.09 SL 1.28 PW 1.00

Colour black, extremities very dark red-brown, shiny.

Coarse erect white setae relatively abundant, covered all over with moderately dense silvery pilosity. Sculpturation of fine puncturation coarsest on head especially on major where almost foveolate in nature. Declivity of propodeum an obtuse near right angle. Petiole a sharp scale with line of coarse setae along transverse dorsal edge. Quite common on cocoa, often nesting in old dry pods on tree. Apparently wholly aphids.

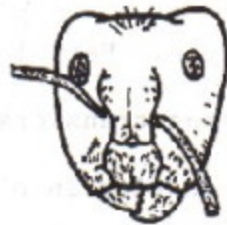


minor



major

Camponotus maculatus × 7.5



major

Camponotus micispa × 7.5

C. maculatus

Major worker TL 14.0 HL 3.99 HW 3.86 SL 3.29 PW 2.22

Minor worker TL 9.50 HL 2.24 HW 1.31 SL 3.11 PW 1.37

Colour orange to dark red-brown, darkest on gaster but characteristically lateral light patches on tergites 1 to 3, shiny. Erect coarse setae long but sparse, very sparse pilosity. Declivity of propodeum smoothly rounded. Petiole a rounded node in minor but sharper in major. Common ground ant often ascending cocoa trees to tend aphids but does not build tents.

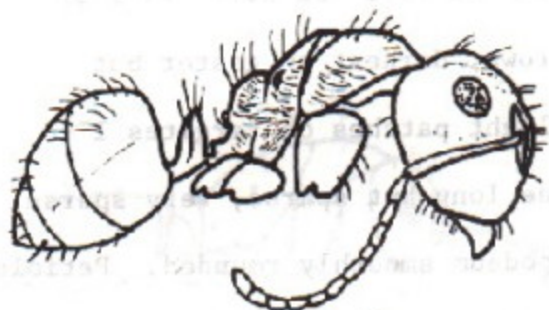
In addition to maculatus as described above there are two, if not more, very similar species in the CRIN collections, notably species A which is quite large but these are represented only by a few specimens in poor condition.

C. micispa

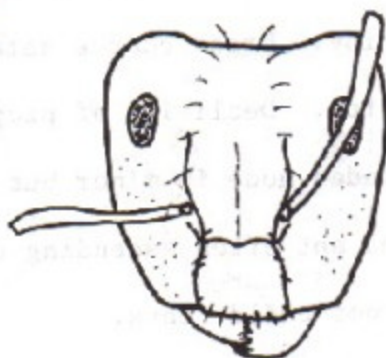
Major worker TL 9.38 HL 2.91 HW 2.79 SL 1.65 PW 1.71

no minor in collection.

Colour black, shiny. Coarse erect setae golden, long abundant except on head, pilosity sparse on head, moderately dense on dorsum of alitrunk, dense on gaster where gives a golden pubescence. Declivity of propodeum obtusely angled, metanotal groove incised. Petiole a thick scale with dorsal edge feebly notched in middle. A single specimen corresponding to Wheeler's (1922) description of this species was collected foraging on cocoa at Gbodo near Ilesha



minor



major

Camponotus vividus ×15



minor



major

Camponotus species T<sup>2</sup> ×15

C. vividus

Major worker TL 7.73 HL 2.49 HW 2.49 SL 1.77 PW 1.56

Minor worker TL 5.45 HL 1.56 HW 1.31 SL 1.56 PW 1.06

Colour black, shiny. Erect coarse setae abundant almost colourless, very sparse pilosity. Declivity of propodeum an obtuse near right angle, metanotal groove clearly incised, pro-mesonotal suture wide. Petiole a sharp scale with a line of erect setae on dorsal edge. Sculpturation of fine striations particularly evident on alitrunk. Nests in certain species of forest trees and often closely associated with Crematogaster africana. Forages on cocoa.

Camponotus species T<sup>2</sup>

Major worker TL 6.97 HL 1.65 HW 1.65 SL 1.01 PW 1.06

Minor worker TL 4.39 HL 1.09 HW 0.87 SL 1.21 PW 0.78

Colour black, red-brown extremities, shiny. Coarse erect setae, long, colourless, sparse, very sparse pilosity. Declivity of propodeum with obtuse angle near bottom, alitrunk arched to give hump back appearance. Petiole a low node near rectangular in lateral view. Sculpturation of fine striations, most marked on alitrunk. Moderately abundant on low bush and less frequently on cocoa, tending scale insects.



Phasmomyrmex aberrans × 7.5

Genus Phasmomyrmex Stitz

Diagnostic features:

Monomorphic. clypeus with median portion broadly and shallowly excised. Insertions of antennae, form of frontal carinae and eyes as in Camponotus. Anterodorsal pronotal angles projecting as short teeth or with the sides strongly marginate. Metanotal groove impressed, the propodeum truncated posteriorly, unarmed (but see P. aberrans below). Petiole a node extended into a short dorsolateral tooth on each side. Acidopore circular, not concealed by the pygidium. Arboreal, nesting and foraging in trees.

P. aberrans (Forel) <sup>Maor</sup>

Monomorphic but with considerable size range

TL 5.89 - 7.38 HL 1.43 - 1.87 HW 1.43 - 1.93

SL 1.37 - 1.80 PW 1.00 - 1.40

Colour black with orange extremities, shiny. Erect setae short absent from alitrunk and very sparse on head and gaster. Overall sculpturation of foveolate-reticulation, coarsest on head, size reducing to a fine puncturation on gaster. Alitrunk with sides clearly marginate, paired small upturned propodeal teeth, metanotal groove a wide shallow depression. Petiole a scale with acute central node and lateral processes with bifurcate tips.



Genus Polyrhachis F. Smith

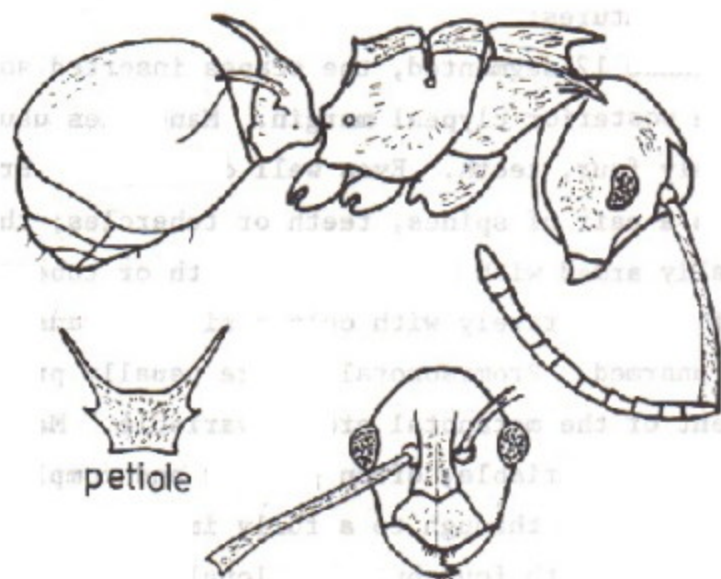
Revised by Bolton 1973

Diagnostic features:

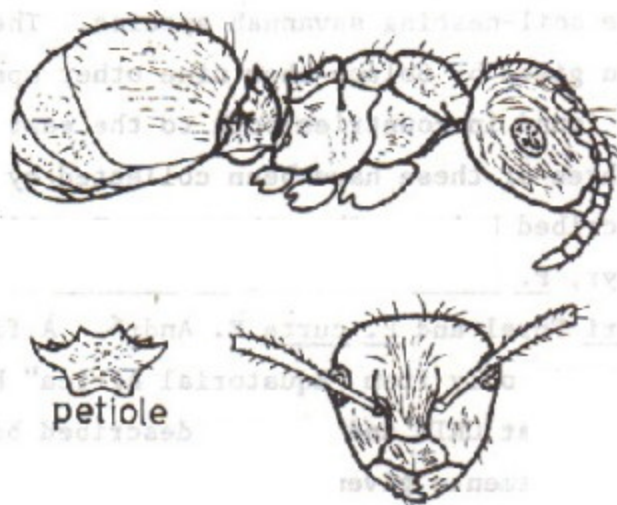
Antennae 12-segmented, the scapes inserted some distance behind the posterior clypeal margin. Mandibles usually with five, rarely four, teeth. Eyes well developed. Pronotum armed with a pair of spines, teeth or tubercles; the propodeum usually armed with two spines, teeth or tubercles, or a pair of ridges, rarely with only a single transverse ridge or unarmed. Promesonotal suture usually present, development of the metanotal groove variable. Margination of the alitrunk variable, often present and complete but showing all stages through to a fully immarginate condition. Petiole usually with four but occasionally two or six spines or teeth of variable configuration. Acidopore not borne upon a conical projection of the hypopygium, usually concealed by the pygidium when not in use.

Bolton (1973b) reports seven species from Nigeria but two of these, P.schistacea (Gerstaecker) and P.viscosa F. Smith are soil-nesting savannah species. The records of distribution given by Bolton show nine other species as having been found in countries both to the east and west of Nigeria. Three of these have been collected by me at CRIN and are described below. The others are P. alluaudi Emery, P. fissa Mayr, P. lauta Santschi, P. sulcata E. André, P. spittelerii Forel and P. curta E. André. A final species previously known only from "Equatorial Africa" has been collected by me at CRIN and is also described below.

The measurements given are those made by Bolton but all the CRIN specimens fit within the size range quoted for a particular species. All the CRIN species are black often with reddish-brown extremities.



Polyrhachis concava × 15



Polyrhachis decemdentata × 15

P. concava E. André

TL 6.8 - 7.6 HL 1.85 - 1.92 HW 1.29 - 1.37 SL 2.29 - 2.40  
PW 1.00 - 1.18

Anterior margin of clypeus arcuate and entire. The side view of the eye is unique in that the ventral margin is raised and extended giving a reniform, kidney shaped, outline to the eye. Dorsum of alitrunk transversely concave especially the propodeum. Alitrunk marginate throughout its length, interrupted only at the sutures, the marginations projecting an flange-like. Pronotum with a pair of spines, and propodeum with a pair of usually small upcurved teeth. Promesonotal suture distinct, metanotal groove impressed. Petiole as shown. Anterior face of first gastral segment vertical not concave in middle. Erect hairs only on anterior clypeal margin and apex of gaster. Pubescence yellowish to pale golden, densest on alitrunk.

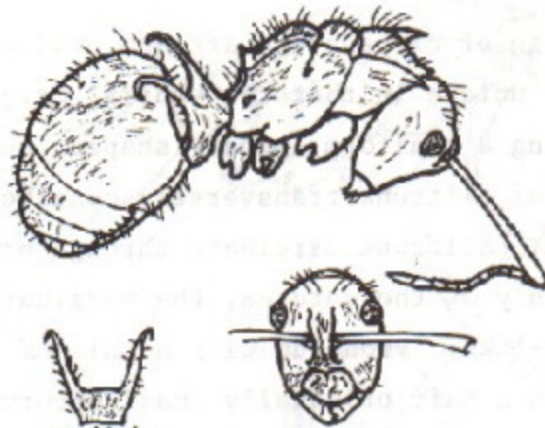
Collected at CRIN on shrub vegetation. First Nigerian record.

P. decemdentata E. André

TL 4.7 - 6.7 HL 1.18 - 1.59 HW 1.07 - 1.48 SL 1.15 - 1.55  
PW 0.85 - 1.33

Unique in having six spines or teeth on the petiole. All dorsal surfaces of the body and appendages with numerous erect hairs, white or yellowish in colour. Pubescence sparse, grey or off-white.

Alitrunk marginate throughout its length, interrupted only at the sutures. All dorsal surfaces transversely convex. Promesonotal suture distinct, metanotal groove impressed. Anterior face of first gastral segment concave. Arboreal nesting in rotten parts of standing trees. Occasionally found foraging on cocoa.



petiole

Polyrhachis laboriosa  $\times 7.5$



petiole

Polyrhachis militaris  $\times 7.5$

P. laboriosa F. Smith

TL 10.2 - 11.6 HL 2.15 - 2.25 HW 1.56 - 1.81 SL 2.85 - 3.34  
PW 1.19 - 1.36

Distinguished by petiole which has a single pair of long dorsal spines with strongly hooked apices.

Alitrunk marginate throughout its length interrupted by impressions at the sutures. Pronotum and propodeum weakly concave transversely. All dorsal surfaces with numerous erect hairs, varying in colour from grey to golden-yellow. Pubescence dense usually grey on the head and alitrunk, golden or bronzy on the gaster.

A fairly common arboreal species which constructs nests of vegetable fragments and small twigs bound together by silk and fungal hyphae and adherent to undersides of leaves or in the fork of small branches. Forages on cocoa.

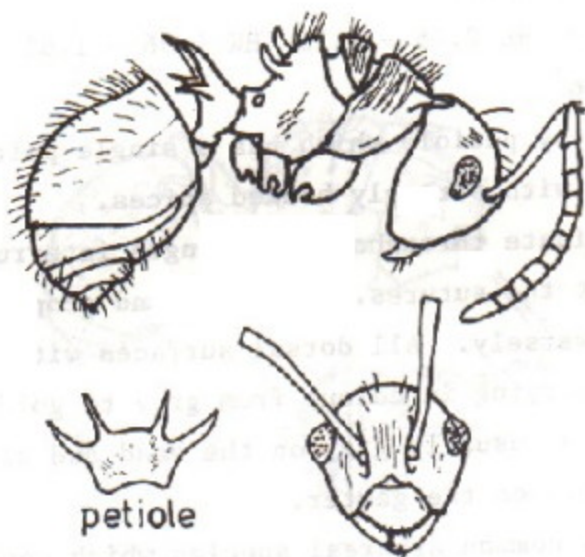
P. militaris (Fabricius)

TL 10.8 - 14.1 HL 2.59 - 3.41 HW 1.96 - 2.96  
SL 3.18 - 3.89 PW 1.74 - 2.34

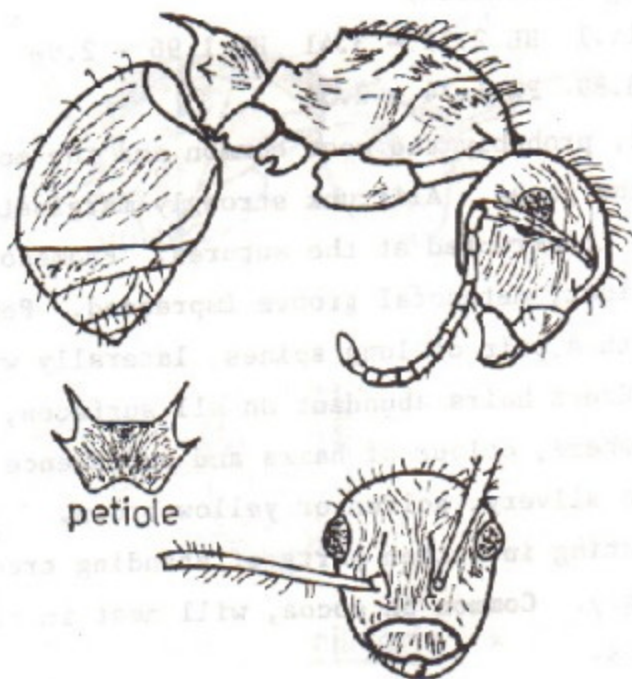
The largest, probably the most common and the most variable member of the genus. Alitrunk strongly marginate throughout its length, interrupted at the sutures. Promesonotal suture distinct, metanotal groove impressed. Petiole dorsally with a pair of long spines, laterally with a pair of teeth. Erect hairs abundant on all surfaces, pubescence dense everywhere, colour of hairs and pubescence variable from grey to silvery, golden or yellow-brown.

Aboreal, nesting in rotten parts of standing trees.

Forages singly. Common on cocoa, will nest in old dried pods on trees.



Polyrhachis monista ×15



Polyrhachis otleti × 15

P. monista Santschi

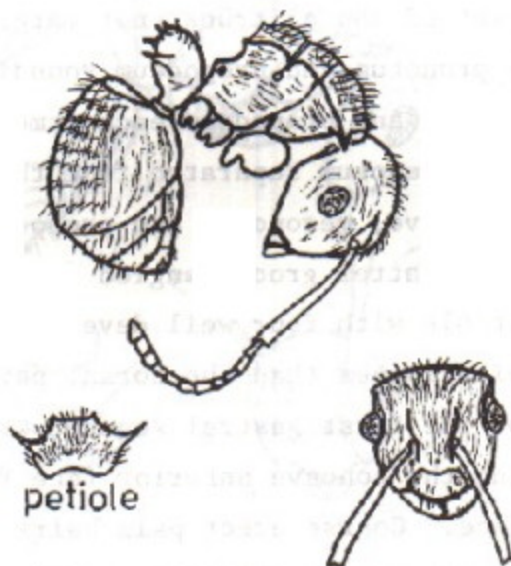
TL 5.5 - 6.4 HL 1.27 - 1.52 HW 1.22 - 1.41 SL 1.40 - 1.59  
PW 0.96 - 1.04

Unique development of the alitrunk, not marginate the dorsal surfaces of the pronotum and propodeum rounding evenly into the sides. Pronotum and propodeum each armed with a pair of thick spines. Pronotum separated from the mesonotum by a deep broad groove, mesonotum and propodeum similarly separated with the latter groove angled forwards to meet the former. Petiole with four well developed spines, the lateral pair being longer than the dorsal pair. Antero-dorsal border of the first gastral segment with a sharp margin separating the concave anterior face from the convex dorsal face. Coarse erect pale hairs on all dorsal surfaces, pubescence generally sparse or absent. Aboreal nests usually being a mixture of silk and vegetable particles often between a pair of leaves.

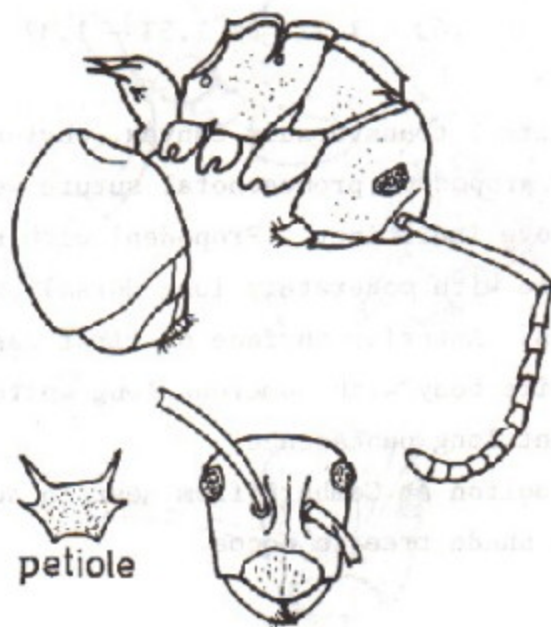
P. otleti Forel

TL 6.8 - 7.6 HL 1.63 - 1.71 HW 1.33 - 1.37 SL 1.88 - 2.00  
PW 1.13 - 1.23

Dorsum of alitrunk transversely convex, obvious margination restricted to propodeum, promesonotal suture weakly incised, metanotal groove indistinct. Propodeal with small flat teeth. Petiole with moderately long dorsal and short lateral spines. Anterior surface of first gastral segment concave. Entire body with numerous long white hairs and fairly abundant long pubescence. Collected by Bolton at Gambari from nest in deep narrow rot hole in a shade tree in cocoa.



Polyrhachis phidias ×15



Polyrhachis rufipalpis ×15

P. phidias Forel

TL 4.9 - 5.1 HL 1.18 - 1.26 HW 1.03 - 1.08 SL 1.18 - 1.26  
PW 1.08 - 1.13

Dorso - lateral corners of head almost rectangular in front view and sides of head in front of the eyes shallowly convex. Alitrunk marginate laterally throughout its length, margins broken only at the sutures. Sutures well developed, meta notalgroove impressed. Petiole with long acute lateral spines and a pair of short, triangular dorsal teeth. Anterior face of first gastral segment strongly concave. Erect hairs on all dorsal surfaces, absent from antennal scapes. Pubescence short and grey. Head and dorsum of alitrunk finely longitudinally striate-rugose.

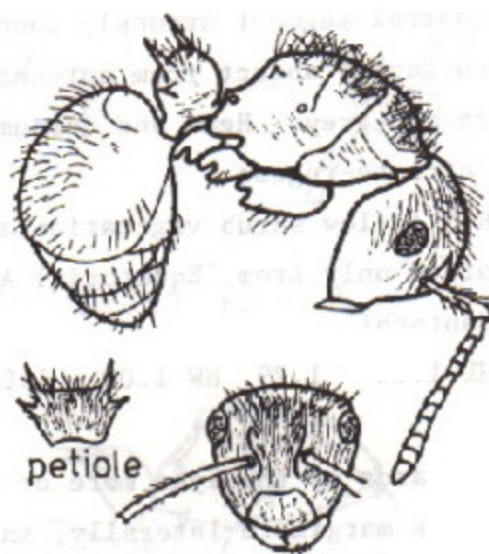
Collected at CRIN on low shrub vegetation around cocoa plot. Previously recorded only from 'Equatorial Africa'.

P. rufipalpis Santschi

TL 5.0 - 5.4 HL 1.26 - 1.29 HW 1.00 - 1.04 SL 1.33 - 1.48  
PW 0.96 - 1.00

Sides of head forwards of the eyes more or less straight and parallel. Alitrunk marginate laterally, interrupted only at sutures. Promesonotal suture incised, metanotal groove deeply impressed with propodeum rising vertically from the groove curving strongly and convexely into posterior declivity. Petiole with moderately long dorsal and shorter lateral spines. Body devoid of erect hairs except on anterior clypeal margin and the gastral apex.

Arboreal, collected at CRIN on low shrubs at edge of cocoa. First Nigerian record.



Polyrhachis weissi ×15

P. weissi Santschi

TL 5.7 - 6.1 HL 1.40 - 1.48 HW 1.29 - 1.40

SL 1.66 - 1.74 PW 1.18 - 1.26

Alitrunk not marginate, the dorsum convex. Promesonotal suture faint but distinct, metanotal grooved marked only by a line. Pronotum very broad more than twice the width of the propodeum measured across the teeth. Pronotum with short acute spines, propodeum with small teeth.

Petiole with moderately long dorsal and shorter lateral spines. Anterior face of first gastral segment shallowly concave. Head and body with numerous erect white to grey hairs. Pubescence generally sparse, greyish. Head and dorsum finely longitudinally striate - rugose. Antennal funiculi with apical five or six segments light brown.

Aboreal species constructing nests of silk and vegetable particles under or between leaves. Collected on cocoa at CRIN and Ibule. First Nigerian records.



Paratrechina species 1 x31

Tribe LASIINI

Genus Paratrechina Motschulsky

Diagnostic features

Mandibles narrow, with five or six teeth, weakly or not at all overhung by the clypeus. Anterior clypeal margin entire or weakly emarginate medially. Antennae 12-segmented inserted close to the posterior margin of the clypeus. Eyes well developed set at or in front of the mid length of the head. Ocelli absent. Propodeum unarmed, petiole a reduced scale inclined forwards and often overhung by the first gastral segment, always unarmed above. Acidopore borne on a conical projection of the hypopygium, surrounded by a fringe of hairs. Dorsal surface of head, alitrunk and gaster with distinctly paired coarse setae.

The genus would appear to be poorly known as all of the species in the CRIN collection are identified by code numbers.

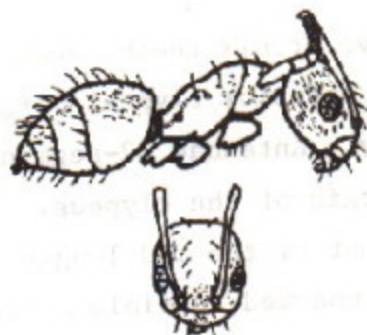
Paratrechina species 1

TL 1.99 HL 0.57 HW 0.49 SL 0.65 PW 0.34

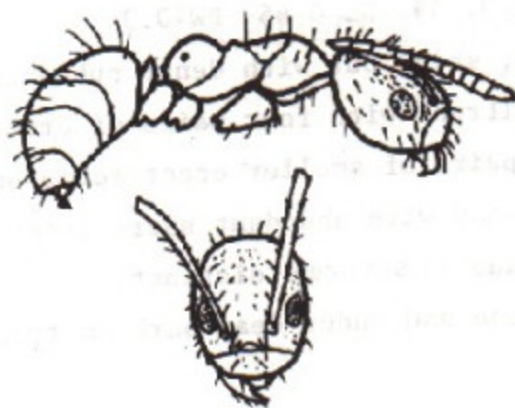
Overall colour brown, shiny but with dense pubescence on gaster and head. Alitrunk with four pairs of erect setae in line on dorsum, two pairs of smaller erect setae on pronotum outside main line. Head with abundant short erect setae.

Promesonotal and metanotal sutures distinct.

Found foraging on cocoa and under dead bark on tree.



Paratrechina species 2    × 31



Paratrechina species 3    × 31

Paratrechina species 2

TL 1.56 HL 0.47 HW 0.39 SL 0.54 PW 0.28

Overall colour yellow-brown darker on gaster. Dense pubescence with blue-green iridescence when obliquely illuminated. Four pairs erect setae in line on dorsum of alitrunk and no others, relatively few erect setae on head and gaster. Eyes slightly breaking outline of head in full face view. Promesonotal suture distinct but metanotal suture faint.

Found fairly commonly on cocoa foraging, nests seen in debris in crevice of mature cocoa, in dead bark of cocoa tree and in an old Macromischoides aculeatus nest. Will construct tents over aphids.

Paratrechina species 3

TL 2.05 HL 0.57 HW 0.49 SL 0.65 PW 0.37

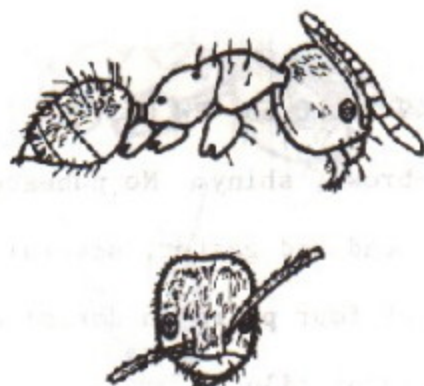
Overall colour chestnut-brown, shiny. No pubescence but erect setae abundant on head and gaster, several small setae outside main line of four pairs on dorsal alitrunk. Propodeum hemispherical in profile.

Promesonatal and metanotal sutures distinct, mesothoracic spiracle on small prominence.

Can be relatively common on cocoa, where it is an avid tender of aphids readily constructing tents. Nests in soil including collections of soil in tree crevices.



Paratrechina species T<sup>1</sup> ×31



Paratrechina species T<sup>2</sup> ×31

Paratrechina species T<sup>1</sup>

TL 1.32 HL 0.39 HW 0.31 SL 0.36 PW 0.22

Overall colour yellow-orange, shiny. Very fine, dense pubescence on head, gaster and alitrunk. Erect setae sparse especially on head, alitrunk with single main line of four pairs of setae. Promesonotal and metanotal sutures distinct. In profile alitrunk more or less smoothly curved, flatter medially. Occasionally found on cocoa, will build tents over aphids, nest seen at base of cocoa tree in soil.

Paratrechina species T<sup>2</sup>

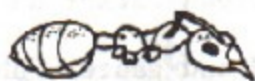
TL 1.74 HL 0.47 HW 0.45 SL 0.54 PW 0.28

Overall colour yellow-brown darker on gaster, shiny. Dense pubescence on head and gaster, abundant erect setae. Four pairs of long erect setae in main line on dorsum of alitrunk two pairs smaller setae outside main line on pronotum. Promesonotal suture distinct but not metanotal suture.

Observed foraging on cocoa and found nesting in dead wood on the ground.



major



minor

Oecophylla longinoda x7.5

Tribe OECOPHYLLINI

Genus Oecophylla F. Smith

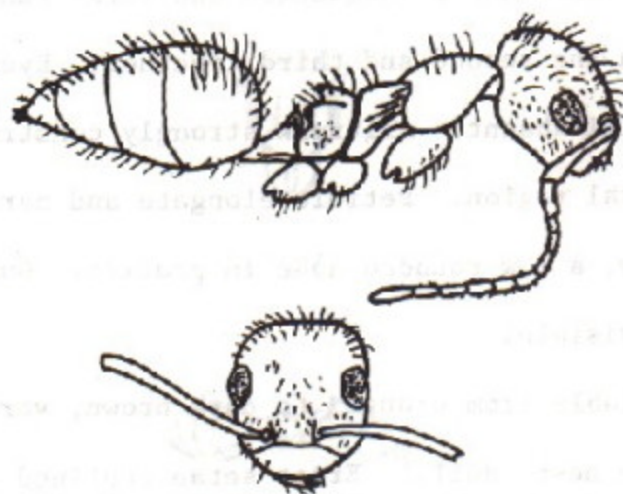
A single West African species O. longinoda (Latreille)

Dimorphic. Mandibles elongate, triangular, apical teeth long, acute crossing over at rest. Clypeus large, convex, its anterior margin overhanging the basal borders of the mandibles. Antennae 12-segmented the first funicular segment longer than the second and third together. Eyes well developed, ocelli absent. Alitrunk strongly constricted in the mesonotal region. Petiole elongate and narrow in dorsal view, a low rounded node in profile. Gaster with acidopore visible.

Colour variable from orange to dark brown, variations often within same nest, dull. Erect setae confined to gaster, fine pubescence all over. Arboreal ants, making nests by binding leaves together with larval silk. Major workers aggressive carnivores and scavengers, characteristic alarm behaviour and raising of gaster over alitrunk when disturbed. Minors rarely seen away from the nest. Abundant on cocoa and soft-leaved trees, tend large coccids over which silk tents may be built.

Major worker TL 8.04 HL 1.71 HW 1.62 SL 2.49 PW 0.93

Minor worker TL 4.56 HL 1.09 HW 1.06 SL 0.96 PW 0.59



Acantholepis capensis × 31

Tribe PLAGIOLEPIDINI

Genus Acantholepis Mayr

Diagnostic features

Mandibles with apical margin oblique, dentate, overhung by the clypeus. Antennae 11-segmented. Eyes well developed, ocelli present but may be reduced. Alitrunk constricted in the mesonotal region, the propodeum swollen and bidentate or bituberculate. Petiole a scale with the dorsal margin bispinose, bidentate or emarginate. Acidopore borne on a conical projection of the hypopygium, surrounded by a fringe of hairs.

A. capensis

Size variable TL 2.68 - 2.49 HW 0.65 HW 0.59 SL 0.76  
PW 0.42

Colour black, extremities red-brown especially base of the antennal scape, shiny. Erect setae relatively abundant colourless. No sculpturation other than marked long rugae on mesonotum. Propodeal prominences blunt. Petiole with a pair of spines of variable length.

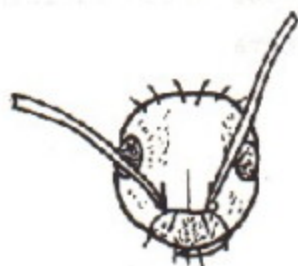
From Wheeler (1922) it seems a large number of subspecies and varieties of A. capensis have been described. The specimens I have drawn and described are members of the most commonly seen form on CRIN where it is one of the most abundant of all the ant species. Nests are usually made in dead wood either on standing trees or on the ground. Avid tenders of aphids and coccids often building tents of soil material over these Homoptera.



Acantholepis spinosior × 31



Acantholepis species Bolton coll. × 31



A. spinosior

TL 2.43 HL 0.65 HW 0.59 SL 0.76 PW 0.40

Colour black or dark red-brown, extremities lighter.

Appearance dull because of overall sculpturation of fine spiculation. Erect coarse dark brown setae are moderately abundant on the body but sparse on the head. Propodeal prominences spinose. Petiole spines well developed and curving backwards.

Occasionally seen foraging on cocoa, will tend aphids.

Acantholepis species collected by Bolton

TL 1.90 HL 0.47 HW 0.42 SL 0.50 PW 0.26

Colour dark red-brown, yellow tarsi and antennal scapes.

Shiny, unsculptured. Few erect setae, sparse pilosity.

Propodeal prominences near round tubercles. Petiole a sharp scale with slightly concave dorsal margin.

Acantholepis species T<sup>1</sup>

Size variable TL 3.08 - 2.86 HL 0.67 HW 0.61 SL 0.92  
PW 0.44

Colour black or dark red-brown with yellow tarsi. Erect setae stout, dark, moderately abundant on body and on head. Propodeal prominences dentate but not spinose. Petiole spines moderately developed, straight. Sculpturation of fine striations on pronotum, rugae on mesonotum and propodeum.

This form seems to be similar to the capensis variety validiscula as described by Wheeler (1922). Occasionally seen on cocoa, probably nesting in the soil and will build tents of vegetable matter around Pseudococcids.



Acantholepis species  $T^2$  &  $T^3$  minor  $\times 31$



Acantholepis species  $T^3$  major  $\times 31$

Acantholepis species T<sup>2</sup> and species T<sup>3</sup>

Measurements of T<sup>2</sup>; TL 2.61 HL 0.67 HW 0.62 SL 0.76 PW 0.44

T<sup>3</sup> is dimorphic.

Minor TL 2.36 HL 0.59 HW 0.54 SL 0.67 PW 0.39

Major size variable TL 3.21 - 3.60 HL 0.90 - 0.99

HW 0.93 - 1.14 SL 0.76 - 0.90 PW 0.53 - 0.54

Colour black, extremities lighter, yellow brown on tarsi, Shiny. Species T<sup>2</sup> and T<sup>3</sup> minor with abundant long, white erect setae. Petiole a thick scale almost emarginate.

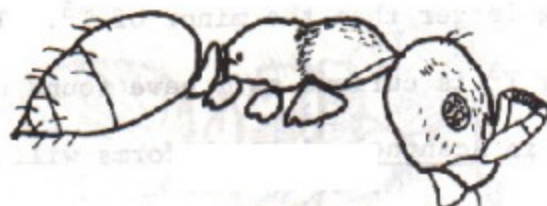
Propodeal prominences moderately acute. Species T<sup>3</sup> major more massive with large head greater in breadth than in length. Very abundant long, white erect setae and long white pilosity on head and alitrunk. Petiole with dorsal margin straight to slightly concave.

I have separated these two forms into species T<sup>2</sup> and T<sup>3</sup>

because T<sup>2</sup> is more commonly seen especially on cocoa, the single morph being larger than the minor of T<sup>3</sup>. The dimorphism exhibited by T<sup>3</sup> is curious as I have found no mention of the phenomenon in Acantholepis. Both forms will tend aphids and coccids.



Plagiolepis brunni × 62.5



Plagiolepis species T<sup>1</sup> × 62.5

Genus Plagiolepis Mayr

Diagnostic features:

Mandibles with five teeth, clypeus large and projecting over basal borders of mandibles. Antennae 11-segmented. Eyes well developed situated in middle of sides of head. Ocelli usually absent. Alitrunk short, weakly constricted between pronotum and propodeum.

Propodeum unarmed, petiole a reduced scale, inclined forwards and may be overhung by the first gastral segment, never armed or emarginate. Acidopore borne on a conical projection, surrounded by a fringe of hairs. Monomorphic or polymorphic.

P. brunni

TL 1.32 HL 0.36 HW 0.31 SL 0.30 PW 0.19

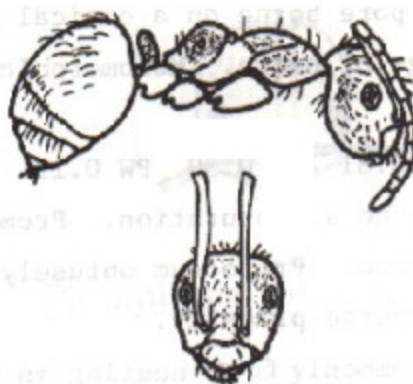
Colour yellow, shiny, no sculpturation. Promesonotal and metanotal sutures marked. Propodeum obtusely curved angle. Few erect setae and sparse pilosity.

An abundant species commonly found nesting in dead twigs on cocoa and other trees and bushes. Will tend aphids and occasionally build tents.

Plagiolepis species T<sup>1</sup>

TL 1.15 HL 0.31 HW 0.30 SL 0.23 PW 0.17

Head and alitrunk yellow, gaster dark yellow-brown, very shiny. Unsculptured, promesonotal suture faint, no metanotal suture, propodeum convex in profile. Erect setae moderately abundant on gaster, moderate pilosity on head and alitrunk. Collected on cocoa at CRIN and at Apoje.



Plagiolepis species T<sup>2</sup> × 15

Plagiolepis species T<sup>2</sup>

TL 3.73 HL 0.98 HW 0.90 SL 1.40 PW 0.65

Colour golden yellow, gaster darker and shiny, head and alitrunk dull because of sculpturation of very fine reticulation. Erect setae, coarse, brown, abundant on head and gaster. Promesonotal and metanotal sutures marked, metathoracic spiracle raised, propodeum domed in profile. Petiole an erect scale not overhung by gaster. Antennal scapes long, funiculi filiform.

This species would appear to fall into the subgenus Anoplolepis as described by Wheeler (1922). Collected from cocoa at Akure, Ondo State.



Subfamily DOLICHODERINAE

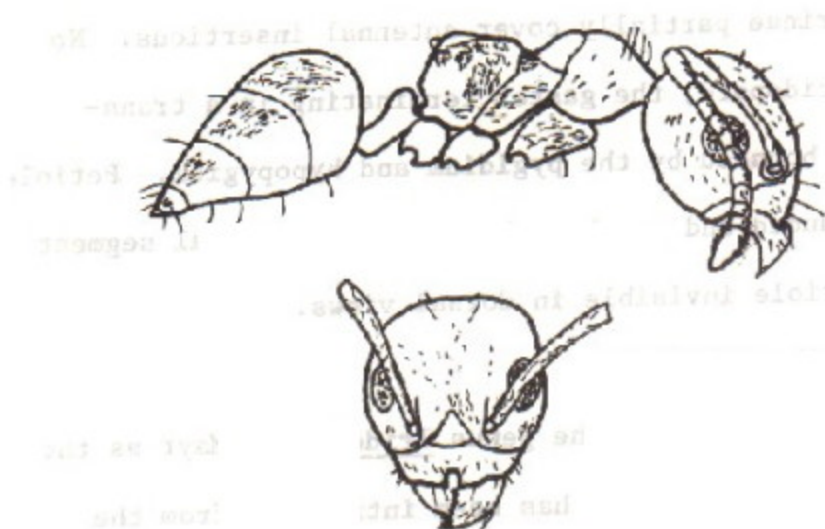
Diagnostic features:

Pedicel of a single segment with a narrow connection to the gaster so that the petiole has a distinct posterior face. Eyes present. Clypeus developed so that antennal insertions are some distance behind the anterior margin of the head.

Frontal carinae partially cover antennal insertions. No sting or acidopore, the gaster terminating in a transverse slit bounded by the pygidium and hypopygium. Petiole usually reduced and overhung by the first gastral segment so that petiole invisible in dorsal views.

A single tribe TAPINOMINI

Bolton (1973a) includes the genus Iridomyrmex Mayr as the species I. humilis (Mayr) has been introduced from the neo-tropical region to southern Africa although it is not yet known in West Africa.



Engramma denticulatum × 31

Genus Engramma Forel

Diagnostic features:

Mandibles with large apical and subapical teeth followed by a series of denticulae. Anterior median border of clypeus deeply and strongly emarginate. Eyes well developed set about midlength of head and on the dorsal surface. Antennae 12-segmented. Promesonotal and metanotal sutures present on dorsum of alitrunk. Gaster with five segments visible in dorsal view anal and associated orifices apical.

Palp formula 4, 3, palpi short.

E. denticulatum

TL 3.20 HL 0.82 HW 0.76 SL 0.68 PW 0.51

Colour deep red-brown to black, extremities lighter shiny. Erect setae sparse on head and gaster, few only on pronotum of alitrunk. Alitrunk distinctly waisted in metanotal region. Propodeum with obtuse posterodorsal angle and two blunt lateral denticles. Petiole node thickened anteriorly. Abundant pubescence especially mesonotum and propodeum. Collected near ground level on vegetation at edge of CRIN plantation road.

Genus Tapinoma Förster

Diagnostic features:

Mandibles with large apical two or three teeth, followed by a row of denticles. Clypeus with or without anterior border emarginate. Antennae 12-segmented. Eyes placed at or in front of midlength of head on the dorsal surface. Propodeum unarmed or rarely with a pair of blunt tubercles. Petiole reduced or vestigial, overhung by first gastral segment and not visible in dorsal view. Gaster in dorsal view with four visible tergites, anal and associated orifices ventral.

Palp formula 6, 4, palpi long.



Tapinoma melanocephalum ×62.5



Tapinoma species T<sup>1</sup> ×62.5

T. melanocephalum (F)

TL 1.49 - 1.71 HL 0.45 HW 0.37 SL 0.42 PW 0.23

Colour of head and alitrunk dark yellow-brown, gaster yellow, extremities pale yellow. Dense fine pubescence all over, erect setae on clypeus and gastral apex only.

Alitrunk in profile near smoothly convex, slight metanotal depression in convexity, propodeal declivity straight.

A domestic species. common in houses.

Tapinoma species T<sup>1</sup>

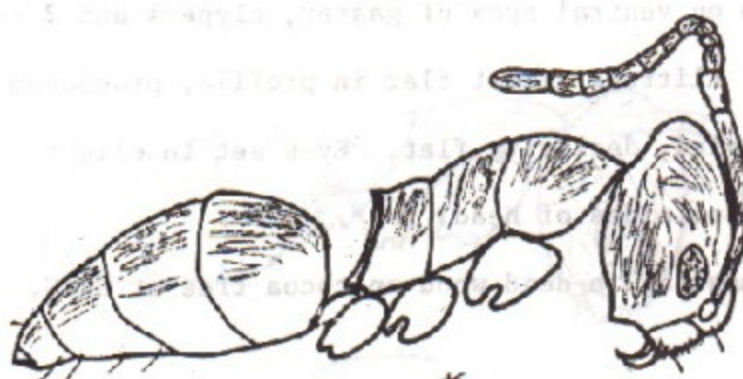
TL 1.87 HL 0.50 HW 0.40 SL 0.40 PW 0.28

Colour all over yellow brown. Dense fine pubescence, erect setae on ventral apex of gaster, clypeus and 2 on fore coxa. Alitrunk almost flat in profile, propodeum obtusely angled, declivity flat. Eyes set in slight depressions on sides of head.

Collected nesting in dead wood on cocoa tree at CRIN.



Tapinoma species T<sup>2</sup> ×62.5



Technomyrmex deterquens × 62.5

Tapinoma species T<sup>2</sup>

TL 1.59 HL 0.47 HW 0.40 SL 0.31 PW 0.26

Colour all over brown, shiny. Dense fine pubescence on all surfaces except sides of head where sparse. Erect setae only on clypeus. Dorsum of alitrunk nearly smoothly convex in profile with slight depression at metanotal suture. Antennal scapes noticeably short relative to head length.

Collected nesting under bark of cocoa tree at Ilesha and under bark of Indian almond at CRIN

Genus Technomyrmex Mayr

Diagnostic features

As Tapinoma but with five gastral segments visible in dorsal view, the anal and associated orifices apical.

T. detorquens (T. albipes)

TL 1.87 HL 0.51 HW 0.39 SL 0.47 PW 0.25

Colour medium dark yellow-brown, shiny. Dense fine flat pubescence. Erect setae at gastral apex and on clypeus and mandibles. Propodeum with acute apex. Eyes set well forward of midline of sides of head.

Fairly abundant on cocoa, tends aphids, nests in dead wood and in soil.



Technomyrmex species IK  $\times 31$



Technomyrmex species T<sup>1</sup>  $\times 15$

Technomyrmex species IK

TL 2.05 HL 0.59 HW 0.50 SL 0.51 PW 0.34

Colour of head, alitrunk and appendages orange brown, gaster black, shiny. Dense pubescence all over, erect setae sparse, most abundant on gaster. Propodeum humped with rounded acute apex.

Occasionally seen on cocoa, nests under bark and in debris accumulations in tree forks. Found at CRIN and Apoje.

Technomyrmex species T<sup>1</sup>

TL 3.73 HL 1.01 HW 0.92 SL 1.03 PW 0.61

Colour dark red-brown to black, extremitities lighter coxae of mid- and hindlegs white, shiny. Erect setae sparse confined to clypeus and gaster but not on first gastral segment, fine pubescence all over. Propodeum convexly humped in profile. Sculpturation particularly on alitrunk of very fine reticulation. Anterior clypeal border deeply emarginate.

Occasionally seen tending aphids on cocoa, also recorded constructing a soil tent over mealybugs. Sent at CRIN and Oluruntedo near Ondo.



Technomyrmex species T<sup>2</sup> × 31



Technomyrmex species T<sup>3</sup> × 31

Technomyrmex species T<sup>2</sup>

TL 2.18 HL 0.54 HW 0.47 SL 0.51 PW 0.33

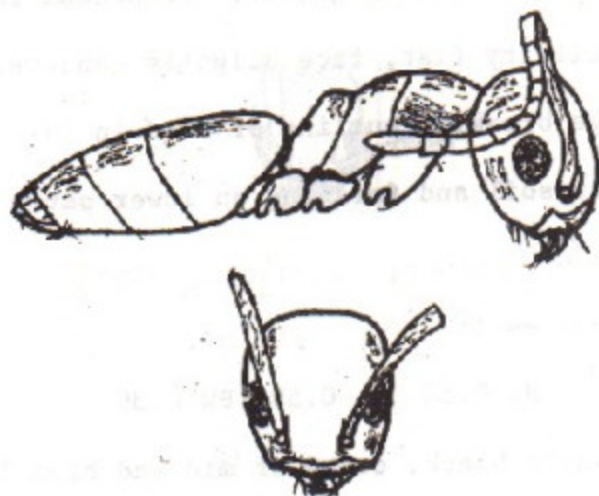
Colour light yellow-brown, gaster darker, shiny.

Erect setae on ventral side of gaster apex, on clypeus and two on fore coxa. Moderately dense fine pubescence on head and alitrunk, coarse on gaster. Propodeum rectangular in profile, declivity flat, face slightly concave. Eyes relatively large breaking outline of head in full face view. Found nesting in soil and foraging on lower parts of cocoa tree.

Technomyrmex species T<sup>3</sup>

TL 2.49 HL 0.61 HW 0.54 SL 0.59 PW 0.39

Colour red-brown to black, coxae of mid and hind legs and apex of fore coxa white. Appearance dull due to moderately fine pubescence, latter coarser on gaster. Erect setae sparse, on alitrunk single pair on pronotum and on mesonotum. Propodeum obtusely rectangular, vertical face slightly convex in profile. Collected from cocoa, nest seen in termite damaged branch. ants also using old termite tunnels.



Technomyrmex species T<sup>4</sup> × 31

Technomyrmex species T<sup>4</sup>

TL 2.03 - 2.49 HL 0.62 - 0.72 HW 0.54 - 0.62

SL 0.62 - 0.72 PW 0.36 - 0.40

Colour yellow-brown gaster darker. Appearance dull due to very fine overall pubescence and fine reticulate sculpturation, latter with distinct longitudinal pattern on pronotum. Erect setae only on ventral apex of gaster, on clypeus and a single short seta near base of fore coxa. Alitrunk in profile smoothly convex through pro- and mesonotum, propodeum with obtuse curved angle, declivity flat.

Only collections made at night in a house on CRIN.