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THE GENUS **TEINOCOPTES** Rodhain, 1923  
(Acari, Astigmata, Teinocoptidae) IN MALAYSIA  
AND INDONESIA. DESCRIPTION  
OF THREE NEW SPECIES<sup>(1)</sup>

by A. FAIN<sup>(2)</sup>, F.S. LUKOSCHUS<sup>(3)</sup> and M. NADCHATRAM<sup>(4)</sup>

**Abstract** : Three species of *Teinocoptes* Rodhain, 1923 were known so far from Malaysia and Indonesia. In this paper three new species are described from these countries : two from *Eonycteris spelaea* in Malaysia (*T. pahangensis* sp.n. and *T. eonycteris* sp.n.) and one (*T. brevior* sp.n.) from an unknown host in Indonesia.

During a stay in the Institute for Medical Research at Kuala-Lumpur, F.S.L. had the possibility to investigate a number of specimens of the cave fruit bat, *Eonycteris spelaea*, which had been captured by Dr. A. Rudnick, Resident Coordinator of the Hooper Foundation, and conserved in the Institute of Kuala-Lumpur.

Two new species of *Teinocoptes* Rodhain, 1923 (Teinocoptidae) were found on these bats, they are described herein. A third new species is also described here, it was collected from an unknown host in Indonesia.

All the measurements are in microns ( $\mu$  m). Holotypes deposited in the British Museum (Nat. Hist.) except that of *Teinocoptes brevior* which is in the U.S. National Museum, Washington.

(1) Déposé le 2 décembre 1981.

(2) Institut de Médecine Tropicale, 155, Nationalestraat, B-2000 Antwerpen, Belgium.

(3) Laboratorium voor Aquatische Oecologie, Katholieke Universiteit Nijmegen, Toernooiveld, Nijmegen, Nederland.

(4) Division of Acarology, Institute for Medical Research, Kuala Lumpur 02-14, Malaysia.

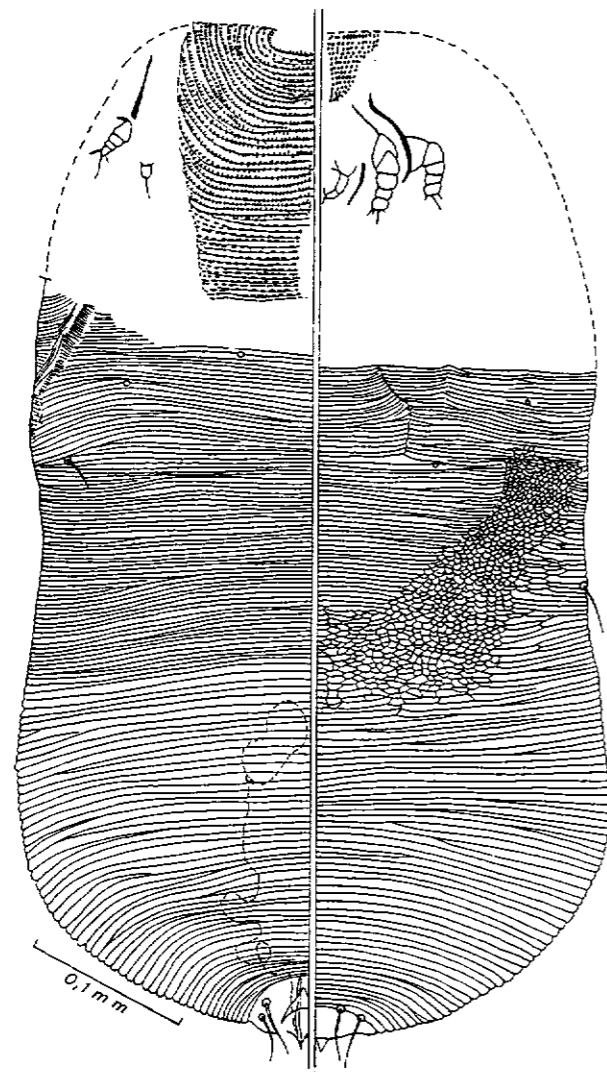


FIG. 1. — *Teinocoptes pahangensis* sp. n. Female in ventral view (left) and dorsal view (right).

## TEINOCOPTIDAE FAIN, 1959

### *Teinocoptes* RODHAIN, 1923

#### 1. *Teinocoptes asiaticus* FAIN & DOMROW, 1961

This species was described from the lesser dog-faced fruit bat, *Cynopterus brachyotis* (Pteropidae, Pteropinae) in Selangor, Malaysia. It has also been recorded from the typical host in Philippines Is. (Mitchell and Fain, 1963) and from *Macroglossus* sp. in Malaysia (Fain & Nadchatram, 1962). This species is characterized by the great size (900  $\mu$  long) and the very elongate shape of the body and the great development of the scaly area on the body covering most of the hysteronotum. The larvae of this species bear on the dorsum 65 to 80 triangular scales (Fain & Nadchatram, 1962).

#### 2. *Teinocoptes malayi* FAIN & NADCHATRAM, 1962

This species was described from the long-tongued fruit bat *Macroglossus* sp., (Pteropidae, Macroglossinae), Ulu Kelantan, Malaysia. It differs from *T. asiaticus* mainly by the much smaller size of the scaly area of dorsum and the complete absence of scales on the dorsum of the larva.

Additional material of this species (8 females) have been found by F.S.L. from *Eonycteris speleae*, Limestone Cave, Raub, Pahang, Malaysia.

#### 3. *Teinocoptes pahangensis* sp. n.

This species is represented only by females and larvae.

*Female* (Fig. 1): Holotype 750 long and 470 wide. In 3 paratypes 840  $\times$  490, 800  $\times$  480 and 740  $\times$  450. All these specimens, except the last one, are ovigerous and some eggs contain a fully developed larva. *Venter*: Cuticle soft and completely striated except in a large part of the anterior region corresponding to the post-vulvar area, which bears heavily sclerotized and finely verrucose striations. Besides, the anterolateral regions bear a narrow longitudinal area with small spinelets. *Dorsum*: There is a large U-shaped median scaly area extending to the lateral regions of

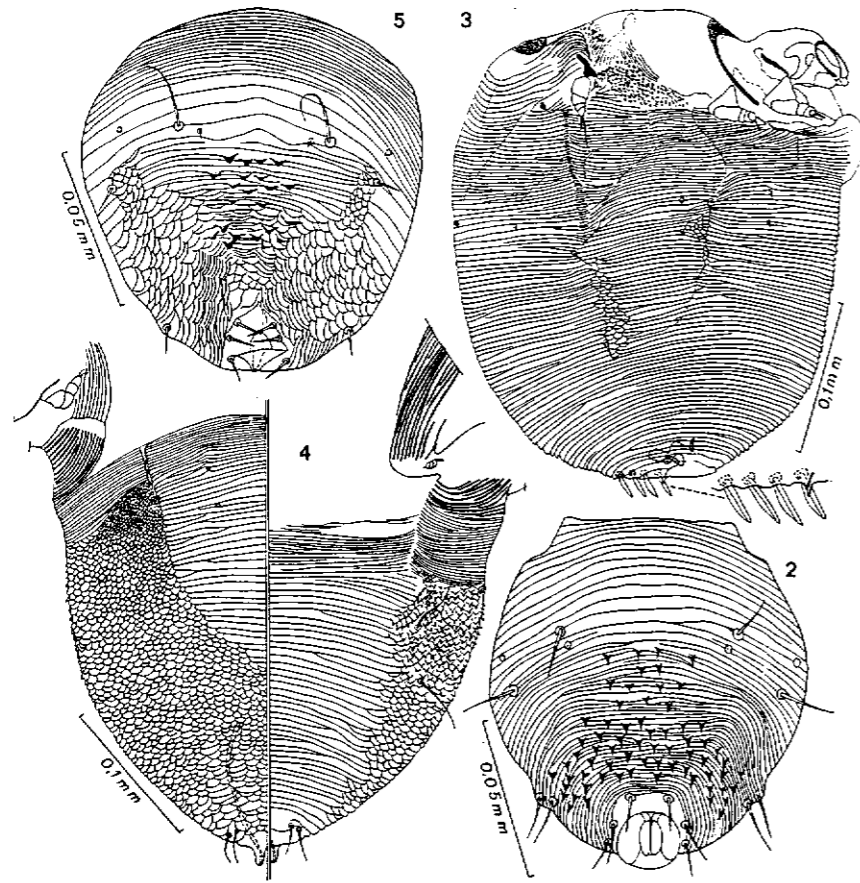


FIG. 2-5. — 2. *Teinocoptes pahangensis* sp. n. Larva, dorsally ;  
3. *Teinocoptes eonycteris* sp. n. Female in lateral view ;  
4-5. *Teinocoptes brevior* sp. n. ; 4. Female (dorsum at left,  
venter at right) ; 5. Larva, dorsally.

dorsum. This area is situated in the median part of hysteronotum. Anus terminal surrounded by 4 pairs (2 dorsals and 2 ventrals) of thin setae 40-50 long. Bursa opening at the apex of a small conical copulatory papilla situated dorsally behind anus. The bursa is 350-400 long (total length). Legs as in other species of genus. Legs III well developed, resembling leg II. Legs IV vestigial, represented by a cuticular surelevation bearing a short cylindrical seta.

*Larva* (fig. 2) : A fully developed larva still contained in the egg is 120 long and 90 wide. Dorsum striated bearing approximately 70 triangular scales placed in roughly 8 transverse rows. Venter without scales.

*Host and locality* : Cave fruit bat, *Eonycteris spelaea*, (Pteropidae, Macroglossinae) Limestone Cave, Raub, Pahang, Malaysia 13.V.1979. Bat collected by A. Rudnick. Holotype and 4 paratypes female.

*Remark* : This species differs from *T. asiaticus* by the much smaller size of the hysteronotal scaly area. It is distinguished from *T. malayi* in the female by the shape of the postvulvar area which is larger and more sclerotized, the more ellipsoidal shape of the body and the greater length of the bursa. The larva is clearly distinguished by the presence of numerous dorsal scales (without scales in *T. malayi*).

#### 4. *Teinocoptes eonycteris* sp. n.

This species is only represented by the holotype.

*Female* (fig. 3) : Holotype broadly ovoid 306 long and 249 wide, it contains 2 immature eggs 130 long and 90 wide. (This specimen is mounted in lateral position.) Dorsum without scaly area. The lateral surfaces of body bear two small scaly areas, one 75 long and 6 to 18 wide, the other 30 long and 12 wide. Post-vulvar region with a small punctate area and a small number of minute triangular scales. A well developed verrucose area is present in front of leg III. There are 4 pairs of perianal setae 15 long, thick and partly membranous. There is a small dorso-terminal copulatory cone 10 long. Bursa with 7-8 loops, 30 long in straight line, and about 120 in total length. Legs as in other species of the genus. Leg IV is vestigial and represented by a very small papilla bearing a short (5) rodlike seta.

*Host and locality* : As for *T. pabangensis*. Holotype in B.M.

*Remark* : This species differs from *T. eidoloni* Fain, 1959 and *T. ituriensis* Fain, 1967 by the much smaller size of body, the different shape and length of the perianal setae, the presence of a punctate area behind vulva and of a verrucose area in front of leg III. It is distinguished from *T. auricularis* Fain 1959 by the much smaller size of the perianal setae, the presence of a punctate area behind the vulva and of a verrucose area in front of leg III.

##### 5. *Teinocoptes brevior* sp. n.

This species is represented by a single female, in bad condition.

*Female holotype* (fig. 4) : The anterior part is crushed and difficult to study. Length of body about 390, width 270. Dorsum with an U-shaped scaly area covering the greatest part of dorsum. This scaly area extends laterally reaching ventro-lateral surfaces of body. Behind vulva there is a broad area where the striations are thick and sclerotized. Anus termino-ventral with 4 pairs of thin setae 25-30 long. Copulatory papilla conical, 15 long, situated dorsoterminally. Legs III smaller than legs II, vestigial legs IV not observed. Epimeres II long, slightly recurved outwards.

*Larva* (fig. 5) : The holotype contains a completely developed larva still enveloped in the egg shell. This larva is 123 long (gnathosoma included), 108 wide. Dorsum with 2 large postero-lateral scaly areas and 20-25 small median scales.

*Host and locality* : This species has been found in the fur of a rat (*Rattus hoffmanni*), from Van Peenen, Indonesia (animal n° 502095 in Smithsonian Institute, Washington, USA), but this host is obviously accidental the true host is certainly a frugivorous bat.

*Remark* : By the great length of the epimeres II and the small development of legs III this species recalls more genus *Chirobia* than *Teinocoptes*. We maintain it provisionally in the latter genus mainly owing to the terminal situation of anus and the elongate shape of the body. New specimens in better condition are necessary before a decision can be taken concerning the true generic status of this species.

##### 6. *Teinocoptes* spp.

In our collection from *Eonycteris spelaea* from Limestone Cave in Raub, Malaysia we found two different species of males (type A and type B). Owing to the mixing of at least three different species of *Teinocoptes* on the same bat it is not possible to know to which females these males belong. These males differ from each other mainly by the shape and the number of cuticular scales. In *type A* the cuticle between coxae II and III bears ventrally 4 pairs of very short rounded scales and 2 pairs of small more external triangular scales and the propodonotum is devoid of scales. In *type B* the area between coxae II-III bears only 4 pairs of elongate and pointed scales and no lateral scales and the propodonotum bears one pair of triangular scales.

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