

## Descriptions of New Species of Anoplura Parasitic on Antelopes and a Hare.

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### SUBORDER MALLOPHAGA.

#### GENUS BOVICOLA EWING.

*Bovicola* Bedford, 1932, *Rep. Dir. Vet. Serv. and Anim. Indust.*,  
Un. S. Afr., XVIII, p. 361.

*Bovicola pelea* nov. sp.

(Figs. 1-3.)

ONE male and several females taken off Vaal Rhebok, *Pelea capreolus*  
(Behst.), Naauwpoort, C.P., July 29th, 1932 (coll. Austin Roberts).  
*Holotype* the male.

*Male*.—Total length 0.98 mm. Head  $0.26 \times 0.26$  mm. Forehead  
very slightly emarginated in front. Antennae with the first segment  
slightly wider than in the female and nearly as long as the second  
and third segments together. Abdomen widest at the third segment.  
Tergites i and vii each with a single transverse band and a row of  
short setae beneath it. Tergites ii-vi each with two narrow, transverse

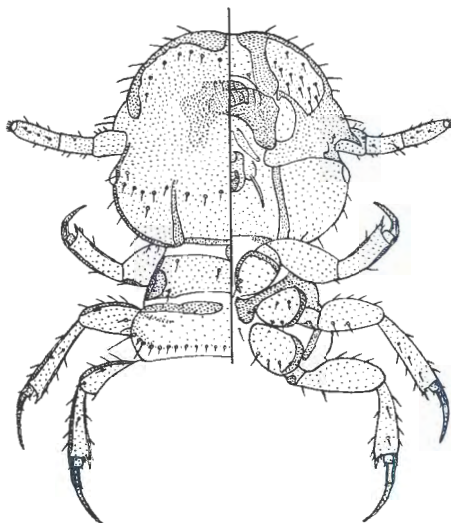


Fig. 1. *Bovicola pelea* nov. sp., dorsum and venter of head and thorax of ♀.  
G. A. H. B. del.

bands, the one being inconspicuous except on tergites ii and vi, and with a transverse row of short setae; on tergite ii the anterior band is emarginated posteriorly. Apical tergite with a small median plate and numerous minute setae. Sternites each with a single broad, transverse band and a row of short setae on the posterior margin. Paratergal plates (=pleurites) only developed on segments i-iv. Male genitalia with the basal plate abruptly constricted near the apex; parameres curved and separated; endomeres elongated, broadest at their bases and pointed at the extremities.

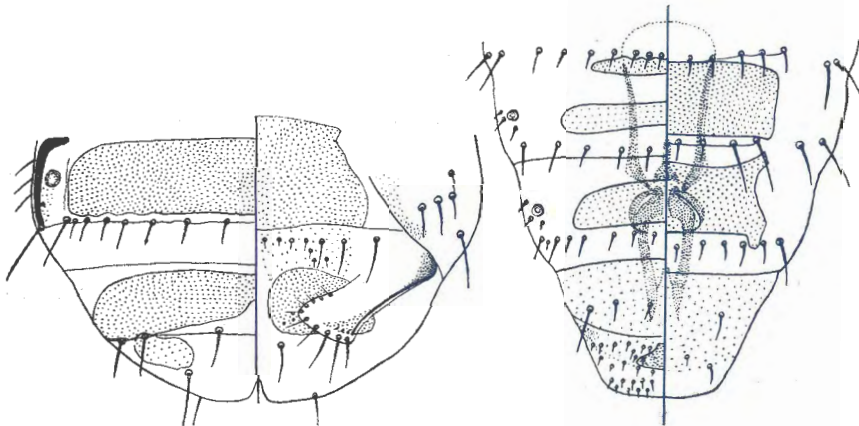


Fig. 2.

Fig. 3.

Fig. 2. *Bovicola pelea* nov. sp., apical tergites and sternites of ♀.  
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Fig. 3. *Bovicola pelea* nov. sp., apical tergites and sternites of ♂.  
G. A. H. B. del.

*Female*.—Total length 1.26 mm. Head 0.33 × 0.35 mm. Differs from the male in having the first antennal segment shorter and narrower; the paratergal plates are well developed on segments i-vii, and there is only a single transverse band on each tergite, except the last which has a small band on each side, and the band on tergite ii is not emarginated posteriorly.

This species can be distinguished by its small size, being the smallest species of *Bovicola* known, also by the male genitalia, gonopophysis of the female and terminal abdominal segments in both sexes. The male resembles *B. painei* (Kellogg and Nakayama) in

having the basal plate constricted near its apex; also in having the transverse band on the second tergite emarginated posteriorly. In *B. painei* the paratergal plates are well developed in the male, and the setae on the abdomen are more numerous in both sexes.

*Bovicola hilli* nov. sp.

(Figs. 4-6.)

One male and three females kindly sent by Mr. Laurence Hill, taken off waterbuck, *Kobus ellipsiprymnus* (Ogilby) in the Umfolosi Game Reserve, Zululand. *Holotype* the male in Mr. Hill's collection.

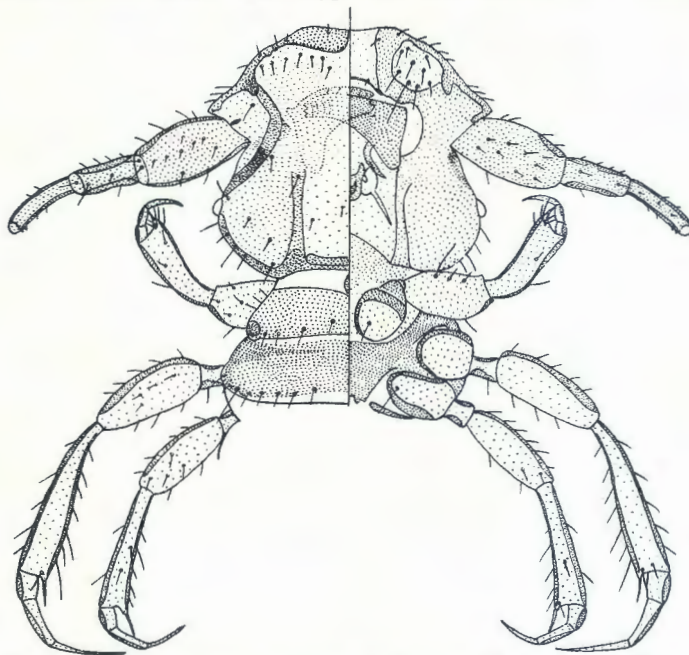


Fig. 4. *Bovicola hilli* nov. sp., dorsum and venter of head and thorax of ♂.  
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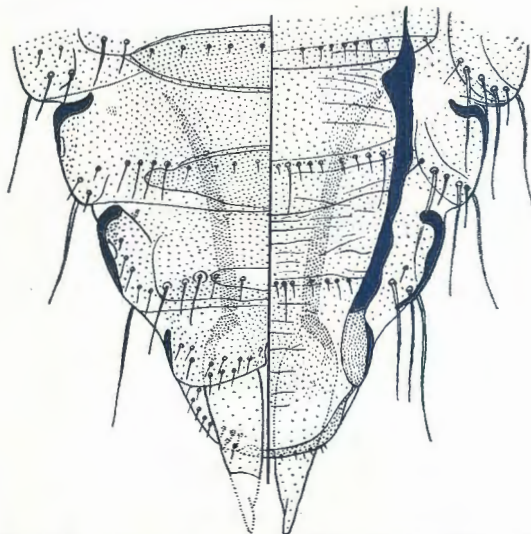


Fig. 5. *Bovicola hilli* nov. sp., apical tergites and sternites of ♂.  
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*Male*.—Total length 2.11 mm. Head  $0.50 \times 0.54$  mm. Forehead slightly emarginated in front. Antennae with the first segment long and broad, the second the shortest. Tibiae and claws of the mid legs slightly longer than those of the hind legs. Abdomen with crenulated lateral margins, widest at the third segment. Tergites and sternites highly chitinous, each with a transverse row of short setae; a well developed longitudinal plate present on the venter on each side of the male genitalia. Genitalia with basal plate wider at the base than apex; parameres small, apparently fused with the endomeres, which are long and straight, and gradually narrowing from base to apex.

*Female*.—Total length 2.14 mm. Head  $0.50 \times 0.54$  mm. Differs from the male as follows: The first antennal segment is the shortest, being slightly shorter than the second segment. Tergites and sternites i-v each with a transverse brown band and a row of short setae; the remainder of the segments being almost entirely brown. Gonopophyses shaped like a boot.

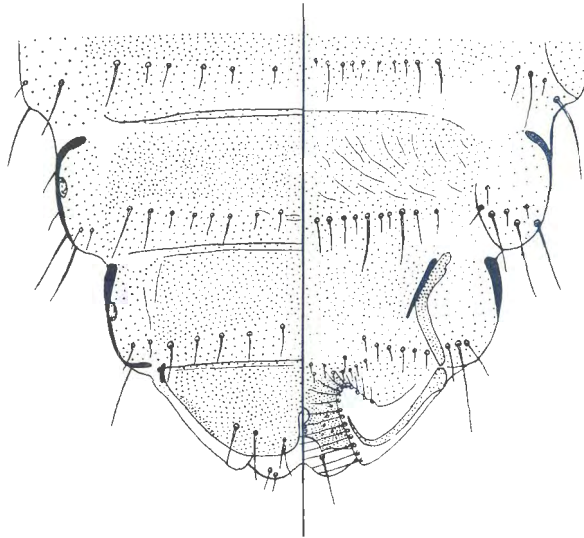


Fig. 6. *Bovicola hilli* nov. sp., apical tergites and sternites of ♀.  
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This species appears to be closely related to *B. puncta* (Piaget), which was described from a female, obviously a straggler, reported to have been taken off a *Lamprolornis* sp.? (starling) in the Leyden Museum. *B. hilli* is the largest species of *Bovicola* known, and the female can be distinguished from that of *B. puncta* in possessing less setae on the margins of the forehead and temples, and the apical tergites and sternites also appear to be slightly different.

GENUS *TRICHOLOIPEURUS* BEDFORD.*Tricholipeurus* Bedford, 1932, *Rep. Dir. Vet. Serv. and Anim.**Indust., Un. S. Afr.*, XVIII, p. 363.

In 1929 I described a new species, *Tricholipeurus aepycerus*, reported to have been taken off an impala, *Aepyceros melampus*, on the Kunene River, South-West Africa. Recently I received several specimens, which prove to be new, collected by Dr. Thomas and Mr. Neitz off the same host in the Kruger National Park, Transvaal. On enquiring from Mr. Austin Roberts whether the western impala was the same species as the eastern form, he informed me that *A. melampus* had a wide range in South Africa and extended from the

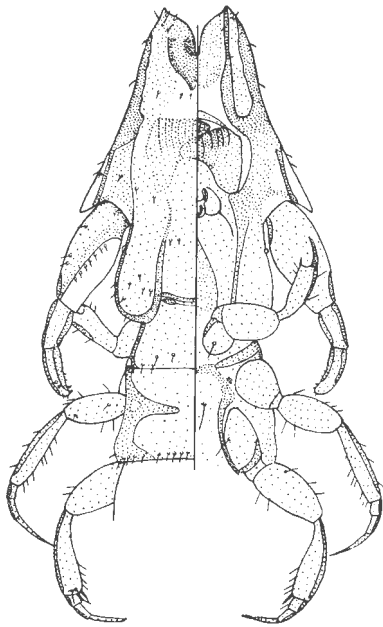


Fig. 7.

Fig. 7. *Tricholipeurus elongatus* nov. sp., dorsum and venter of head and thorax of ♂.

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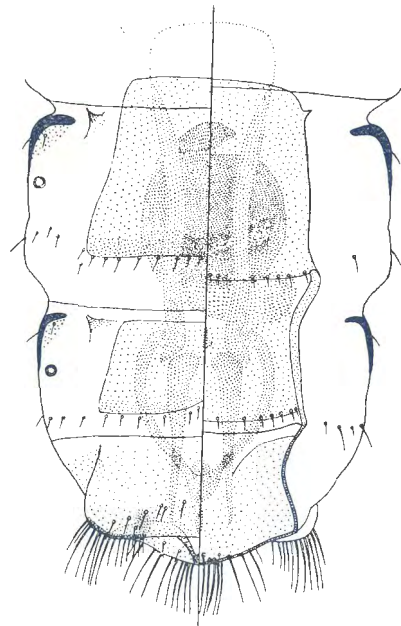


Fig. 8.

Fig. 8. *Tricholipeurus elongatus* nov. sp., apical tergites and sternites of ♂.  
G. A. H. B. del.

east to the west; also that a second species--the Angola impala, *Aepyceros petersi* Boch, occurred in the west, and Captain Shortridge had informed him that he had found this species as far south as the Kunene River. From this it would appear that *T. aepycerus* was taken off *A. petersi* and not *A. melampus*, and that the latter buck is the true host of the new species described below.

*Tricholipeurus elongatus* nov. sp.

(Figs. 7-9.)

*Male*.—Total length 2.76 mm. Head 0.63 × 0.36 mm. Forehead deeply emarginated in front, with a transverse row of only six minute setae behind the clypeal plates. Antennae with the first segment broad, slightly longer than the second and third together; third segment with numerous very minute spines on the inner margin. Legs with the mid tibiae narrower than the fore and hind tibiae, and the claws of the mid legs are slightly longer than those of the hind legs. Abdomen elongated and narrow with crenulated lateral margins. Tergites and sternites each with a largish median plate,

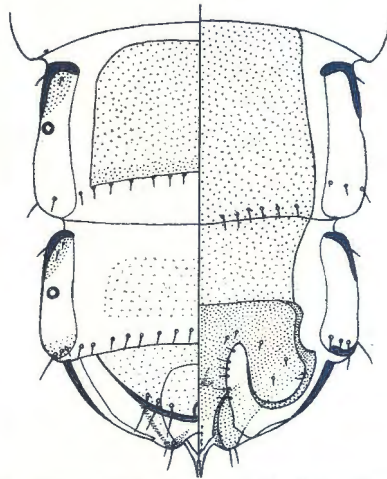


Fig. 9. *Tricholipeurus elongatus* nov. sp., apical tergites and sternites of ♀.  
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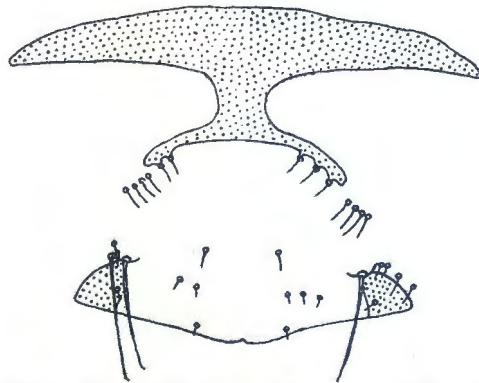


Fig. 10. *Haemodipsus africanus* nov. sp., genital region of ♀.  
G. A. H. B. del.



also a transverse row of short setae, except on sternite i; tergite i with a narrow marginal band; tergites ii to vi each with a comma-shaped plate in front of each spiracle, and close to these and nearer the middle there is a small, forked chitinous marking. Genitalia with the parameres joined, forming a pseudopenis which is asymmetrical at the junction of the arms; endomeres long and straight, wider at their bases than at their apices, above them there is a small median plate.

*Female*.—Total length 2.8 mm. Head  $0.63 \times 0.36$  mm. Differs from the male in having the first antennal segment shorter and narrower, and the median bands on sternites v to viii are fused. Gonopophyses shaped like a boot.

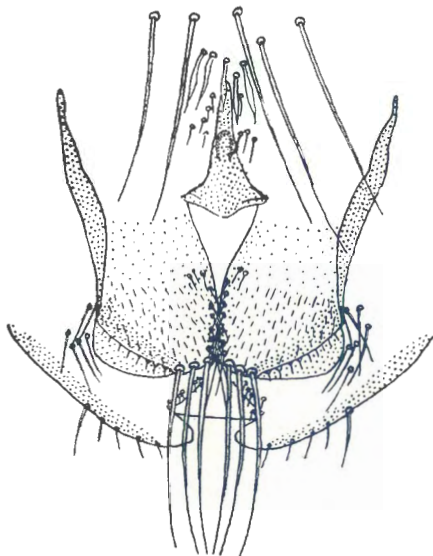


Fig. 11. *Linognathus lewisi* nov. sp., genital region of ♀.  
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*Holotype* a male.

*T. clongatus* is the longest species known. It resembles both *T. aepycerus* Bedford and *T. lerouxi* Bedford in having the forehead deeply emarginated in front. From both these and the other known species it can be distinguished by having the temples projecting backwards on to the prothorax, also by the apical tergites and sternites and male genitalia.

#### SUBORDER SIPHUNCULATA.

#### GENUS HAEMODIPSUS ENDERLEIN.

*Haemodipsus* Bedford, 1932, *Rep. Dir. Vet. Serr. and Anim. Indust., Un. S. Afr.*, XVIII, p. 407.

*Haemodipsus* Ferris, 1932, *Contrib. Toward a Mon. Suck. Lice. Stanford Univers. Pub. Univers. Series. Biol. Series, II, No. 5*, p. 59.

*Haemodipsus africanus* nov. sp.

(Fig. 10.)

A single female taken off *Lepus zuluensis* Thos. and Schw., Jericho, Transvaal.

*Female*.—Total length 1.9 mm. Resembles *H. tyriocephalus* (Burm.) of which Ferris (1932) has given an excellent figure, in the shape of the head, thorax and abdomen, also in the chaetotaxy. From this species it can be distinguished in possessing paratergal plates (=pleurites) on the third to sixth segments as in *H. ventricosus* (Denny) and *H. setoni* Ewing. They are very small, merely forming a slight tooth as in *H. ventricosus*. Sternal plate on the thorax transverse and narrow, similar to that of *H. ventricosus*. The genital plate (Fig. 10) is slightly more developed than in the other species, and the gonopophyses even less developed, being merely indicated by a row of short setae on each side below the genital plate.

GENUS *LINOGNATHUS* ENDERLEIN.

*Linognathus* Bedford, 1932, *Rep. Dir. Vet. Serv. and Anim. Indust. Un. S. Afr.*, XVIII, p. 408.

*Linognathus*, Ferris, 1932, *Contrib. Toward a Mon. Suck. Lice. Stanford Univer. Pub. Univer. Series. Biol. Series*, 11, No. 5, p. 66.

*Linognathus lewisi* nov. sp.

(Fig. 11.)

Three females taken off *Gazella thomsoni*, Gunth., Naivasha, Kenya Colony (coll. E. A. Lewis).

This species belongs to a small group of forms which includes *L. pithodes* Cummings, *L. bedfordi* Ferris and *L. spicatus* Ferris, all of which Ferris (1932) has given excellent figures. They are all parasitic on antelopes and very closely related to each other. They may be distinguished in having a short, broad head, broad thorax and abdomen, and numerous lanceolate setae on the dorsum and venter of the abdomen. Both *L. bedfordi* and *L. spicatus* are only found on the bare parts of their hosts, such as the thighs, axillae and eyelids, and it is quite possible that the other species belonging to this group have similar habits.

*L. lewisi* resembles both *L. pithodes* and *L. bedfordi* in having the claws of the anterior legs more slender than the others, whereas in *L. spicatus* they are stouter and almost the same size as those of the mid and hind legs.

*Female*.—Total length 1.6 mm. Head and thorax as in the other species included in the group. Abdomen with the lanceolate setae slightly more numerous than in *L. pithodes* and *L. bedfordi*. Genital plate widened at the apex, whereas it is linear in *L. bedfordi* and absent in the other two species; above the plate there are five long setae. Gonopophyses touching in the middle, with three long setae at their rounded extremity; at their apices there is a small plate on each side, these being absent in the other species.