

RESEARCH BULLETIN No. 8.

**ANTS OF THE NIGERIAN FOREST ZONE
(HYMENOPTERA: FORMICIDAE) PART V
DORYLINAE, LEPTANILLINAE**

An illustrated guide to worker caste,
Index to Parts I - V
and
Tabular conspectus of known biology

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SYNOPSIS

This is the fifth and final volume in a short series of illustrated guides to the ants of the Nigerian forest zone. The subfamilies Dorylinae and Leptanillinae are dealt with. An index to the whole series is given as part of a tabular conspectus of the known biology of all the species described in the series. The conspectus also includes those West African ant genera not represented in the CRIN collection.

INTRODUCTION

This is the fifth and final part of a short series of illustrated guides to the worker caste of ants of the Nigerian forest zone. Part I of the series should be consulted for background information and references. The subfamilies dealt with are Dorylinae and Leptanillinae.

Additionally there is an index to the whole series. This index is incorporated in a tabular conspectus of the known biology of all the ant species described and of the West African genera not represented in the CRIN collection.

In conclusion, I hope that as definitive identifications become possible appendices to the series can be issued to maintain an up to date source of knowledge. Undoubtedly many species await collection and in due course the guide will have to be revised.

Subfamily DORYLINAE

Diagnostic features

Eyes absent. Frontal carinae raised leaving condylar bulbs of antennae visible in dorsal view. Pedicel of one or two segments.

If pedicel of single segment then clypeus reduced so that antennal insertions are very close to anterior margin of head. Pygidium impressed, armed with a spine or tooth at each side posteriorly. Promesonotal suture distinct, mobile. Lateral alitrunk in large and medium workers with distinct, deep longitudinal impression below propodeal spiracle. Sting reduced, non functional. Polymorphic. DORYLINI.

If pedicel of two segments then antennae 10-segmented; genae carinate. Pygidium not impressed; not armed with spines or teeth. AENICTINI

Tribe AENICTINI

Genus Aenictus Shuckard

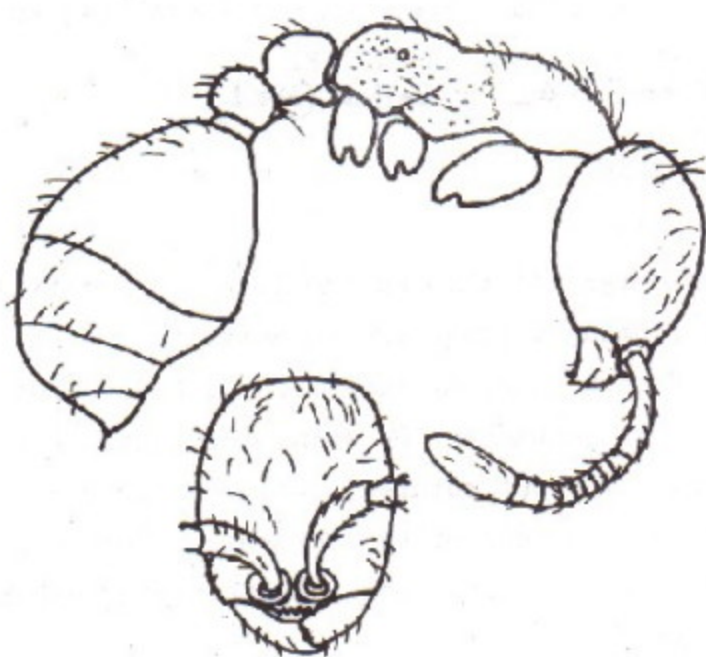
Diagnostic features

Posterior margin of clypeus and lobes of frontal carinae raised forming a ridge around antennal insertions. Genae lateral of each antennal insertion with a carina of variable length. Antennae 10-segmented. Eyes absent. Dorsum of alitrunk without sutures, metanotal groove usually impressed. Pedicel of two segments. Monomorphic.

Often display 'army ant' habits with narrow marching columns in leaf litter.



Aenictus rotundatus x31



Aenictus species 1 x 62.5

A. rotundatus

TL 2.86 HL 0.62 HW 0.50 SL 0.42 PW 0.34

Colour orange-brown, shiny, polished. Sculpturation restricted to rugopunctuation on lateral mesonotum, on propodeum and on lateral areas of pedicel. Erect setae long, fine, moderately abundant. Anterior margin of clypeus minutely denticulate. Mandibles with slightly elongated triangular apex, moderate preapical tooth, rest of inner margin denticulate. Head in front view with convex sides rounding into slightly convex occipital margin. Propodeum with pronounced margin, declivity concave in profile. Subpetiolar process elongated, flattened with anterior triangular apex; subpostpetiolar process similar but shorter.

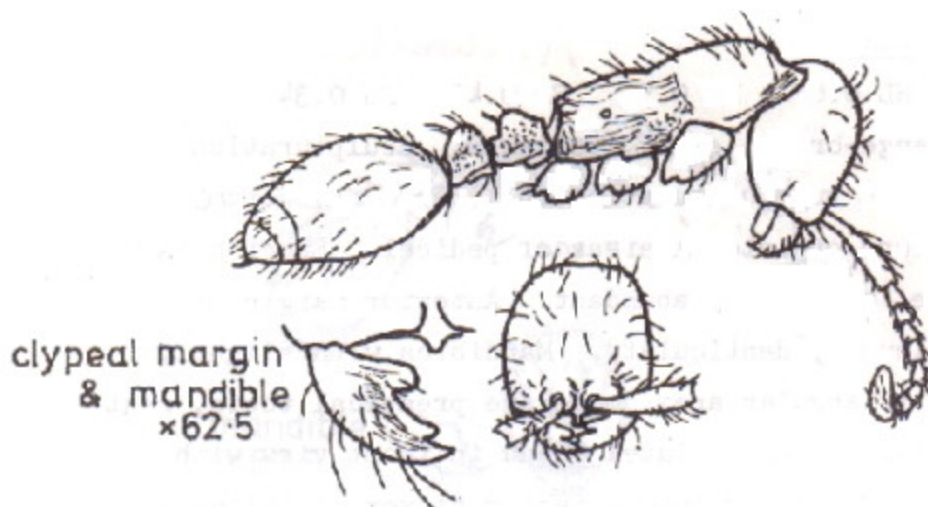
From leaf litter and foraging in single file up a cocoa tree.

Aenictus species 1

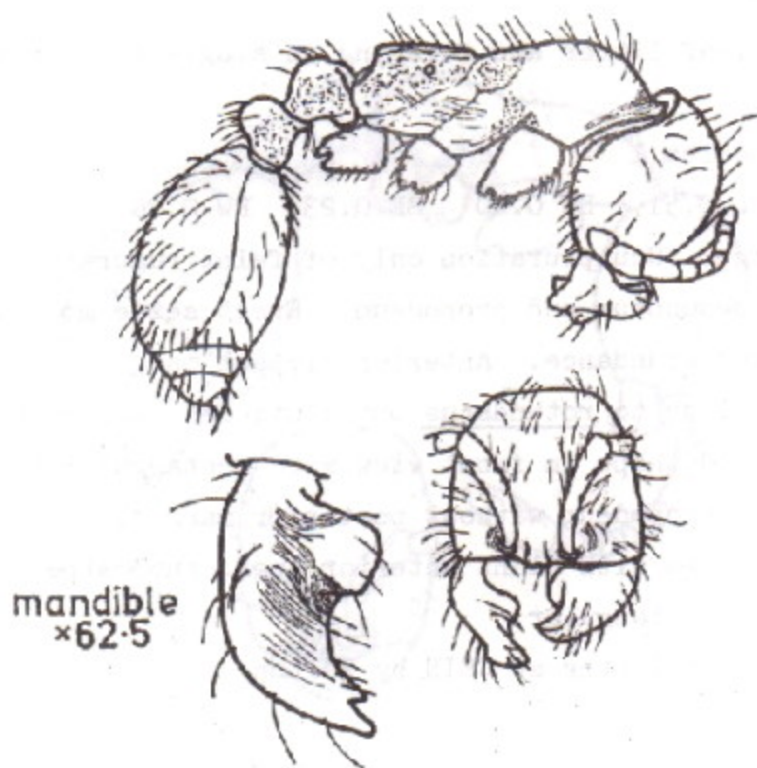
TL 2.36 HL 0.51 HW 0.40 SL 0.23 PW 0.26

Colour orange. Sculpturation only of faint rugoreticulation on lateral mesonotum and propodeum. Erect setae moderate in length and abundance. Anterior clypeal margin denticulate. Mandible similar to rotundatus but denticles even more reduced. Head shape in front view more rectangular than rotundatus. Propodeum without posterior margination. Subpetiolar process with blunt anterior apex; subpostpetiolar process blunt triangular.

From leaf litter at CRIN by Bolton.



Aenictus species 2 x 31



Aenictus species T¹ x 31

Aenictus species 2

TL 3.27 HL 0.62 HW 0.61 SL 0.47 PW 0.42

Colour dark orange-brown, legs and gaster more yellow; very shiny, polished, cuticle translucent. Sculpturation of anterior pronotum and lateral areas of pedicel very fine transverse striations; lateral mesonotum and propodeum fairly strongly rugoreticulose, rugae dominating. Erect setae long, relatively coarse and abundant. Anterior clypeal margin produced medially to form single tooth; mandibles very darkly coloured with large digitiform basal tooth, apical tooth large and one moderately large intermediate tooth, apices overlap when closed. Propodeum marginate, concave profile to declivity. Petiole domed, subpetiolar process well developed rectangular; subpost-petiolar process blunt triangular.

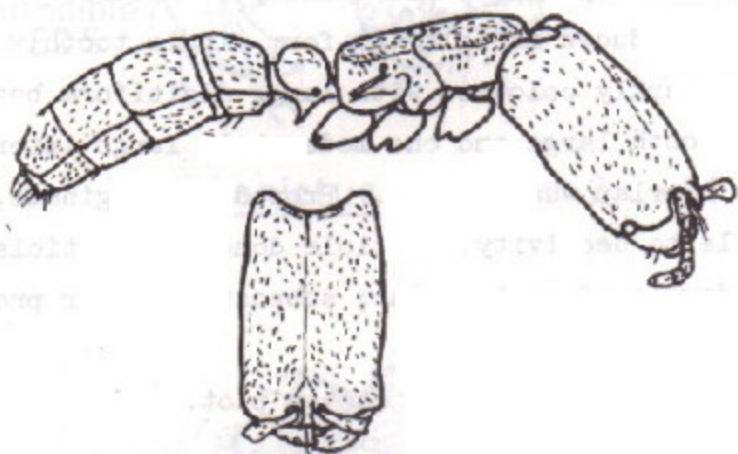
Collected on path and from cashew plot.

Aenictus species T¹

TL 4.54 HL 0.76 HW 0.86 SL 0.59 PW 0.54

Colour dark orange-brown, legs and gaster lighter, mandibles very dark, shiny, polished. Sculpturation of fine, faint reticulation on anterior pronotum, mesonotum, propodeum and pedicel; overlaid with and partly replaced by fine longitudinal rugae on parts of propodeum and mesonotum. Erect setae long, fine, abundant. Mandibles massive, basal tooth a huge blunt lobe; preapical tooth moderate, acute, apical tooth large, slightly blunt. Clypeus with bidentate median process on anterior margin. Head widest at anterior margin; distinct occipital margin. Position of promesonotal suture faintly visible on some specimens. Propodeal declivity marginate, concave profile. Petiole a flattened dome, subpetiolar process trapezoidal; subpost-petiolar process acute triangular.

From bare ground in garden and leaf litter in cocoa plot.



Dorylus (Alaopone) species x15

Tribe DORYLINI

Genus Dorylus Fabricius

Diagnostic features

Polymorphic. Mandibles with apical tooth long and acute, at least one other tooth on inner margin, usually more. Larger workers with fewer teeth. Frontal carinae vertical, condylar bulbs of antennae exposed. Antennae 9-, 10- or 11-segmented. Eyes absent. Promesonotal suture present, mobile; metanotal groove absent. Pedicel of a single segment; first gastral segment smaller than second. Pygidium impressed, armed at each side with a tooth or spine.

Wheeler (1922, 633) gave a key to the subgenera which I have used in separating out the species in the CRIN collection. The largest workers show the most distinctive development and I have drawn the largest specimen of each species.

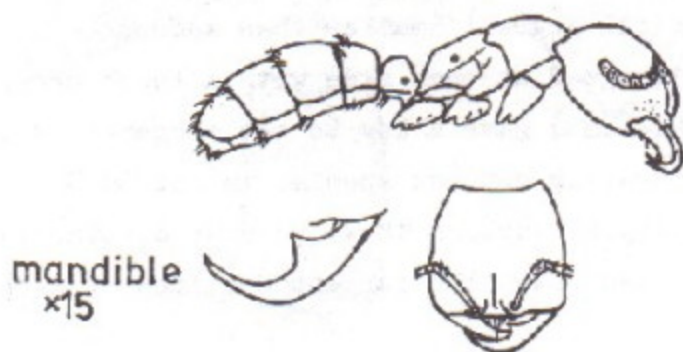
Subgenus Alaopone Emery

Antennae 9- jointed

Dorylus (Alaopone) species

TL 6.71 - 2.74, five morphs represented; largest
 HL 2.09 HW 1.28 SL 0.49 PW 0.72 Colour orange-brown,
 mandibles darker. Sculpturation all over of scattered hair
 pits. Erect setae only at anterior and posterior apices of
 body. Hair pits give rise to fine pilous setae. Head of
 larger morphs elongated near rectangular; less so in smaller
 morphs. Alitrunk completely flat dorsally. Subpetiolar
 process a triangular spine slightly hooked to rear in largest
 morph, straight in medium morphs and blunt in smallest.

Collected from under bark (? of dead wood) by
 Bolton at CRIN.



Dorylus (An.) kohli x 7.5

Subgenus Anomma Shuckard

Pygidium impressed with sharp margins, 11- jointed elongate antennae with at least some joints of funiculus longer than wide.

The well known Driver Ants, living and moving in vast colonies.

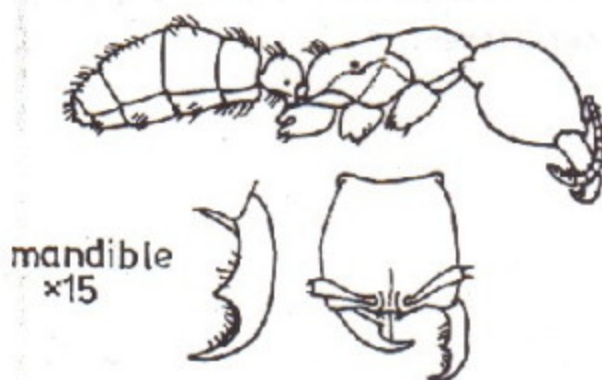
D. (An.) kohli

TL 9.75 - 4.18, at least four morphs; largest HL 2.28
HW 2.34 SL 1.20 PW 1.20 Petiole L 0.68 Colour very dark red-brown, lateral alitrunk and legs lighter. Sculpturation all over very fine reticulation. Erect setae on posterior margins of gastral segments and subpetiole. Mandible with long acute apical tooth and large triangular basal tooth, smooth margin between. Clypeal margin with long medial seta, other setae short. Antennal scapes thickening to broad apex. Head widest just before anterior margin. Promesonotum only slightly convex dorsally. Head with posterodorsal lateral triangular tubercles. Subpetiolar process broad based triangular, slight rearward curve.

On cocoa leaf litter.



Dorylus (An.) nigricans × 7.5



Dorylus (An.) sp. in wilverthi gp. × 7.5

D. (An.) nigricans

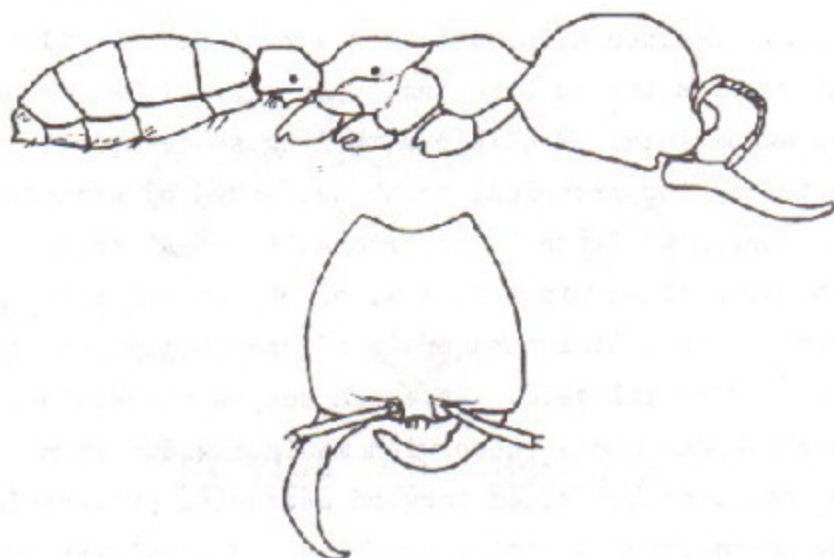
TL 10.88 - 3.86, at least four morphs; Largest HL 2.72
 HW 2.66 SL 1.39 PW 1.27 Petiole L 1.00 Colour dark
 red-brown. Sculpturation all over very fine reticulation.
 Several erect setae on tergites, pair on petiole dorsum,
 several subpetiole. Mandible with long acute apical tooth,
 simple triangular preapical tooth subtended by wrinkled inner
 margin running to large blunt triangular basal tooth.
 Anterior clypeal margin with low, blunt, medial triangular
 extension; long medial seta, pair of moderately long setae one
 each side of medial seta. Antennal scapes thickening to
 moderately broad apex. Head with maximum width at mid-
 length then straight sided forward narrowing preanterior
 margin. Promesonotum convex dorsally. Subpetiolar process
 broad based, low, rear facing, blunt triangular.

Found foraging at CRIN.

Dorylus (An.) sp. in wilverthi gp.

TL 10.13 - 4.18, at least four morphs;
 Largest HL 3.47 HW 3.41 SL 1.14 PW 1.14 Petiole L 0.87
 Colour red-brown. Sculpturation of fine dense puncturations.
 Erect setae relatively abundant on gaster, petiole and on
 dorsum of propodeum. Mandibles with long apical tooth
 subtended by denticulate margin running to basal triangular
 tooth; numerous setae on inner margin. Head widest at mid-
 length; pronounced domed dorsolateral posterior prominences.
 Antennal scape gradually thickening to broad apex. Sub-
 petiolar process a blunt rear-curved triangle.

Specimens without data but probably collected by
 Booker at CRIN or Ibadan.



Dorylus (An.) species A $\times 7.5$



Dorylus (An.) species T¹ $\times 7.5$

Dorylus (An.) species A

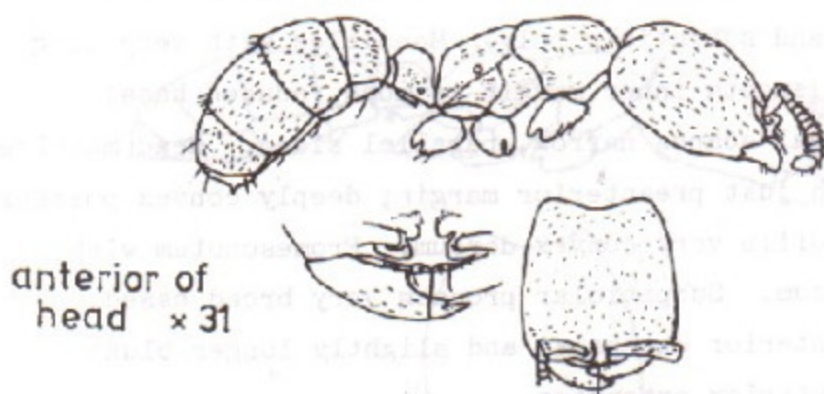
TL 12.88 - 6.50, five morphs represented; largest HL 3.61
 HW 3.80 SL 1.90 PW 1.52 Petiole L 1.12 Colour red-
 brown, head darker, anteriorly near black. Erect setae
 on sternites and subpetiole only. Mandibles with very long
 apical tooth, smooth inner margin to much reduced basal
 tooth. Antennal scapes narrow, parallel sided. Head massive,
 greatest width just preanterior margin; deeply convex posterior
 margin; in profile very convex dorsum. Promesonotum with
 near flat dorsum. Subpetiolar process very broad based,
 small round anterior extension and slightly longer blunt
 triangular posterior extension.

Collected by Bolton at CRIN.

Dorylus (An.) species T¹

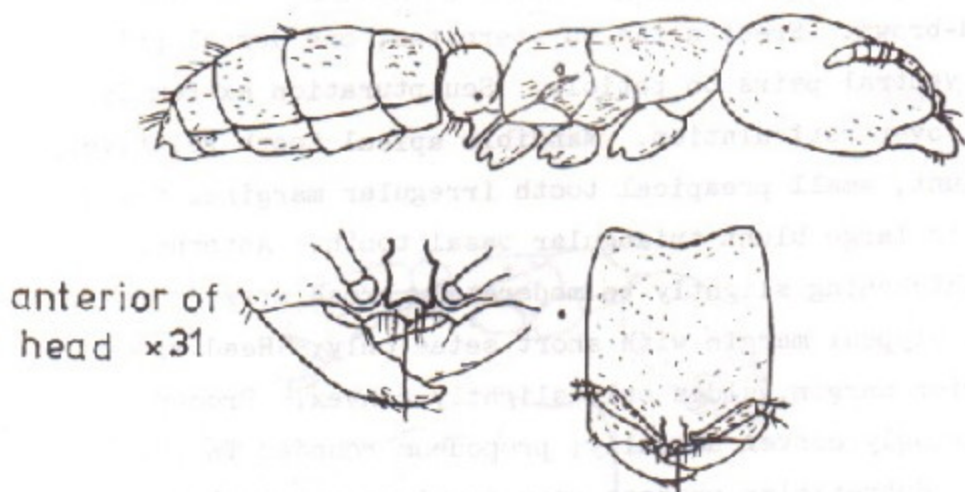
TL 9.56 - 3.93, at least four morphs; largest HL 2.41
 HW 2.47 SL 1.27 PW 0.89 Petiole L 0.87 Colour very
 dark red-brown. Erect setae on sternites, one dorsal pair
 and two ventral pairs on petiole. Sculpturation extremely
 fine all over reticulation. Mandible apical tooth relatively
 short blunt, small preapical tooth irregular margined flange
 running to large blunt triangular basal tooth. Antennal
 scapes thickening slightly to moderately broad apex.
 Anterior clypeal margin with short setae only. Head widest
 at anterior margin, sides only slightly convex. Promeso-
 notum strongly convex dorsally; propodeum rounded in
 profile. Subpetiolar process rear curving, triangular.

Collected on leaf litter under cocoa.



anterior of
head $\times 31$

Dorylus (D.) species A $\times 15$



anterior of
head $\times 31$

Dorylus (D.) species B

Subgenus Dorylus sensu stricto

Pygidium impressed with sharp margins; antennae 11-jointed, funiculi short and thick all joints except last wider than long.

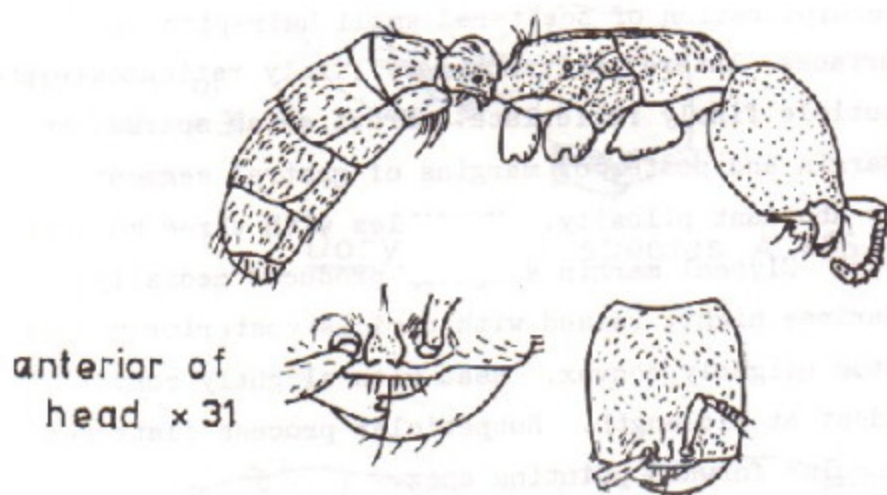
Dorylus (D.) species A

TL 5.57 - 2.83, at least four morphs; largest HL 1.49
HW 1.37 SL 0.59 PW 0.78 Colour yellow-brown, apices darker. Sculpturation of scattered small hair-pits on dorsal surfaces; lateral alitrunk very finely reticulostriate, lateral petiole finely reticulate. Erect setae sparse, on clypeal margin and posterior margins of gastral segments; relatively abundant pilosity. Mandibles with three moderate blunt teeth. Clypeal margin slightly produced medially, frontal carinae highly raised with curious posterior processes. Promesonotum slightly convex. Head with slightly convex sides, widest at midlength. Subpetiolar process flattened with triangular forward pointing apex.

From leaf litter, dead wood on ground and nest? in cocoa (? in crevice).

Dorylus (D.) species B

TL 7.0 - 3.5, at least four morphs; largest HL 1.93
HW 1.59 SL 0.62 PW 1.00 Colour red-brown, apices darker, legs yellow-brown. Sculpturation minute scattered hair-pits; reticulation on lateral alitrunk, especially mesonotum, and lateral petiole. Erect setae sparse but present on petiole as well as gaster; pilosity very sparse and very short. Mandibles with three blunt teeth. Anterior clypeal margin tridentate, one medial and one forward of each antennal insertion. Frontal carinae with highly raised medial portion to form near rectangular platform. Head near parallel-sided. Subpetiolar process long, rear-curved, narrow, blunt triangle. Alitrunk flat dorsally. Nesting and foraging in dead wood on ground.



Dorylus (R.) fimbriatus x15

Subgenus Rhogmus Shuckard

Impressed area of pygidium without sharp margins. Subapical tooth of mandibles double or truncate. Antennae 11-jointed; worker major 8 mm long.

D. (R.) fimbriatus

TL 7.16 - 2.12; five morphs; largest HL 1.56 HW 1.40
SL 0.56 PW 0.87. Colour dark orange-brown. Head, alitrunk and petiole finely reticulostriate, striations more marked dorsally. Scattered hair-pits on all dorsal surfaces, coarser on head. Erect setae sparse but two pairs on propodeum, few on both surfaces of petiole and gaster, very long on first sternite. Relatively abundant pilosity on dorsal alitrunk, petiole and all over gaster. Mandibles with moderate apical tooth, subapical tooth bluntly bifurcate, basal tooth reduced. Anterior clypeal margin straight projecting forward slightly. Alitrunk dorsum flat. Subpetiolar process small rear-curved acute triangle. From tree stump and outside ground nest (? migrating).

Subgenus Typhlopone Westwood

Impressed area of pygidium without sharp margins. Subapical tooth of mandible simple. Antennae 11-jointed. Worker major 13 mm long.

There are two specimens, one labelled D. (T.) fulvus and the other D. (T.) species 1, in the CRIN collection both collected by Bolton from soil below logs. They are not drawn or described as both are small and undoubtedly not the largest morph.

Subfamily LEPTANILLINAE

Diagnostic features

Pedicel of two segments. Pygidium not impressed.

Frontal carinae vertical, failing to cover antennal insertions. Eyes absent. Antennae 12-segmented.

Tribe LEPTANILLINI

Genus Leptanilla Emery

Diagnostic features basically as above. Promesonotal suture present; metanotal groove absent.

Minute ants TL usually less than 1.5 mm. Depigmented, colour yellow.

Subterranean with army ant habits. In West Africa known only from Ghana.

INDEX TO ANT SPECIES AND CONSPECTUS OF THEIR BIOLOGY

The ant species are arranged in alphabetical order according to their generic status and with no reference to subfamily or tribal affinities. Against each species (or genus where there are no species represented in the CRIN collection) the following information is given:

- (i) Part numbers and page number in the series of illustrated guides.
- (ii) Nesting sites where these are known, categories used are:
 - A - in soil
 - B - in termitaria
 - C - in leaf litter
 - D - in dead wood in or on the surface of soil
 - E - in dead wood on living trees
 - F - under bark of living trees
 - G - on surface of trunk or branches of trees
 - H - on or between living leaves
 - I - in crevices or rot holes in living trees
(usually filled with soil and/or plant debris)
 - J - woven round twig or branch junctions.
- (iii) Habitual foraging areas, categories used are:
 - K - under ground (hypogaeic species)
 - L - on soil surface, including amongst leaf litter
 - M - in dead wood in or on the surface of soil
 - N - on herbaceous, low level, vegetation
 - P - on living trees, category subdivided into
 - P.1 - on indigenous trees; P.2 - on cocoa;
 - P.3 - on kola; P.4 - on cashew;
 - P.5 - on oil palm; P.6 - on plantain;
 - P.7 - on coffee

- (iv) Y - Homoptera tending
Z - construct tents, i.e., protective shelters,
over Homoptera; tent materials indicated
as S - soil particles;
D = plant or arthropod debris;
C = carton, triturated wood.
- (v) Notes - very brief explanations or comments.

In all columns except Z (see above) the sign + indicates a definite observation and ? a suspected or dubious observation.

* indicates a species represented in the CRIN collection but specimens from elsewhere, e.g. Ghana, and not Nigerian forest zone.

[illegible]

Table continued

Genus Species	Part Page No. No.	A	MEBP STIPS										K L M N P.1 P.2 P.3 P.4 P.5 P.6 P.7	Y Z	Notes			
			B	C	D	E	F	G	H	I	J							
<u>Brechyronota</u> <u>gennarensis</u>	I 19	+											+		monotypic			
<u>Calyptrichus</u> <u>cyphoceros</u>	III 63		+															
<u>Chamaeotus</u> <u>acraplimentis</u> <u>brutus</u> <u>flavomarginatus</u> <u>farinatus</u> <u>donnellis</u> <u>maculatus</u> <u>maculatus</u> <u>viridus</u> species A species 12	II 3 II 5 II 5 II 7 II 7 II 7 II 9 II 9 II 9 II 11 II 9 II 11	+			+							+		+	+	3		
<u>Cetiocondyla</u> <u>emeryi</u>	III 3	+																
<u>Cerebra</u>	IV 27	+											+			hypogaeic		
<u>Cetaphys</u>	II 1	+														savannah		
<u>Cetaneae</u> <u>brevisetosus</u> <u>difficilis</u> <u>egens</u> <u>eulienensis</u> <u>moquetyi</u> <u>pygmaeus</u> <u>vorticus</u> <u>weissi</u> species 14	III 5 III 7 III 9 III 11 III 11 III 13 III 13 III 15 III 15 III 17				+								+	+	+	+		

Table continued

Genus species	East Page No. No.	NEET SITES										FORAGING AREAS							Y Z	Notes				
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P.1	P.2	P.3			P.4	P.5	P.6	P.7
<u>Hylemyia lugae</u>	IV 27					+				+													+	?
<u>Diocoryne</u>	I 7												+	+										
<u>Dorylus (Alecione) sp.</u>	V 9					+								+										
(Anom.) <u>kohli</u>	V 11																							
(An.) <u>nigricans</u>	V 13					+								+										
(An.) sp. in silverthicket	V 13													+										
(An.) species A	V 15													+										
(An.) species T ¹	V 15													+										
(Dorylus) species A	V 17													+										
(D.) species B	V 17													+										
(Rhogmus) <u>finbristis</u>	V 19													+										
(Xyphlocome) <u>fulvus</u>	V 19													+										
(?) species 1	V 19													+										
<u>Ergasius dentatus</u>	II 47															+								
<u>Epitritus</u>	III 43																							
<u>Hypomyza camerunensis</u>	I 21																							
(?) species	I 21																							
<u>punctatissima</u>	I 21																							
<u>Iridomyia</u>	II 45																							
<u>Leclanilla</u>	V 21																							
<u>Leptogena elegans</u>	I 23																							
<u>stygia</u>	I 23																							
<u>Lecliothorax species 1</u>	III 57																							

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Driver ant.

crypto-bolic

on cocon
& trees
in Ghananot yet
in W.
Africa

in Ghana

savannah

Table continued

Genus species	Part Page No.	NEST SITES												FORAGING												Y	Z	Notes
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	1	P.2	P.3	P.4	P.5	P.6	P.7					
<i>Pheidole crassinoda</i>	IV 13	+																+	+	+	+	+	+		+	SD		
<i>megacerbina</i>	IV 15																	+	+	+	+	+	+		+	U		
<i>minima</i> /species B	IV 17																	+	+	+	+	+	+		+			
<i>speculifera</i>	IV 17																	+	+	+	+	+	+		+			
species A	IV 19																	+	+	+	+	+	+		+			
species D	IV 19																	+	+	+	+	+	+		+			
species E	IV 21																	+	+	+	+	+	+		+			
species F	IV 21																	+	+	+	+	+	+		+			
species 1995	IV 23																	+	+	+	+	+	+		+			
species T1	IV 13																	+	+	+	+	+	+		+			
species T2	IV 23	+																+	+	+	+	+	+		+			
species T3	IV 15																	+	+	+	+	+	+		+			
species T4	IV 25																	+	+	+	+	+	+		+			
species T5	IV 25	+																+	+	+	+	+	+		+			
<i>Pheidolegeton</i> species	IV 41																	+	+	+	+	+	+		+			
<i>Phytomyzomera</i>	I 7																	+	+	+	+	+	+		+			
<i>Myrmica longi</i>	I 35	+																+	+	+	+	+	+		+			
species	I 35																	+	+	+	+	+	+		+			
<i>Pragolepis brunni</i>	II 41																	+	+	+	+	+	+		+			
species T1	II 41																	+	+	+	+	+	+		+			
species T2	II 43																	+	+	+	+	+	+		+			
<i>Platythyrea contracta</i>	I 9																	+	+	+	+	+	+		+			
<i>frontalis</i>	I 9																	+	+	+	+	+	+		+			
<i>Plectroctena macgeei</i>	I 29																	+	+	+	+	+	+		+			
<i>minor</i>	I 29																	+	+	+	+	+	+		+			

Table continued

Genus species	Part Page No.	NEST SITES										FORAGING AREAS										Notes	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P.1	P.2	P.3	P.4	P.5	P.6		P.7
<u>Polyrhachis conchava</u>	II 17																						
<u>decumbentata</u>	II 17					+																	
<u>laboriosa</u>	II 19																						
<u>militaris</u>	II 19					+																	
<u>monista</u>	II 21																						
<u>otlet</u>	II 21																						
<u>ubidius</u>	II 23																						
<u>rufigalpis</u>	II 23																						
<u>weissi</u>	II 25																						
<u>Prenolepis</u>	II 1																						
<u>Pristomyrmex species A</u>	IV 5					+	+																
<u>Proboomyrmex</u>	I 7					+																coastal plains	
<u>Proceratium</u>	I 7					+																in Ghana	
<u>Proteromyrmex silvestrii</u>	I 7																					monocyclic	
<u>Psolidomyrmex foveolatus</u>	I 31					+																	
<u>Pseudolepis</u>	II 1					+																	
<u>Quadristernum</u>	III 43 + 1																					in Ghana	
<u>Rhopilemyrmex</u>	IV 47					+																	
<u>Santschella</u>	II 1																					arboreal	
<u>Serratitermus lottii</u>	III 45					+	+	+															
<u>lulac</u>	III 47					+																	
<u>Mayzel</u>	III 45					+																	
<u>sp. n. ton coll.</u>	III 47					+																	
<u>species n.</u>	III 47					+																	

Table continued

Genus species	Part Page No.	NEST SITES										FORAGING AREAS										Notes			
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	P.1	P.2	P.3	P.4	P.5	P.6	P.7	Y	Z	
<u>Pterodroma species 61</u>	IV 7																								
<u>Pterodroma lucayanus</u>	IV 49																								
<u>serripennatus</u>	IV 51	+										+											+		
species E	IV 51												+										+		
species T	IV 53																								
species K	IV 53																								
species nr. K	IV 53																								
species M	IV 55																								
species Q	IV 55																								
species Q ₁	IV 55																								
species Q ₂	IV 57																								
species Q ₃	IV 57																								
species Q ₄	IV 59																								
<u>Pterodroma anthracina</u>	I 39																								
<u>ophthalmitica</u>	I 39																								
species	I 39																								
<u>Pterodromopus carolin</u>	I 31																								
<u>Trichoscopa</u>	III 43																								
<u>Trichopholix species B</u>	IV 59																								
species D	IV 61	+																							
species G ₁	IV 61																								
<u>Viticola</u>	I 37																								
<u>Muscivora europunctata</u>	IV II																								
<u>Xiphiocarpus species A</u>	IV 61																								
species B	IV 63																								
species H	IV 63																								
species G ₁	IV 63	+																							

coloring.

MONO-
typic
not yet
in
Africalive in
larks
Virexintroduced
to
Cameroun

in Ghana