

A new genus and species of Philopteridae (Mallophaga)

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SYNOPSIS

A new genus is described for *Docophorus longiceps*, parasitic on *Brachypteracias leptosomus*, and for a new species from the same host. The possible affinity of the new genus is discussed.

*Buerelius*¹ gen. n.

Head.—Marginal carina interrupted laterally and medially with the hyaline margin arising at the distal end of the premarginal carinae. The dorsal preantennal suture broad and directed anteriorly, thus delineating a forward projecting area of the dorsal surface. No typical dorsal anterior plate present but the region immediately posterior to the dorsal anterior suture shows some differential sclerotisation. Ventral plate deeply concave anteriorly. Ventral carinae interrupted medianly and passing anteriorly to fuse with distal ends of premarginal carinae; pulvinus with lobes attached to flattened parallel thickened edges of ventral carinae. Temporal carinae faintly apparent in stained specimens; gular plate and conus well developed. Ocular seta spiniform; of the 6 marginal temporal setae, only the fourth seta is long, the remaining setae being short and spiniform.

Thorax and abdomen.—Pronotum with one long marginal seta each side; meso- and metanotum form short pterothorax. Abdomen with 9 apparent segments: II (I + II), III–VIII, IX (IX + X) and the terminal segment XI; male anogenital opening and anal setae dorsal. First apparent tergum (II) without anterior setae.

Type-species: *Docophorus longiceps* Piaget, 1880.

Distribution.—Known only from *Brachypteracias leptosomus* (Lesson), the Short-legged Ground-Roller of Madagascar, belonging to the family Coraciidae (according to Peters, 1945 : 240).

DISCUSSION

This genus belongs to the *Brueelia*-complex, which comprises *Brueelia* Kéler *sensu* Hopkins & Clay (1952 : 52–53), *Sturnidoecus* Eichler, *Bizarrifrons* Eichler and perhaps *Formicaricola* Carriker and *Formicaphagus* Carriker. Also included are some undescribed species somewhat intermediate between *Brueelia* and *Sturnidoecus* and one species from *Manucodia* (Paradiseidae) with an asymmetrical head similar to that of *Bizarrifrons* (parasitic on the Icteridae), but presumably evolved independently. The characters of the preantennal region of the head show considerable diversity throughout the genus *Brueelia* itself (see Clay, 1951), and there has probably been much parallel evolution in these characters; this makes generic separation within the complex difficult. However, we feel that the characters of the head in *Buerelius* are so different from those of any other Mallophaga that a new genus is justified.

The species of the *Brueelia*-complex, including *Buerelius*, show the following characters:—Head with ventral carina always interrupted medianly and passing forward each side to or towards the anterior margin of the head, each having a flattened area parallel to that of the other side, to which are attached the lobes of the pulvinus. Pronotum with 1 + 1 setae; meso- and metanotum fused to form a pterothorax; episternum 3 fully sclerotised laterally. This last character is useful for separating

¹ *Buerelius*, masculine, is used to suggest the affinity of this genus to *Brueelia*.

those members of the *Brueelia*-complex which are somewhat *Philopterus*-like in general habitus from *Philopterus*, *Echinophilopterus*, *Cuculoecus*, *Craspedorrhynchus*, *Aegy-pocus*, *Alcedoecus* and *Strigiphilus*. All these latter genera have episternum 3 in the form of a discrete sclerite at the inner articulation of the third coxa. At least some of the abdominal segments have the tergal thickening divided medianly; male with fused terga IX-X separated from XI by a definite suture, arched centrally and with tergal plate narrowed or interrupted medianly; male anogenital opening and anal setae dorsal. Most of the species also show the following characters, and all have at least two of them: (1) Only one of the temporal setae each side is long (except in species from the Momotidae). (2) First apparent tergum (II) without anterior

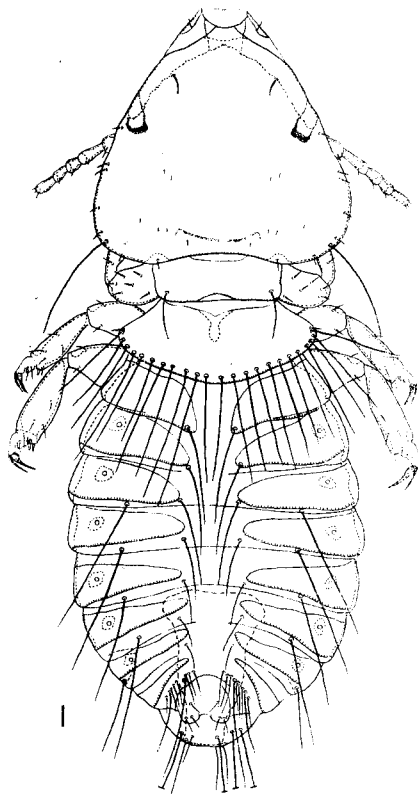


FIG. 1.—*Buerelius subsimus* sp. n. Male, dorsal (B.K.T.).

setae (except in some species of *Formicaricola*). (3) Abdominal sternites in the form of central plates. (4) Female without apparent sternites on segments posterior to the vulva. (5) Vulval margin with short, stout spine-like setae. (6) Lateral setae posterior to vulva on raised area of the sternite each side. (7) Female subgenital plate, when present, reaches to vulval margin. (8) Last segment of male abdomen narrower than previous segments.

The species of *Buerelius* show characters (1), (2), (3), (4), (7) and (8), and are therefore separable from most of the other members of the *Brueelia*-complex in the female by the absence of short, stout spine-like setae on the edge of the vulva and of the raised area bearing setae each side of the last sternite. From the rest of the *Brueelia*-complex and all other Philopteridae they are separated by the characters of the head.

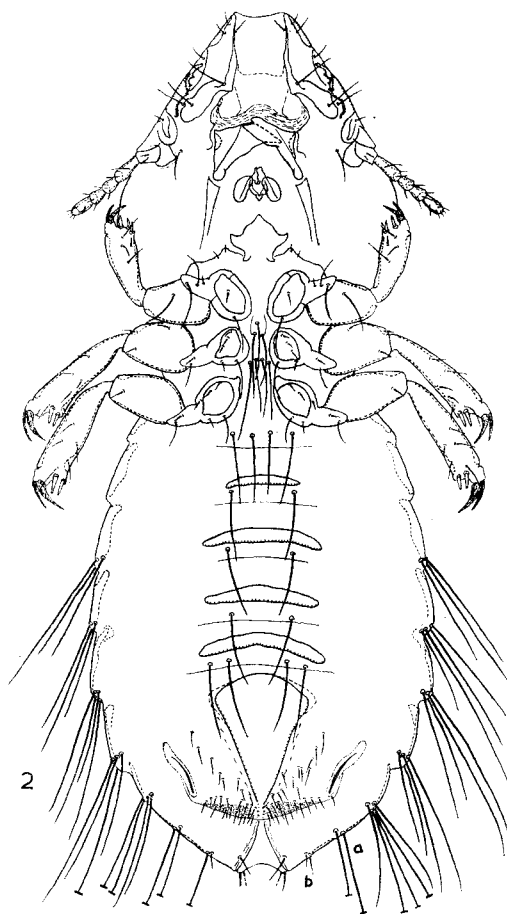


FIG. 2.—*Buerelius subsimus* sp. n. Female, ventral (B.K.T.).

Buerelius longiceps (Piaget, 1880)

(Plate I, figs. 1, 3; text-figs. 3, 4, 5, 6, 7, 13)

Type-host: *Brachypteracias leptosomus* (Lesson)

Docophorus longiceps Piaget, 1880, *Pediculines*: 663, pl. 54, fig. 6.

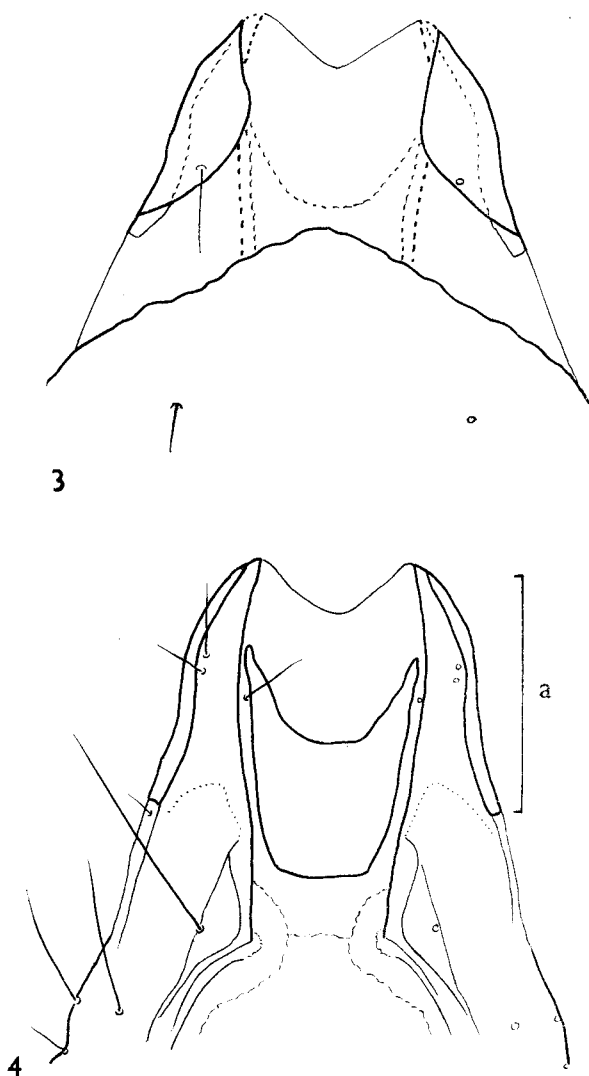
Philopterus longiceps (Piaget, 1880); Harrison, 1916, *Parasitology* 9 : 98.

Brueelia longiceps (Piaget, 1880); Hopkins & Clay, 1952, *A Check List of the Genera and Species of Mallophaga*, London, p. 58.

A feebly sclerotised species, having the head more heavily sclerotised than the thorax and abdomen. The 2 sexes similar, apart from posterior segments of abdomen; sexual dimorphism shown in the larger size and greater length of some of the setae of the female.

Characters as given above for the genus and as follows: Region of head anterior to origin of dorsal preantennal suture relatively long and narrow, hyaline margin concave; anterior dorsal seta well removed from edge of preantennal suture; anterior seta 3 (Clay, 1951 : 182) absent; dorsal postnodal setae not apparent. Position of normal setae relative to carinae and to each other, and their size as shown in figures 3-4. There is some individual variation, a normal seta may be missing or an additional seta present. Pronotum entire, with thinner central area; prosternum unhardened without setae. Pternotum entire with thinner anterior median notch; it has a continuous row of posterior marginal setae, of which the outer or most anterior one each side is spiniform and relatively ventral to the long central pteronotal setae; one female lacks the right spiniform seta. Count of central setae: male (7)², 22-26; female (11), 22-28. Meso- and metasternum unhardened, both bearing long setae as follows: mesosternum, male and female, 3; metasternum: male (7), 3-4: female

² Number of specimens in brackets.

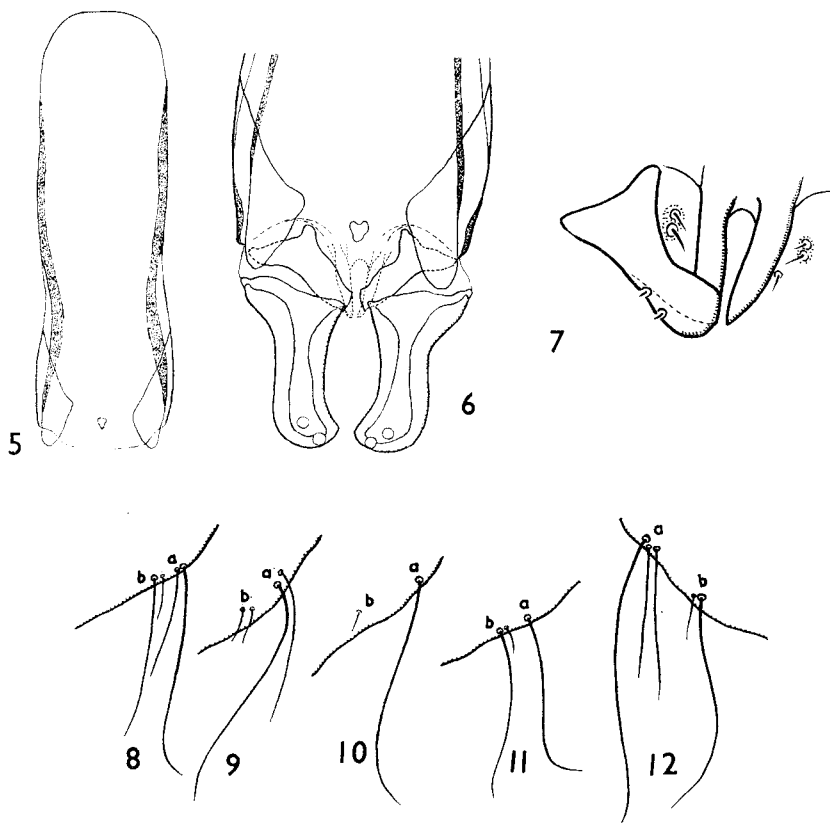


FIGS. 3-4.—*Buerelius longiceps* (Piaget). (3) Male head, preantennal region, dorsal (T.C.); (4) ventral (T.C.).

(10), 3-5. In the male abdominal tergal thickening II-X as lateral tergites (as in fig. 1). In the female tergal thickening II-VIII and XI in the form of lateral tergites; fused tergites IX-X continuous across segment. In both sexes sternal thickening III-VI present as narrow transverse central plates (fig. 2); subgenital plates as in figures 1-2; no sclerites posterior to vulva apparent in female; vulval margin convex. Male genitalia as in Plate I, fig. 3 and figures 5-7.

Abdominal chaetotaxy.—Post-spiracular setae present on terga IV-VII with associated sensilli on IV-V; III with the usual trichobothrium. Tergum II without anterior setae; tergoventral setae II-VIII: 1 + 1; X: 6 males, 6-10 each side, of unequal length and thickness, total 15-18, X, 16.3; 12 females, 3-6 each side, total 7-11, X 8.7; these setae are also of unequal length and thickness, but two each side are always longer and thicker, one of these the seta nearest the mid-line (fig. 13). Size of tergoventral setae of male as in figure 1; in the female tergoventral setae of V-VII, unlike the condition in the male, are similar in size to the post-spiracular setae, and those on VIII are thicker and longer than the trichobothrium (fig. 13). The post-spiracular seta and a tergoventral seta may occasionally be absent on one side of one of the terga. Pleural setae long, number each side and total (in brackets): Male—II, 0; III, 0, 1 with 1 + 0; IV, 2-3 (4-6); V, 2-4 (5-7); VI, 4 (8); VII, 4-5 (8-9); VIII 3-4 (6-8); posterior setae, 1-2 (3-4). Female—II, 0; III, 0, 1 with 1 + 0; IV, 2-4 (5-7), 1 with 0 + 2; V, 2-4 (5-8); VI, 2-5 (6-9); VII, 3-5 (7-10), 1 with 7 + 5; VIII, 4-5 (8-10), 1 with

0 + 4 and 1, 7 + 10, some of which appear to be on the tergites. Setae designated as *a* in figure 2: 0-2 (1-4); *b*, 0-2 (2-4); these setae are variable in length (figs. 8-12). Sternal setae long, male: II, 3-5 (1 only in 1 specimen); III, 2-4; IV-V, 2; VI, 4; no setae lateral to genital plate, except in 1 specimen in which there is a seta on 1 side; posterior margin of last segment with 1-3 (2-6), moderately long to long setae appearing dorsal, marginal or ventral in mounted specimens. Female: II, 4-5; III, 2, 1 with 4; IV, 2; V, 2, 1 with 3; VI, 2 + 2. Chaetotaxy of genital region as in figure 2.



FIGS. 5-12.—(5-7) *B. longiceps* (Piaget), male genitalia: (5) basal apodeme (B.K.T.); (6) parameres and mesosome (B.K.T.); (7) part of mesosome enlarged (T.C.). (8-12) *Buerelius*. Variation in numbers and lengths of pleural setae *a* and *b* (see fig. 2) in female (B.K.T.).

Material examined.—1 ♂, 2 ♀ syntypes of *Docophorus longiceps* Piaget from *Brachypteracias leptosomus* (Lesson); 7 ♂, 20 ♀ from skins (4 individuals) of the type-host from the Malagasy Republic.

Lectotype (here designated) of *Docophorus longiceps* Piaget: ♂ in British Museum (Natural History) Piaget Collection, slide No. 600.

Buerelius subsimus sp. n.

(Plate I, figs. 2, 4; text-figs. 1-2)

Type-host: *Brachypteracias leptosomus* (Lesson)

This species is found on the same host individuals as *longiceps*; it is at once distinguished by the shape of the head and hyaline margin. Comparison of the structures forming the male genitalia is difficult, as they appear somewhat different in different specimens depending on the position when mounted; however, a careful comparison of these structures in all the male specimens of both species showed no constant differences. No other constant features separating the two species could be found.

In both sexes that part of the head anterior to the preantennal suture is shorter than that of *longiceps*, both actually and relatively (*see* under measurements). The hyaline margin is either straight or weakly concave. The range of setae of the thorax and abdomen is similar to that of *longiceps*, allowing for the normal variation found in most of the Philopteridae.

Material examined.—7 ♂, 12 ♀ from skins (4 individuals) of the type-host from the Malagasy Republic.

Holotype ♂, from *Brachypteracias leptosomus*, MALAGASY REPUBLIC; in the British Museum (Natural History), slide no. 689.

It is with some hesitation that we have erected a new species for these specimens. However, the marked difference in the shape of the head appears to be constant with no intermediates, and it seems more satisfactory to recognise two taxa. The presence

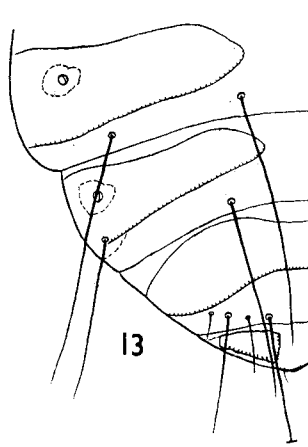


FIG. 13.—*Buerelius longiceps* (Piaget). Female abdomen, posterior segments, dorsal (B.K.T.).

of two similar species parasitic on one host individual is not uncommon in the Mallophaga, and two such species frequently differ in the shape of the head; examples are found in the genera *Coloceras* on the Columbiformes, *Goniodes* on the Galliformes, *Austrogoniodes* on the Sphenisciformes, *Brueelia* on the Passeriformes and of *Procavicola* on the Hyracoidea. In the pairs of species belonging to these genera, there are other differences in addition to the shape of the head. In some of the Menoponidae the two species may be separable in one sex only: for example, *Colpocephalum scopinum* Mjöberg and *C. smithi* Clay, both parasitic on *Scopus umbretta*, can be separated only by the chaetotaxy of the male abdomen (*see* Clay, 1964).

Measurements.—Range and mean of certain parts of the head for both species are given, together with those of other parts of the body of one male and one female to show relative measurements.

	MEASUREMENTS (in mm.)							
	Male				Female			
	Length		Breadth		Length		Breadth	
	A.	B.	A.	B.	A.	B.	A.	B.
Head . . .	0.55	0.49	0.52	0.52	0.59	0.55	0.55	0.54
Prothorax	0.25	0.23	.	.	0.25	0.21
Pterothorax .	.	.	0.42	0.43	.	.	0.45	0.46
Abdomen . .	0.63	0.80	0.57	0.66	0.76	0.90	0.64	0.69
Total . . .	1.40	1.51	.	.	1.62	1.71	.	.

MEASUREMENTS (in mm.)

Male Head				
	A.		B.	
	Range	X (7)	Range	X (7)
Length .	0.550-0.580	0.560	0.490-0.540	0.510
Length a.	0.112-0.144	0.130	0.086-0.099	0.090
Breadth .	0.510-0.530	0.520	0.500-0.540	0.519
B .	0.910-0.950	0.930	0.970-1.050	1.020
C				
B	0.220-0.274	0.249	0.166-0.187	0.173
L.a.				

Female Head				
	A.		B.	
	Range	X (11)	Range	X (9)
Length .	0.565-0.620	0.595	0.530-0.570	0.550
Length a.	0.128-0.156	0.142	0.086-0.100	0.096
Breadth .	0.540-0.600	0.562	0.530-0.580	0.564
B .	0.890-1.000	0.943	0.990-1.055	1.030
C				
B	0.232-0.278	0.256	0.151-0.180	0.170
L.a.				

Length = total length at mid-line of head; Length a. = average of lengths of premarginal carina each side of head (fig. 4, a.). Number of specimens in brackets. A, *B. longiceps*; B, *B. subsimus*.

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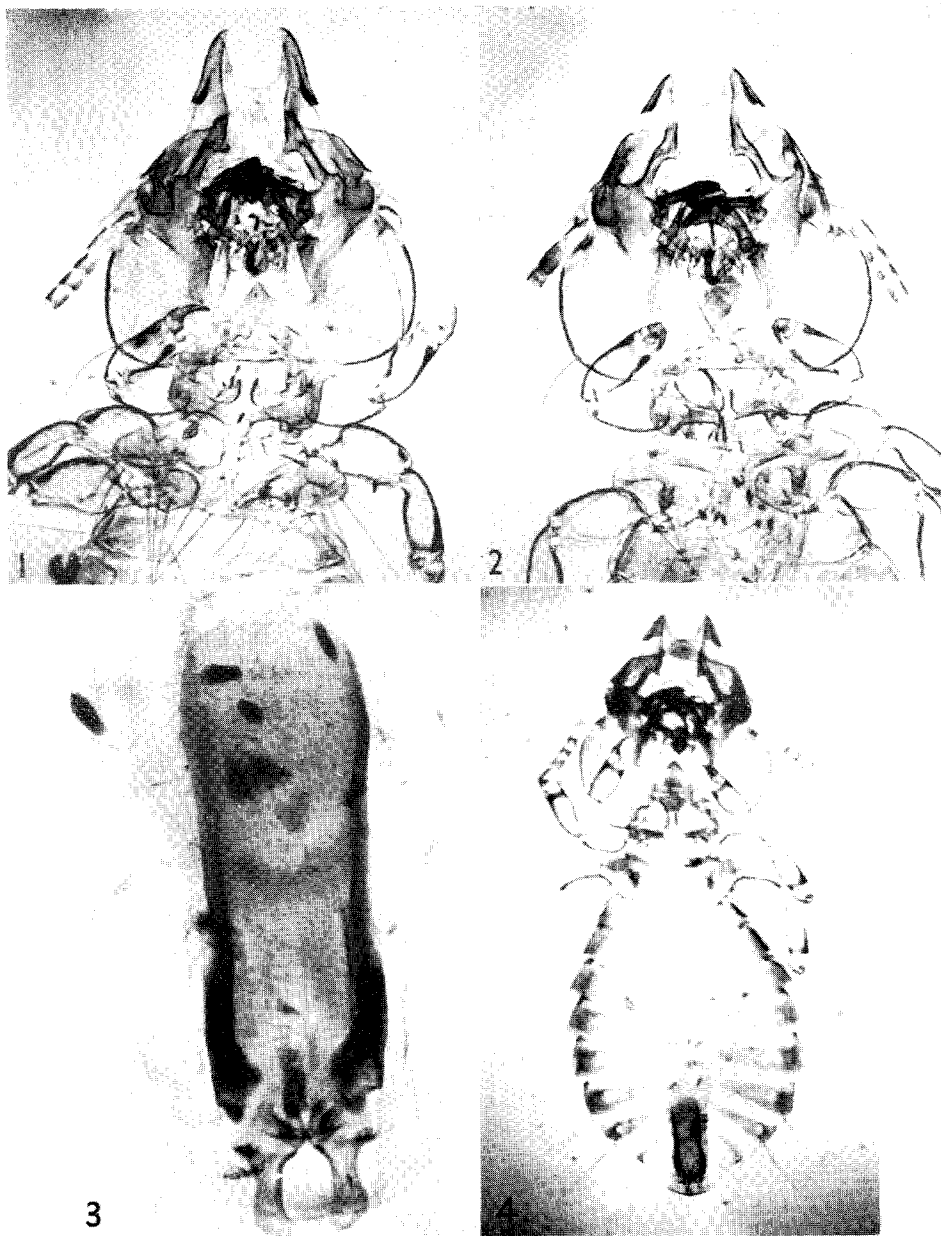


FIG. 1.—*Buerelius longiceps* (Piaget), male head.
FIG. 2.—*Buerelius subsimus* sp. n., male head.
FIG. 3.—*Buerelius longiceps* (Piaget), male genitalia.
FIG. 4.—*Buerelius subsimus* sp. n., male.