

Fig. 7.

Fig. 8.

Fig. 7.—*Numidica suricattae*—hind end of male.  
 Fig. 8.—*Numidica suricattae*—hind end of male.

17th Report of the Director of Veterinary Services and Animal Industry, Union of South Africa, August, 1931.

## New Genera and Species of Mallophaga.

By G. A. H. BEDFORD, Research Officer, Onderstepoort.

SUPER-FAMILY ISCHNOCERA Kellog.  
 FAMILY TRICHODECTIDAE Burmeister.  
 GENUS TRICHOLIPEURUS Bedford.

*Tricholipeurus* Bedford, Rep. Dir. Vet. Serv., Un. S. Afr., XV., p. 514 (1929).

*Tricholipeurus antidorcus* nov. sp.  
 (Figs. 1-3.)

**MALE.**—*Head* (fig. 1) light brown, median area pale, with reddish-brown bands and mandibles. Temples with a narrow marginal band. Plate on gular region triangular. Antennae with the first segment large, very slightly longer than the second and third together; second and third segment subequal.

*Thorax* light brown with slightly darker lateral bands.

*Pronotum* with a transverse row of four minute pustulated setae in the middle; five or six on each side on the posterior margin and two on each lateral margin. *Metanotum* with a row of about 38 minute pustulated setae on the posterior margin. Between the fore and mid coxae there is a narrow chitinous band which widens out between the latter. In a line with the bases of the hind coxae there are two small pustulated setae in the middle.

*Legs* with the mid tibiae very slightly narrower and longer than either the fore or hind tibiae.

*Abdomen* elongated and narrow with crenulated lateral margins; pale in colour, with a transverse band and a row of minute pustulated setae on the dorsal and ventral surfaces of each segment. Tergite i with a narrow marginal band; tergites ii to vii with a short comma-shaped chitinous bar in front of each spiracle; close to these and nearer the middle there is a small  $\supset$ -shaped chitinous spot. Spiracles median-sized. Tergite viii with a transverse row of setae in the middle, and a row on each side below. On sternites vi to vii there is a longitudinal band on each side of the genitalia. Male genitalia as in figure 2. The preputial sac (not shown in the figure) is beset with minute teeth.

**FEMALE.**—*Head* as in the male, except that it is broader at the temples. First joint of antennae slightly broader than the last two, as long as the second; third joint the longest.

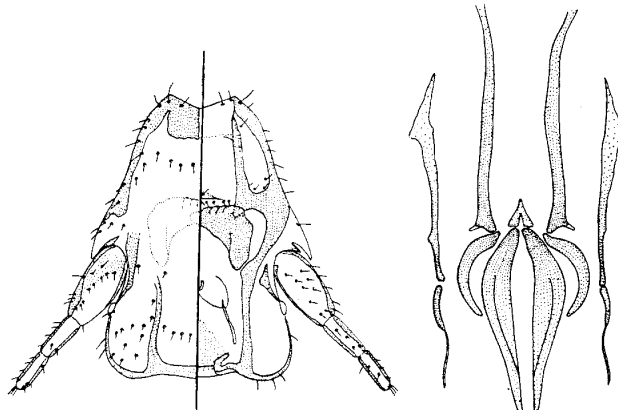


Fig. 1.

Fig. 2.

Fig. 1.—*Tricholipeurus antidorcus* nov. sp., head of male.  
C. G. Walker, del.  
Fig. 2.—*Tricholipeurus antidorcus* nov. sp., male genitalia.  
C. G. Walker, del.

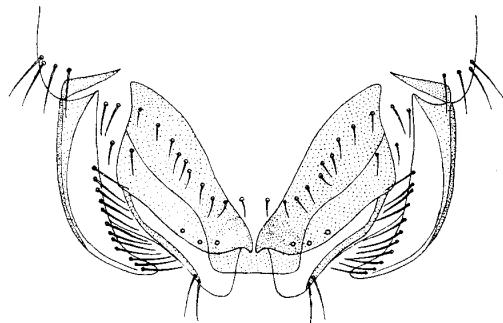


Fig. 3.—*Tricholipeurus antidorcus* nov. sp., apical sternites of female.  
G.A.H.B., del.

*Thorax and legs* as in the male.

*Abdomen* without  $\supset$ -shaped chitinous spots on the tergites. Tergite viii with two short pustulated setae in the middle, and two more close together on each side between them and the lateral margin. Apical segment bilobed, with two setae on the dorsum of each lobe and two on the venter. Venter of apical sternites as shown in figure 3.

*Measurements.*

	Female.		Male.	
	Length.	Width.	Length.	Width.
Head	0.54	0.44	0.53	0.35
Prothorax	0.09	0.32	0.09	0.25
Metathorax	0.16	0.39	0.16	0.3
Abdomen	1.23	0.56	1.18	0.43
Total	2.02 mm.		1.96 mm.	

*Holotype*.—A male.

Described from males and females taken by the writer off *Antidorcas marsupialis* Zimm. (springbok) at Onderstepoort on the 25th July, 1930. This species is closely related to *T. acyrcus* Bedf. and *T. lerouxi* Bedf. From both these species the females can be distinguished by the apical sternites and the males by the genitalia. The female of *T. lerouxi* also has the forehead more deeply emarginated in front.

FAMILY PHILOPTERIDAE Burmeister.

Genus OTIDOCOCUS nov.

This genus is established for the reception of a new species found on *Choriotis kori* Burch. (giant bustard) at Kwambonambi, Zululand, on the 20th March, 1921.

*Head* almost as long as wide; forehead rounded, wider behind than in front, with a marginal band. Trabeculae very small. Antennae 5-jointed, similar in both sexes, except that the first segment of the male is slightly larger. Eyes present. Mandibles situated in a line with the antennae. Oesophageal sclerite and glands present. Temples rounded.

*Prothorax and pterothorax* wider than long, with the lateral margins rounded.

*Abdomen* oval with tergal plates, these being interrupted in the middle by a narrow clear space on some of the anterior segments; these plates are duplicated on some of the median segments in a similar manner to those of *Neophilopterus*, and in the male there is a median plate beneath the transverse plates on the median segments. Spiracles present on segments ii to vii. Male genitalia with the basal plate fairly broad and of medium length.

*Otidococcus dimorphus* nov. sp.

(Figs. 4, 5, 7b.)

FEMALE.—*Head* pale brown, except the temples, which are very slightly darker. On the venter there are three setae on each side a short distance behind the anterior margin, another one further back close to the first lateral seta and one close to the antennal sinus. Gular plate indistinct.

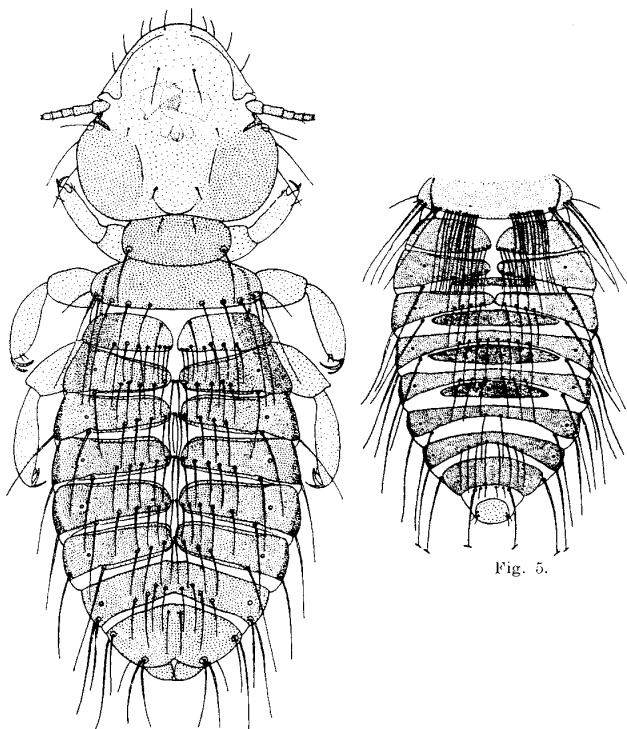


Fig. 4.

Fig. 4.—*Otidocetus dimorphus* nov. sp., female.

Fig. 5.—*Otidocetus dimorphus* nov. sp., metathorax and abdomen of male.  
G.A.H.B., del.

*Pronotum* with two short setae, one above the other, on each side of the meson in front and a long one on each side behind.

*Pterothorax* with six long setae on each side on the posterior margin, the outer one being the shortest. On the venter there are two setae between the mid coxae and four more in a line beneath them.

*Abdomen* with plates and setae on the dorsum as shown in figure 4. Sternites i to v each with a narrow median transverse band and a single row of setae. Sternites vii and viii with a large brown plate, which is widest on the latter sternite; on the plate there are three pustulated setae on each side of the meson.

MALE.—*Head* and *prothorax* as in the female. *Pterothorax* with sixteen long setae on each side on the posterior margin.

*Abdomen* with the tergites as shown in figure 5. Sternites i to iv each with a narrow median transverse band and a single row of setae. Sternites v and vi with a large transverse plate. On the plate there is a single row of about seven pustulated setae situated a short distance from the posterior margin. Joining this plate there is a slightly paler triangular plate which extends backwards to the base of the apical segment; on this plate there are two pustulated setae, one above the other, on each side. On the eighth sternite there are two setae on the posterior margin—one on each side of the plate, and on the ninth sternite there are two long setae in front, four short ones in a row in the middle, and four more on each side on the posterior margin. Male genitalia as shown in figure 7b.

Measurements.

	Female.		Male.	
	Length.	Width.	Length.	Width.
Head .....	0.60	0.74	0.60	0.64
Prothorax .....	0.17	0.40	0.17	0.36
Pterothorax .....	0.15	0.59	0.15	0.55
Abdomen .....	1.36	0.91	1.1	0.76
Total .....	2.37 mm.		2.02 mm.	

*Holotype*.—A female.

*Deggeiriella unicolor* (Nitzsch), described from specimens taken off *Otis tarda*, does not appear to be in any way related to the above species.

Genus OTILIPURUS NOV.

*Head* slightly longer than wide; forehead semi-circular, with a marginal band. Trabeculae very small. Antennae 5-jointed, the third joint of the male with an appendage. Eyes present. Mandibles situated in a line with the antennae. Oesophageal sclerite and glands present. Temples rounded. On each side of the hind head there is a pale line where the occipital bands are usually situated.

*Prothorax* wider than long with the lateral margins rounded. *Pterothorax* with the lateral margins divergent; posterior margin straight, or almost so, pointed in the middle.

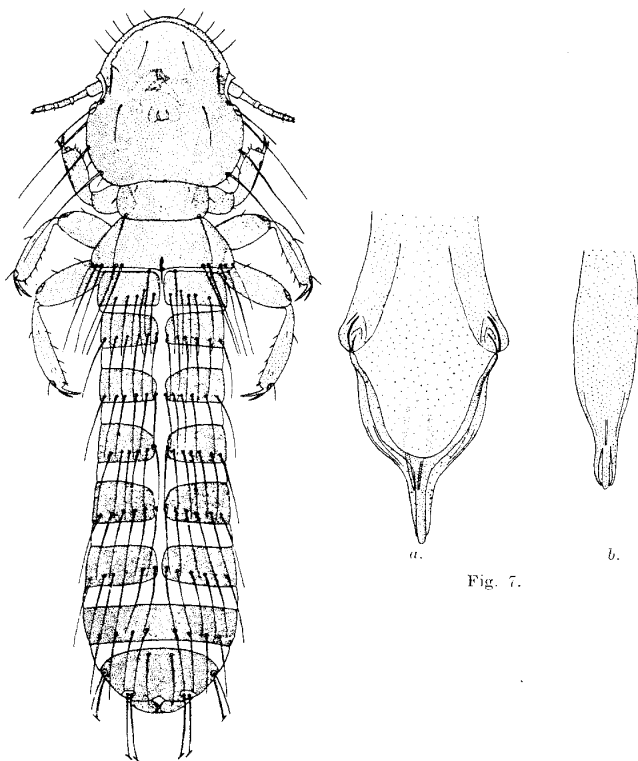


Fig. 6.

Fig. 6.—*Otilipeurus kori* nov. sp., female.

Fig. 7.—Male genitalia of (a) *Otilipeurus kori* nov. sp., and (b) *Otidococcus dimorphus* nov. sp. G.A.H.B., del.

*Abdomen* elongated, widest at either the fifth or sixth segment, with tergal plates; these being divided in the middle as a rule, but are usually complete on the posterior segments, and may be entirely so, except on the first two in the male. Spiracles present on segments ii to vii. Male genitalia with the basal plate very short and very broad.

Species found on Otidae.

*Genotype*.—*Esthiopterum turmale* (Nitzsch.).

*Esthiopterum antilogum* (Nitzsch.) and the new species described below must also be included in this genus.

This genus is closely allied to the preceding genus, from which it can be distinguished by the presence of an appendage on the third antennal segment in the male, the shape of the pterothorax and abdomen, the plates on the tergites, and the male genitalia. *Otilipeurus* is more closely allied to *Lipeurus* than to *Esthiopterum*, and both *O. turmalis* and *O. antilogus* should not have been transferred to the latter genus.

*Otilipeurus kori* nov. sp.

(Figs. 6, 7a.)

**FEMALE**.—*Head* brown; the antennal band surrounding the forehead; the temples and a small area on each side close to the bases of the antennae slightly darker than the rest of the head. On the venter there are three setae on each side a short distance behind the anterior margin, another one further back close to the first lateral seta and one close to the antennal sinus. Plate on gular region absent.

*Pronotum* with a short seta on each side of the meson in front, another one on each lateral margin, and a long one on each side behind. *Pterothorax* with five long setae on each side on the posterior margin.

*Abdomen* with plates and setae on the dorsum as shown in figure 6. Sternites i and v each with a median transverse band and a single row of setae. Sternites vi and vii with a large brown plate, which is widest on the latter sternite and projects backwards onto the eighth sternite; the posterior margin of the plate is concave and the latero-posterior angles pointed; on the plate there are three pustulated setae on each side of the meson.

**MALE**.—Slightly larger and paler than the female. *Head* and *prothorax* as in the female. *Pterothorax* with seven long setae on each side on the posterior margin.

*Abdomen* with the first two tergites similar to those of the female; on the remainder of the tergites the transverse plates are not divided in the middle; on the eighth tergite there are one long and two short setae on each side on the posterior margin instead of two long ones as in the female. Sternites i to v each with a median transverse band and a single row of setae. On the remaining sternites, except the last, there is a large, indistinct longitudinal plate. On the ninth sternite there are two short admedian setae in the middle and several short ones on the posterior margin. Male genitalia as in figure 7a.

Measurements.

	Female.		Male.	
	Length.	Width.	Length.	Width.
Head	0.64	0.59	0.64	0.57
Prothorax	0.13	0.35	0.11	0.35
Pterothorax	0.20	0.53	0.18	0.55
Abdomen	1.69	0.55	1.88	0.71
			(5th segment)	
Total	2.66 mm.		2.81 mm.	

Holotype.—The female.

This species is described from a female and male taken off *Choriotis kori* Burch. (giant bustard) in the Rustenburg District, Transvaal, on the 15th August, 1917.

This species is closely allied to both *O. turmalis* and *O. antilogus*. From both these it can be distinguished, *inter alia*, by the transverse plates on the third to sixth tergites being complete in the male; also the females of both these species are larger than the males. The abdomen of the female from which the drawing was made was not mounted very well; it is most probably wider in the middle than shown in the figure, and resembles that of *turmalis* in shape.

Genus FALCOLIPEURUS nov.

Species elongated, of medium size (length 3 to 5 mm.). Head longer than wide. Forehead either broadly or narrowly rounded in front, with four to six more or less circular incassations on the lateral margins; clypeal signature absent. Eyes present. Hindhead only slightly wider than base of forehead. Mandibles situated between the antennae. Pharyngeal sclerite and glands well developed. On the venter of the hind head there is a longitudinal band on each side extending to the base of the mandible. Gular plate well developed. Antennae 5-jointed, normal in the female; in the male the first joint is enlarged with an appendage on the posterior margin, and the third joint is produced at its apex into a long, curved hook.

Prothorax with sides sub-parallel. Mesothorax fused with metathorax, slightly wider than prothorax. Sternal plate either absent or inconspicuous.

Legs with the mid and hind femora and tibiae elongated.

Abdomen.—Tergites i to vii with well-developed plateral plates; these being usually connected together by less developed median bands; tergite viii usually with a complete transverse plate. Majority of sternites with a small, elongate, sub-lateral plate on each side, and usually with a short median band. Sternites viii and ix of male with an elongated lateral plate on each side. Spiracles present on segments ii to vii. Male genitalia of a distant type, as shown in figures 11 to 13. Species parasitic upon Falconiformes.

Genotype.—*Esthiopterum secretarium* (Giebel).

The following is a list of species, together with their hosts, which must also be included in this genus:—

<i>E. aetheronomum</i> (Nitzsch)	Host: <i>Sarcorhamphus gryphus</i> .
<i>F. africanus</i> nov. sp.	<i>Pseudogyps africanus fullebornei</i> .
<i>E. assessor</i> (Giebel)	<i>Gypagys papa</i> .
<i>F. lineatus</i> nov. sp.	<i>Gyps coprotheres; Terathopius ecaudatus</i> .
<i>E. monile</i> (Nitzsch)	<i>Xeophron monachus</i> .
<i>E. oviceps</i> (Piaget)	?
<i>E. perspicillatum</i> (Nitzsch)	<i>Vultur fulvus</i> .
<i>E. quadriguttatum</i> (Giebel)	<i>Rostrihamus hamatus</i> .
<i>E. quadrioculatum</i> (Nitzsch)	<i>Haliaeetus albicilla</i> .
Syn. <i>E. elongatum</i> (Piaget).	
<i>E. quadripustulatum</i> (Nitzsch)	<i>Vultur cinereus</i> .
<i>E. sulcifrons</i> (Denny)	<i>Aquila albicilla</i> .
<i>E. ternatum</i> (Burmeister)	<i>Carthartes papa</i> .

*E. macrocerum* (Piaget) described from a male taken off *Milvago pezoporus* cannot be placed in this genus. It is a straggler from an ibis.

*Falcolipeurus secretarius* (Giebel).

*Lipeurus secretarius* Giebel. *Ins. Epiz.*, p. 213 (1874).

*Lipeurus secretarius* (Giebel) Piaget, *Les Pédiculines*, p. 292, pl. 24, f. 2 (1880).

*Esthiopterum secretarium* (Giebel) Harrison, *Parasit.*, IX, i, p. 141 (1916).

(Figs. 8, 11, and 14.)

This species, which occurs on *Sagittarius serpentarius* (secretary bird), can be distinguished by the shape of the head (fig. 8) and male genitalia (fig. 11).

Measurements.

	Female.		Male.	
	Length.	Width.	Length.	Width.
Head	0.96	0.78	0.91	0.75
Prothorax	0.28	0.61	0.26	0.61
Metathorax	0.36	1.01	0.35	0.99
Abdomen	2.64	1.20	2.64	1.01
Total	4.24 mm.		4.16 mm.	

*Falcolipeurus africanus* nov. sp.

(Figs. 9, 12, and 15.)

MALE.—Head as shown in fig. 9.

Pronotum brown at the sides, pale in the middle; posterior margin slightly rounded, with a seta on each side near the latero-posterior angle. Metanotum with a brown plate on each side divided in

the middle by a narrow pale line; anterior third narrower than posterior two-thirds; on the posterior margin there is a short seta near the latero-posterior angle, a longer one close to it, and three long setae in a pustule slightly nearer the meson.

*Abdomen*.—Tergites i to v each with a dark brown chitinous plate on each side, these being joined by a median plate, and with two rows of pustulated setae, the anterior row not extending to the lateral margins; on tergite i there is an additional row of four setae in front. Tergites vi and vii with lateral plates and two rows of pustulated setae. Tergite viii with a complete transverse plate and two rows of pustulated setae, the first row consisting of four, the second of eight setae. Apical tergite bilobed, with a small elongated brown spot on each lobe.

Sternites i to vii each with a median transverse row of setae, and a small elongated brown plate on each side. Sternite viii with a patch of long setae on the inner margin of the lateral plate at its base and several in the middle of the segment. Apical sternite with several short setae, two longer ones on the posterior margin, and two more in front of them.

*FEMALE*.—*Head* as in the male. Antennae with the basal and second segments sub-equal in length; third segment the longest; two apical segments sub-equal.

*Thorax* as in the male.

*Abdomen* with tergites and sternites i to vii as in the male, except that the lateral plates on tergites vi and vii are connected by median plates, and on tergite vii there is a small plate on the posterior margin of each of the lateral plates. Tergite viii with the transverse plate almost bisected in the middle by a narrow pale area. Apical tergite bilobed with a V-shaped band on each lobe.

*Measurements.*

	<i>Female.</i>		<i>Male.</i>	
	<i>Length.</i>	<i>Width.</i>	<i>Length.</i>	<i>Width.</i>
Head .....	1.05	0.80	0.99	0.70
Prothorax .....	0.29	0.66	0.29	0.59
Metathorax .....	0.42	1.13	0.42	0.94
Abdomen .....	3.25	1.41	2.88	0.91
<i>Total</i> .....	5.01 mm.		4.58 mm.	

*Holotype*.—A male.

Described from two males and two females taken off *Pseudogyps africanus fulleborni* Erl. (southern white-backed vulture) in the Rustenburg District, Transvaal, on the 5th December, 1916 (Coll. W. Powell). This species can be distinguished by the shape of the head and male genitalia.

*Falcolipeurums lineatus* nov. sp.

(Figs. 10, 13, and 16.)

Two males and two females taken off *Terathopius caudatus* Daud. (bateleur eagle) in the Rustenburg District, Transvaal, on the 7th August, 1917 (Coll. W. Powell); also a male and female taken

off *Gyps coprotheres* Forst. (Cape vulture) in the same district on the 4th October, 1917. The specimens taken off the latter host were probably stragglers. We have seen a female from a *G. coprotheres*, which is very similar to *F. africanus*.

This species can be distinguished from both *F. secretarius* and *F. africanus* by the following characters:—

1. The shape of the head (fig. 10).
2. The lateral plates on the apical sternites of the male (fig. 13).
3. The absence in the male of a patch of long setae on the eighth sternite at the base of each lateral plate. (These are not shown in figs. 11 and 12).
4. The male genitalia (fig. 13).
5. The plates on the seventh and eighth sternites of the females (fig. 16).

It closely resembles *F. quadrioculatus*, but judging by Piaget's figures of *F. elongatus*, which is a synonym of this species, appears to be distinct.

*Holotype*.—A male off *T. caudatus*. *Allotype* from same host.

*Measurements.*

	<i>Female.</i>		<i>Male.</i>	
	<i>Length.</i>	<i>Width.</i>	<i>Length.</i>	<i>Width.</i>
Head .....	0.94	0.70	0.87	0.63
Prothorax .....	0.26	0.75	0.26	0.57
Metathorax .....	0.36	0.80	0.36	0.78
Abdomen .....	2.83	1.06	2.83	0.84
<i>Total</i> .....	4.39 mm.		4.32 mm.	

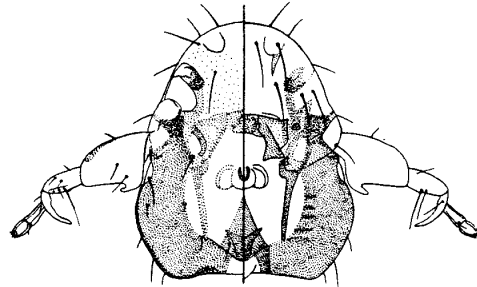


Fig. 8.—Head of *Falcolipeurus secretarius* (Giebel), male.

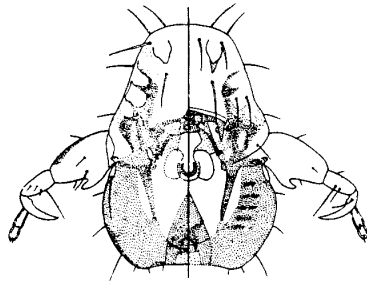


Fig. 9.—Head of *Falcolipeurus africanus* nov. sp., male.

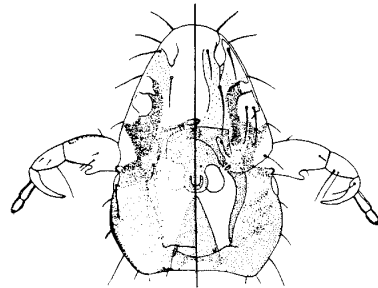


Fig. 10.—Head of *Falcolipeurus livatus* nov. sp., male.  
G.A.H.B., del.

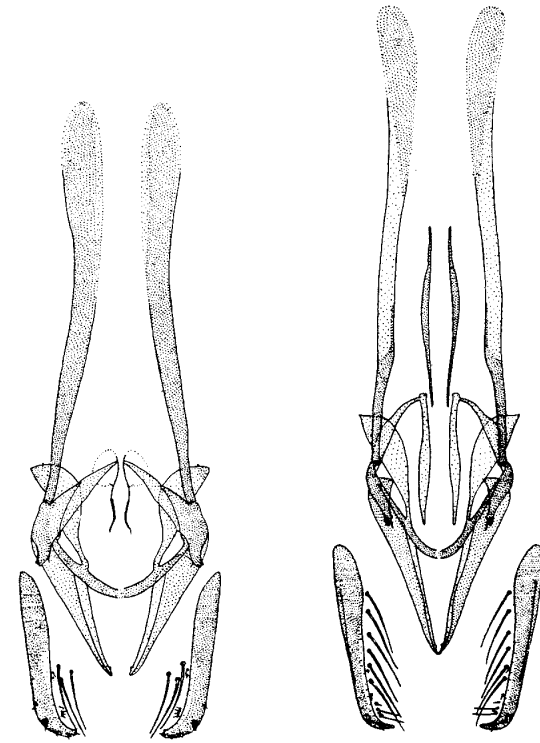


Fig. 11.

Fig. 12.

Fig. 11.—*Falcolipeurus secretarius* (Giebel), male genitalia.  
Fig. 12.—*Falcolipeurus africanus* nov. sp., male genitalia.  
G.A.H.B., del.

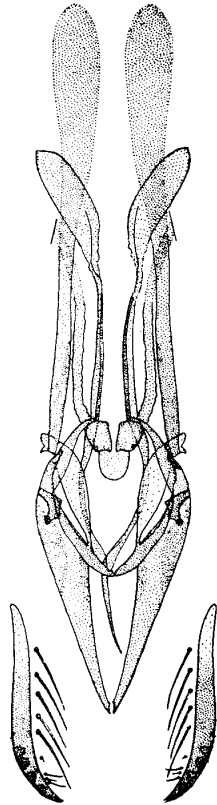


Fig. 13.—*Falcolipeurus lineatus* nov. sp., male genitalia.

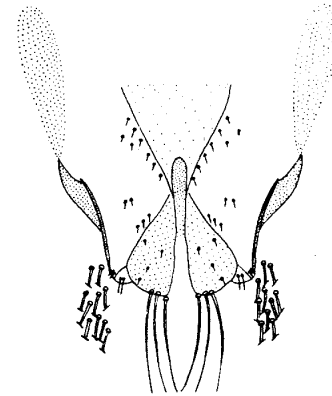


Fig. 14.—*Falcolipeurus secretarius* (Giebel), plates on apical sternites of female.

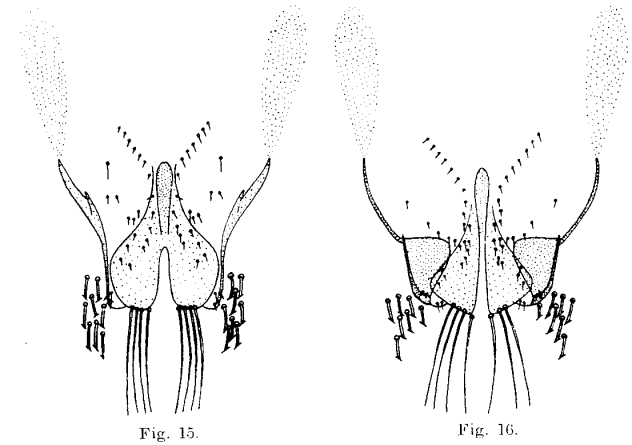


Fig. 15.—*Falcolipeurus africanus* nov. sp., plates on apical sternites of female.

Fig. 16.—*Falcolipeurus lineatus* nov. sp., plates on apical sternites of female. G.A.H.B., del.