

A NEW HIRSTIONYSSINE MITE FROM *TRICHYS LIPURA* GUNTHER

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The following description of a new hirstionyssine mite is based on material collected by one of us (A. F.) from a preserved specimen of *Trichys lipura* Gunther in the Collections of the British Museum (Natural History), London.

Family Dermanyssidae Kolenati s. lat.  
subfamily Hirstionyssinae Evans & Till.

Genus **Ancoranyssus** gen. nov.

*Diagnostic characters* : Cheliceral shafts long, slender and fused proximally ; movable digit with two denticulate hyaline processes ; dorsal setae and arthrodistal processes absent. Corniculi membranous ; deutosternum with six transverse rows of denticles (two to four denticles per row). Pedipalp tibia with only 10 setae.

Dorsal shield restricted to anterior half of the idiosoma, hypotrichous bearing only 19 pairs of setae. Anterior region of the idiosoma regionally heavily sclerotized. Genital shield with one pair of setae ; anal shield normal.

Legs I markedly modified for attachment to host, genu with a large two-pronged ventrally directed hook opposing two denticulate processes on the ventral surface of the femur. Anterior spines present on coxae II-IV ; coxa II with postero-ventral ridge and coxa III with a postero-ventral blunt spur. Segmental chaetotaxy of legs II-IV normal for the subfamily.

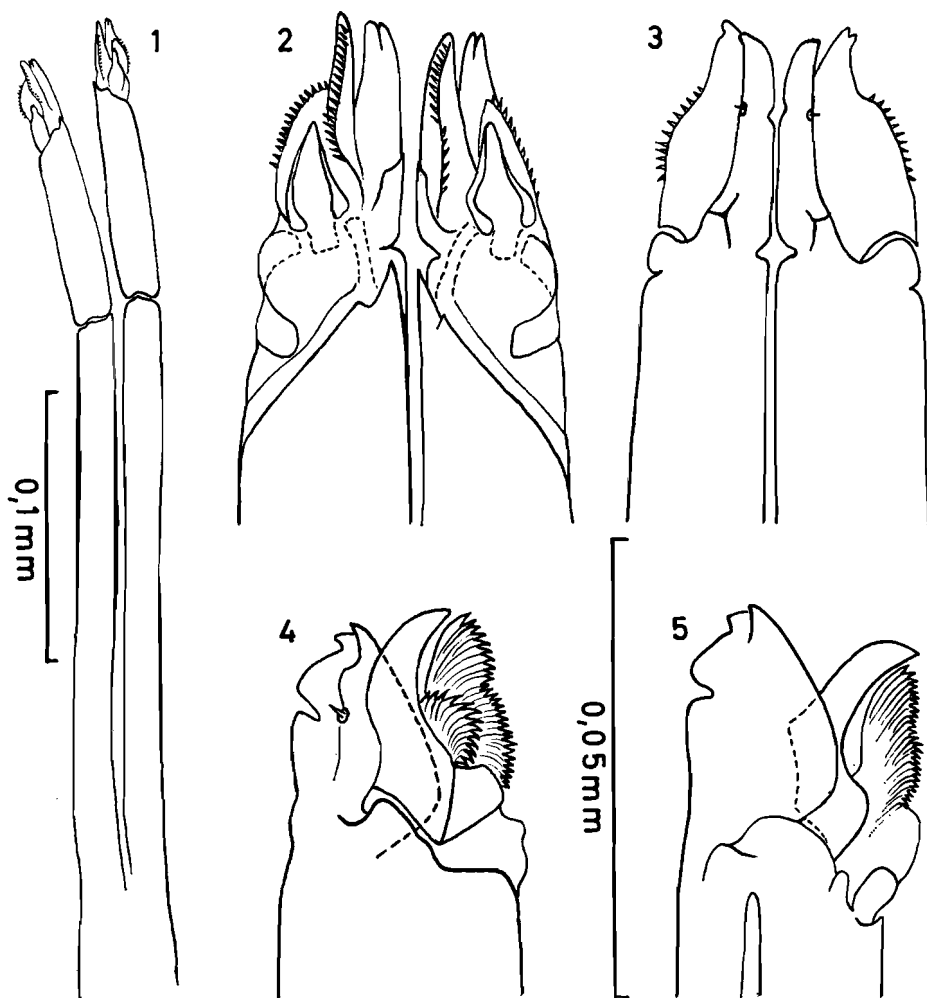
Only female known.

Type : *Ancoranyssus trichys* sp. nov.

**Ancoranyssus trichys** sp. nov.

*Female* : Chelicerae (figs 1-5) long and slender with the shafts fused proximally. Segment I more than twice the length of segment II which terminates in the fixed

digit. Mesial faces of the shafts channeled and closely applied along their entire length. Fixed digit, relatively broad and flattened laterally, has a hyaline dentate ventral margin and a minute *pilus dentilis*. The movable digit is articulated ventro-laterally to the fixed digit and comprises a strongly sclerotized hook-like member projecting dorsally and two hyaline processes whose margins are fringed

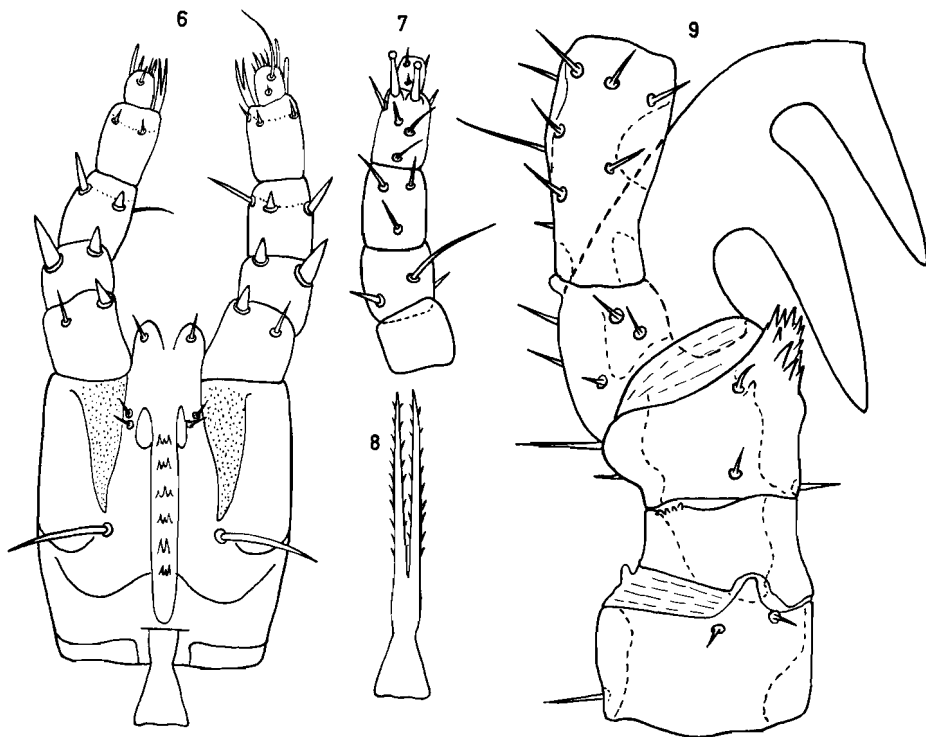


FIGS. 1-5 : *Ancoranyssus trichys* sp. nov., female. Chelicerae (1) ; and digits in ventral (2), dorsal (3), external (4) and internal (5) views.

with minute denticles : the external process is smaller than the internal. A dorsal lyrifissure is present but apparently the lateral fissure and dorsal seta are absent.

The capitular setae are long and simple. The hypostome is clearly differentiated from the basis capituli and bears three pairs of microsetae (fig. 6). Deutosternum with six transverse rows of denticles with from two to four denticles per

row. Corniculi in the form of membranous lobes; labrum slender and fringed with simple processes distally. Tectum capituli tongue-shaped, margin smooth and extending to about the level of the anterior margin of the palpgenu. Pedipalps with five free segments and a two tined apotele (fig. 7). Chaetotaxy of segments excluding tarsus, 2-5-6-10; palptibia and tarsus deficient. Seta  $v_2$  on trochanter,  $al$  and  $pl$  on femur and  $al_2$  on genu are short and spinose.



FIGS. 6-9 : *Ancoranyssus trichys* sp. nov., female. Venter of gnathosoma (6); dorsal view of pedipalp (7); tritosternum (8); internal (paraxial) view of trochanter, femur, genu and tibia of leg I (9).

Idiosoma (620  $\mu$  in length and 288  $\mu$  in breadth) elongate-oval in outline with posterior margin concave. Dorsal shield (approx. 340  $\times$  180  $\mu$ ) restricted to anterior half of the idiosoma. Chaetotaxy markedly hypotrichous and comprising only 19 pairs of simple setae of which 13 pairs (including verticals) are arranged sub-marginally (fig. 10). Five (rarely only 4 setae on one side) pairs of setae are situated on the integument flanking the dorsal shield which is heavily sclerotized regionally as shown in fig. 2. The remainder of the dorsum bears 9 pairs of setae, sometimes arranged asymmetrically, giving a complement of 33 pairs of setae for the dorsum of the idiosoma. The vertical region of the shield is flanked by strongly sclerotized strips which are the dorsal extensions of the podal shields between coxae I and II. Each strip terminates as a distinct dorsal spur.

Tritosternum bipartite laciniae relatively broad and with denticulated margins (fig. 8). Sternal shield strongly sclerotized, of characteristic outline and with a pair of strong spurs antero-laterally (fig. 11). It bears one pair of setae (st. 2) and two pairs of pores. Sternal setae I are situated on weakly sclerotized cuticle anterior to the shield and setae 3 & 4 on the integument posterior to the shield. The genital shield bears the genital setae only. Anal shield suboval and with three setae, paranals anterior to the anal opening, cribrum distinct. Chaetotaxy of the

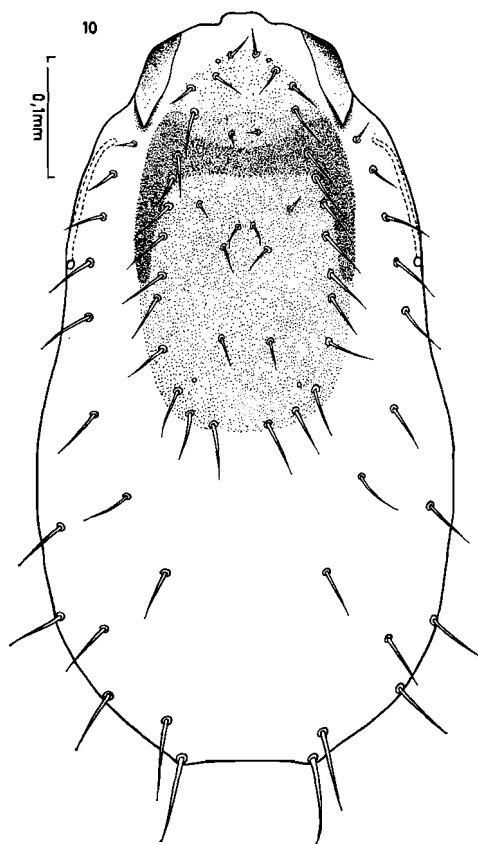


FIG. 10 : *Ancoranyssus trichys* sp. nov. Dorsal view of female.

opisthogaster variable but normally with 8 pairs of setae. Peritrematal shield free, peritreme divided by five or six transverse septa and extending to about the level of the middle of coxa I.

All legs six-segmented with well-developed ambulacra ; circumsegmental fissures present on femora I-IV and on tarsi II-IV, proximal fissure on tarsus I restricted to ventral surface ; isolated dorsal fissure of tarsi II-IV in the distal half of the segment. Leg I strongly modified to form a grappling organ which comprises a large ventrally directed two-pronged hook on the genu opposing two ven-

tral denticulated processes on the distal third of the femur (fig. 9). The chaetotaxy of the coxa (2 setae), trochanter (6 setae) and tibia (2-3/2,2/1-2) is normal for the subfamily but both the femur (? 8-9 setae) and the genu (9 setae) are hypo-

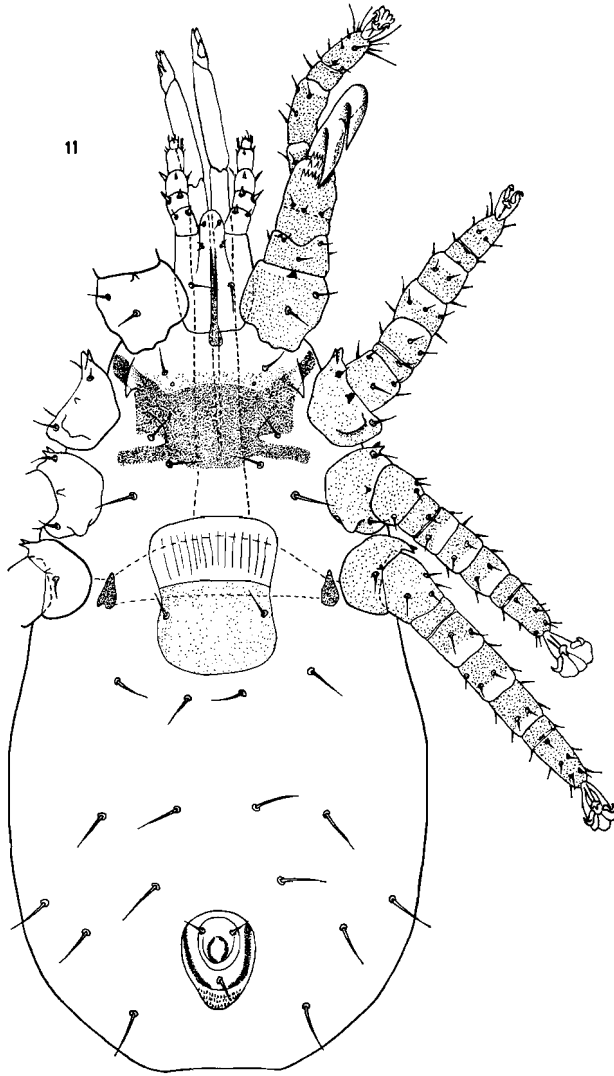


FIG. 11 : *Ancoranyssus trichys* sp. nov. Ventral view of female.

trichous. Coxa I has its internal (paraxial) margin produced into two slender hyaline processes. Legs II-IV are normal in form and have simple setae. Their segmental chaetotaxy is as follows :

	Leg		
	II	III	IV
coxa	2	2	1
trochanter	5	5	5
femur	2-5/3-1	6	6
genu	2-3/1,2/1-2	2-2/1,2/1-1	2-2/1,3/0-1
tibia	2-2/1,2/1-2	2-1/1,2/1-1	2,1/1,3/1-2
tarsus	18	18	18

The unpaired seta *md* on the tarsi is anterior in position. Coxa II has two stout anterior spines and a postero-ventral ridge while coxa III has a blunt postero-ventral spur.

*Habitat and Locality* : 25 females attached to the ventral surface of the body and the internal surface of the legs of *Trichys lipura* Gunther, Nabai River, Baram-Sarawak (B. M. 07-28-3).

The holotype and 14 paratypes are deposited in the Collections of the British Museum (Natural History), London, 2 paratypes in the Collections of the U.S. National Museum, Washington, 2 paratypes in the Institut royal des Sciences naturelles de Belgique and 6 paratypes in the Collection of A. FAIN.

#### Discussion.

In their recent discussion of the classification of the Dermanyssidae s. lat., EVANS & TILL (1966) considered one of the most significant adaptive trends in the Hirstionyssinae to be the development of spur-like structures on the coxae of legs II-IV and, more rarely, on the genua and tibiae of legs I and II. These processes which may be of setigerous or non-setigerous origin are possibly used by the mite for attachment to the host or for progressing through its fur. Of the four genera included by EVANS & TILL in the subfamily, members of *Echinonyssus* Hirst and *Trichosaurolaelaps* Womersley are the best equipped with spur-like processes. In *Echinonyssus* the anterior spine of coxa II is enormously enlarged and forms a massive anteriorly directed hook which may extend beyond the level of the anterior margin of the idiosoma while in *Trichosaurolaelaps* stout spurs, the majority of which are hypertrophied setae, occur on the genua and tibiae of the anterior pairs of legs. There is no definite evidence that the spurs in these two genera act as attachment organs. The massive bi-pronged hooks on genua I of *Ancoranyssus*, however, function as fixation organs and are embedded in the skin of the host. The increased sclerotization of the anterior region of the idiosoma which is particularly evident in the presence of sclerotized bars extending dorsally between coxae I and II, and the regionally heavy sclerotization of the dorsal and sternal fields, gives rigidity to this region of the body and affords attachment sites for

the strong musculature required to control the movements of the enlarged first pair of legs.

In common with other hirstionyssines, *Ancoranyssus* exhibits hypotrichy of the dorsal shield and a tendency for a reduction in the number of setae on the tibia and tarsus of the pedipalp. The fusion of the cheliceral shafts proximally is unique among members of the subfamily.

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#### REFERENCE

- EVANS (G. O.) & TILL (W. M.), 1966. — Studies on the British Dermanyssidae (Acari : Mesostigmata). Part II. Classification. — Bull. Br. Mus. nat. Hist. Zool., **14** : 107-370.
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