A Contribution to the Ectoparasite Fauna of Bats in Thailand II. Blood-Sucking Acari (Argasidae, Spinturnicidae and Macronyssidae)

AUTHOR(S):
UCHIKAWA, Kimito; KOBAYASHI, Tsuneaki

CITATION:

ISSUE DATE:
1978-08-31

URL:
http://hdl.handle.net/2433/156010

RIGHT:
A Contribution to the Ectoparasite Fauna of Bats in Thailand
II. Blood-Sucking Acari (Argasidae, Spinturnicidae and Macronyssidae)

Kimito UCHIKAWA and Tsuneaki KOBAYASHI

Abstract

Argas pusillus KOHLS*, Ornithodoros batuensis HIRST*, Spinturnix chiengmai PRASAD, Anystro- pus eonycteris DELFINADO and BAKER*, Anystrobus tabrohaniu (TURK)*, Meristaspis lateralis (KOLENATI)*, Eyndhovienia euryalis (CANESTRINI) (s.l.)*, Poroperiglieshrus rhinophihinæus (KOCH) Paroperiglieshrus analis PAN and TENG, Bewsella fledermaus DOMROW, Macronyssus tiemii (GROKHOVSKAYA and NGUEN-HUAN-HOE)*, Macronyssus sp. (protonymph), Steatonyssus faini DELFINADO*, Steatonyssus sp. 1 (male and protonymph). sp. 2 (protonymph) and sp. 3 (proto- nymph) are recorded as the blood-sucking parasites in this paper. The asterisked species are already listed in HILL and McNEELY (1975).

The host animals examined in the present study had been collected by the junior author in his faunal survey of Thai mammals carried out in 1975.1) The first report on the taxonomic results (UCHIKAWA and KOBAYASHI in press), in which were dealt with 12 species of fur-mites belonging to the family Myobiidae, was also based on the same host sample.

The present report is restricted only to the blood-sucking acari. As in the previous paper, some specimens might be found on aberrant hosts, because a number of bat individuals of different species had been preserved together in only the three containers.

Synoptic List of the Parasites Collected

I. Argasidae (Ixodoidea)

1. Argas (Carios) pusillus KOHLS, 1950
   Material examined: 16 larvae, ex Scotophilus kuhlii, Yala, Thailand.

2. Ornithodoros (Reticulinasus) batuensis HIRST, 1929
   Material examined: 3 larvae, ex Rousettus leschenaulti, Saraburi, Thailand.

II. Spinturnicidae (Mesostigmata)

1. Spinturnix chiengmai PRASAD, 1969
   The original description of this species was based on 7 females and a nymph from

1) This survey was supported financially by the Center for Southeast Asian Studies of Kyoto University and co-operated with the Applied Scientific Research Corporation of Thailand.
uncertain bats taken at Huai, Mae Sanam, Hod, Chiengmai (Prasad, 1969).

Material examined: 2 females, ex Scotophilus kuhlii, Yala, Thailand.

2. Ancystropus eonycteris Delfinado and Baker, 1963

Only a single female specimen, the holotype, from Eonycteris robsta from Mindanao represented this species in the original description. Recently, Hill and McNeely (1975) recorded the mite from Thai Cynopterus sphinx agulatus and Eonycteris spelaea.

This least known species resembles Ancystropus zeloborii Kolenati, which is recorded from Uganda, Cyprus, Egypt, India, Philippines, Thailand, Vietnam, Malaya, Laos, New Guinea and Solomon Islands (Rudnick, 1960; Baker and Delfinado, 1964; Prasad, 1969; Domrow, 1972; Hill and McNeely, 1975). As the construction and setation of leg I are distinctive, the leg of the holotype is depicted again in Fig. 1. Antero-dorsal seta $ad_1$ and postero-dorsal seta $pd_1$ on femur I, genu I and tibia I are barely discernible as circles in bases on both the holotype and present specimen. These setae are probably very minute and distinctly shorter than those of A. zeloborii. The form of the tritosternum differs from one another on the holotype and the present specimen (Fig. 2). The presternal area of the holotype is complicated according to over clearing, while that of the present specimen is compressed by coxae I. The tritosternum of A. eonycteris seems to be a remarkable structure consisting of a well sclerotized area.

Fig. 1. Ancystropus eonycteris, holotype female. Leg I: A; dorsal view, B; ventral view.
with antero-lateral projections followed by shallow lateral depressions and more weakly sclerotized, marginal parts.

Material examined: 1 female, ex Eonycteris spelaea, data uncertain.

3. Ancystropus taprobanius (TURK, 1950)

Ancystropus indicus HiregauDar and BAL, 1955, from Indian Rousettus leschenaulti, which had been suggested to be identical with A. taprobanius by Rudnik (1960), and Ancystropus rudnicki Baker and Delfinado, 1964, from Rossettus, Cynopterus and unidentified bats (Baker and Delfinado, 1964; Prasad, 1969) were synonymized as A. taprobanius by Domrow (1972).

Material examined: 2 females, ex Rousettus leschenaulti, Sarabri, Thailand; 1 female, ex Scotophilus kuhlii, Yala, Thailand.

4. Meristaspis lateralis (KOLENATI, 1856)

Prasad (1969) recorded this mite from Rousettus amplexicaudatus in Thailand.

Material examined: 1 male, ex Rousettus leschenaulti, Saraburi, Thailand; 2 males and 1 female, ex Eonycteris spelaea, data uncertain; 1 male free in alcohol in the container.

5. Meristaspis mindanaoensis Delfinado and Baker, 1963

Sternal shield of male is large and flask-shaped, and bears only 3 pairs of setae. Metasternal and genital setae are situated very close to but clearly off the shield.

Material examined: 2 males and 4 deutonymphs, ex Rousettus leschenaulti, Saraburi, Thailand; 1 male, ex Eonycteris spelaea, data uncertain; 1 male and 1 deutonymph free in alcohol in the host container.

6. Eyndhovenia euryalis (Canestrini, 1884) (s. lat.)

Only a single male was examined. It was very small-sized specimen, and its all measurements fell within the range of those for Domrow's Eyndhovenia mites parasitic on Rhinolophus megaphyllus in New South Wales.
Material examined: 1 male, ex *Hipposiderosis lavatus*, Tam Tur Toa, Thailand, September 1, 1975.

7. Paraperiglischrus rhinolophinus (C.L. Koch, 1841)

8. Paraperiglischrus analis Pan and Teng, 1973
   Paraperiglischrus hipposideros Baker and Delfinado, 1964, has been recorded as the parasite of *Hipposideros armiger armiger* (Hill and McGeeley, 1965) and *Hipposideros* sp. (Prasad, 1969) from Thailand. The status of *P. hipposideros* Baker and Delfinado is obscure as discussed in Uchikawa (in press), and all the Thai specimens are tentatively identified as *P. analis* Pan and Teng.
   Material examined: 1 male and 1 female, ex *Hipposideros lavatus*, Muang Ngai, Thailand, September 2, 1975; 1 female, ex *Hipposideros armiger*, Muang Ngai, September 2, 1975; 1 female, ex *Cynopterus sphinx*, Cheing Mai, September 10, 1975; 1 male and 1 female free in alcohol in the host container.

III. Macronyssidae (Mesostigmata)

1. Bewsiella flettermaus Domrow, 1958

2. Macronyssus tieni (Grokhovskaya et Nguyen-Huan-Hoe, 1945)
   The type host of this mite is *Hipposideros armiger* from Vietnam.

3. Macronyssus sp. (Protonymph)
   Idiosoma 340–370 μ long by 205–223 μ wide at level of stigma. Podosomal shield 160–165 μ long, 125–130 μ wide at level between setae s₄ and s₅, granulated finely, bearing 10 pairs of setae; setae j₄–₆ and z₅ minute and marginal setae long. Pygidial shield with 7 pairs of setae; j₃ and j₅ minutes; j₄ very minute and barely discernible; s₄ and z₄ slightly longer than j₃ and j₅; s₅ considerably long and z₅ being longest. Eleven pairs, including j₁, of setae on unarmed dorsum. A pair of caudal, marginal and 4 pairs of ventral setae on soft cuticle.
Bat Ectoparasites in Thailand

Material examined: 2 protonymphs, ex Tylonycteris sp., Yala, Thailand.

4. Steatonyssus faini DELFINADO, 1960
   Material examined: 1 female, ex Scothophilus kuhlii, Yala, Thailand.

5. Steatonyssus sp. 1 (Male and protonymph)
   This male mite is distinctive in having very minute opisthosomal dorasl setae both on and off the dorsal shield. The protonymphs, posterodorsal setae of which were considerably weaker than those on podosomal region, were taken together with the male. Both forms are tentatively dealt with as the same species.
   Material examined: 1 male and 3 protonymphs, ex Myotis sp. Yala, Thailand.

6. Steatonyssus sp. 2 (Protonymph)
   All dorsal setae, exclusive of J5 on pygidial shield, and posteriormost 2 pairs of ventral setae are well developed, though they are not even (38–78 µ long). A single specimen was taken together with the female of S. faini, but the identity of the both forms was not confirmed.
   Material examined: 1 protonymph, ex Scothophilus kuhlii, Yala, Thailand.

7. Steatonyssus sp. 3 (Protonymph)
   This mite is very close to S. javensis brevisetosus TILL and EVANS, 1964, but is not identified.
   Material examined: 2 protonymph, ex Scothophilus kuhlii, Yala, Thailand.

Acknowledgements

In the course of the present study, generous cooperation was extended to us by Thai peoples. Among them, Dr. Sawart RATANAWORABHAN, Department of Agriculture, and Dr. PRASART, Applied Scientific Research Center of Thailand, had kindly granted permission to leave their valued colleagues, Mr. SONGSAKDI, Mr. PREECHA, Mr. PRAJONG, Mr. SERMSAKDI and Miss Cora, for participation in our field survey. Dr. Harry HOOGSTRALE kindly identified the 2 argasids for the authors. Dr. Eric H. SMITH, Custodian of Collections, Field Museum of Natural History, Chicago, kindly sent on loan the holotype of Angustropus eonycteris DELFINADO and BAKER, which is now under his care, to the senior author. Authors' sincere thanks are due to all these persons.

References

Kimito UCHIKAWA & Tsuneaki KOBAYASHI


Addresses of the Authors:
Dr. Kimito UCHIKAWA (内川公人)
Department of Parasitology, Faculty of Medicine, Shinshu University (信州大学医学部寄生虫学教室)
Asaki-Machi, Matsumoto, Nagano Prefecture
JAPAN 390

Dr. Tsuneaki KOBAYASHI (小林恒明)
Biological Laboratory, Yoshida College, Kyoto University (京都大学教養部生物学教室)
Yoshida, Sakyo-Ku, Kyoto
JAPAN 606
Southwestern face of Mt. Kinabalu viewed from Kundassang (ca. 1,300 m); the foot-hill of the mountain is covered with a montane oak forest.

Tsuneaki Kobayashi & Mitsuru Hotta

FRONTISPIECE