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SPINTURNICIDAE OF SOUTH EAST ASIA AND THE PACIFIC REGION

By Edward W. Baker[1] and Mercedes D. Delfinado[2]

Abstract: Seven genera of Spinturnicidae are recognized from bats collected in the South East Asia and Pacific Region. Among the species treated in this paper, 3 belong to *Spinturnix* von Heyden, 2 to *Ancystropus* Kolenati, 1 to *Oncoscelus* Delfinado & Baker, 5 to *Meristaspis* Kol., 2 to *Eyndhovia* Rudnick, 2 to *Paraperiglischrus* Rudn., and 1 to *Periglischrodes* n. gen. The species included are *Spinturnix psi* (Kol.), *S. verutus* Delf. & Bak., *S. paracuminatus*, n. sp., *Ancystropus rudnicki*, n. sp., *A. palawanensis* Delf. & Bak., *Oncoscelus kanheri* (Hiregaudar & Bal), *Meristaspis mindanaoensis* Delf. & Bak., *M. calcaratus* (Hirst), *M. lateralis* (Kol.), *M. jordani* (Radford), *M. dusbabeki* n. sp., *Eyndhovia euryalis euryalis* (Canestrini), *E. euryalis ahi*, n. subsp., *Paraperiglischrus strandtmanni*, n. sp., *P. hipposideros*, n. sp., and *Periglischrodes gressitti*, n. sp.

In a previous paper Delfinado & Baker (1963) reported on seven species of Spinturnicidae from the Philippines, four of which were new. In this continuation of that study, mites from other areas of the Pacific and SE Asia, and a species each from Japan and Korea, are discussed. Sixteen species are recognized from bats, of which six are new, one forming a new genus. Holotypes and paratypes, unless otherwise stated, are to be deposited in the collection of the Bernice P. Bishop Museum, Honolulu.

We are grateful to Dr Nixon A. Wilson, Bishop Museum, Honolulu, for making the bat mite collection available to us.

KEY TO GENERA DISCUSSED

1. Peritreme completely dorsal 2
   Peritreme long, bending ventral between coxae II and III ..... **Spinturnix**
2. Claws of leg I enlarged; caruncles I rudimentary 3
   Claws of leg I not enlarged; caruncles I developed 4
3. Three pairs of setae surrounding anterior margin of dorsal shield; tarsus I and coxa I without lateral hooks ..... **Ancystropus**

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Two pairs of setae surrounding anterior margin of dorsal shield; tarsus I and coxa I each with a large lateral hook..... **Oncoscelus**

4. With tritosternum..... 5
   Without tritosternum..... 6
5. Four pairs of setae surrounding anterior margin of dorsal shield; setae of tarsus I flattened..... **Meristaspis**
   Five pairs of setae surrounding anterior margin of dorsal shield; distal setae of tarsus I not flattened..... **Eyndhovia**
6. Peritreme about 2× as long as width of stigma and lying free in the integument; without spine-like setae on venter of tarsi II–IV ..... **Paraperiglischrus**
   Peritreme no longer than width of stigma and lying in a plate; with a pair of short, stout spine-like setae on venter of tarsi II–IV; a small plate bearing a pair of setae on posterior dorsal of body..... **Periglischrodes**

Genus **Spinturnix** von Heyden

Spinturnix von Heyden, 1826, Isis (Oken.) **18** (6): 512.—Rudnick, 1960, Univ. Calif. Publ. Ent. **17** (2): 200.

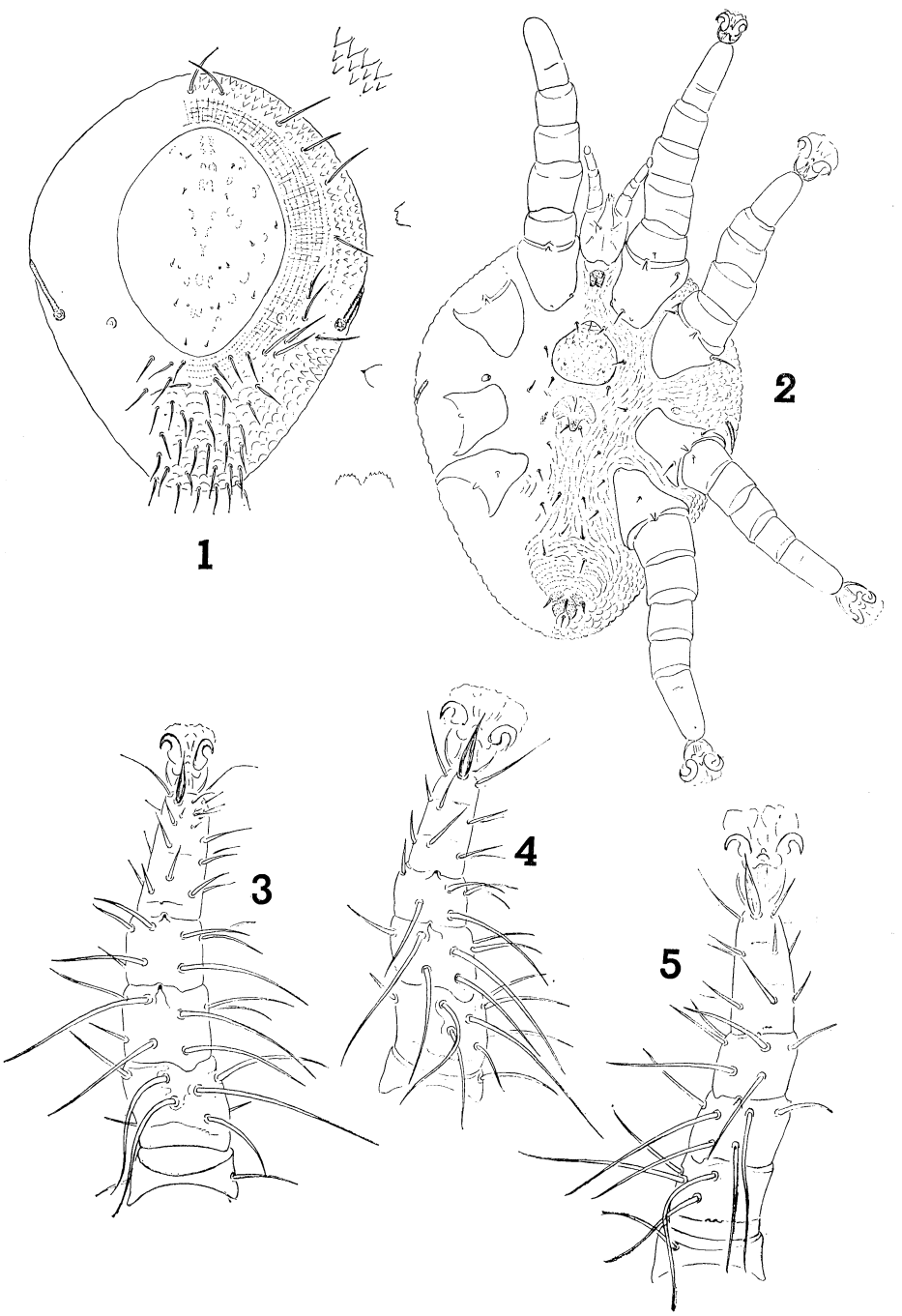
Spinturnix psi (Kolenati) Figs. 1–5.

Pteroptus psi Kol., 1856, Allg. Dtsch. Naturk. Ztg. ser. 2, **2**: 182.
Spinturnix psi (Kol.): Rudnick, 1960, Univ. Calif. Publ. Ent. **17** (2): 211.—Dusbabek, 1962, Ceskoslov. Spolec. Ent. Casopis **59** (4): 362.

Both sexes have a very distinctive striation pattern. That of the ♀ consists, in part, of lines radiating out from the shield, surrounded by a scale-like pattern. The ♂ lacks the radiating line pattern. The striation pattern is typical for both sexes ventrally.

This species is widespread throughout the world on bats of the genus *Miniopterus*, and it has been recorded from Serbia, Corsica, France, Netherlands, Yugoslavia, East Indies, India, Madagascar, Japan, Korea, and Formosa.

OUR RECORDS ARE: 2 ♀♀, New Guinea, Bulolo, on *Miniopterus* sp., 3. IV. 1963, 720 m, BBM-NG 27603, P Shanahan; 1♀, NE New Guinea, Sinofi, 1590 m, 30 km S of Kainantu, on bat, 30.IX.1959, TMP 781–818, T. C. Maa, and 22 ♀♀ on *Miniopterus* sp., same locality, 30.IX.1959, TMP 775–780; 2 ♀♀ with the above data and code number TMP 781–817; 1♀ with the code number TMP 775–780; 1♀, W. New Guinea, S side of Humbolt Bay, 9.XII. 1961, BMNG 513–525, L. W. Quate; 1♀, New Guinea, Dawai Rv., on bat, 5.XI.1962, BBM-NG 22143–52, N. Wilson; 1♀, with the above data, dated 1.XI.1962, BBM-NG 22136–38, Wilson; 1♀, NE New Guinea, Okapa, on *Miniopterus* sp., 1800 m, 64 km S of Kainantu, 28.IX.1959, TMP 750, Maa; 3 ♀♀, NE New Guinea, Kassam, on *Miniopterus* sp., 1350 m, 48 km E of Kainantu, 30.X.1959, TMP 1185–88, Maa; 4 ♀♀, New Guinea, Bulolo Rv., on *Miniopterus* sp., 720 m, 3. IV. 1963, BBM-NG 27601–2, Shanahan; 1♀ with preceding data and serial number BBM-NG 27606; 1♀ with the same data and serial number BBM-NG 27600; 1♀ with the preceding data and serial number BBM-NG 27603; 1♀, New Guinea, Wau, on bat, 1200 m, 2. I. 1962, G. Monteith; 3 ♀♀, W. New Guinea, Vogelkop, Fak Fak, Danawaria Caves, 100–700 m, on bat, 2.VI.1959, Maa & J. L. Gressitt; 1♀, W. New Guinea, S. side of Lsextaxi, Assappo, on *Myotis* sp., 31.XI.1961, BM-NG 550–567, Quate; 4♀♀,



Figs. 1–5. *Spinturnix psi* (Kolenati), ♀. 1, dorsal view of body, with details of striae; 2, ventral view of body; 3, leg I; 4, leg II; 5, leg VI.

Aust. New Guinea, Bulolo Rv., 720 m, on *Miniopterus* sp., 3.IV.1963, BBM-NG 27604, Shanahan; 5 ♀♀, New Guinea, Bulolo Rv., 720 m, on *Miniopterus* sp., 3.IV.1963, BBM-NG 27606, Shanahan; 1 ♀, N. Borneo, Sandakan Residency, Gomantong Caves, 32 km S. Sandakan, 23.XI.1958, Maa; 1 ♀, Taiwan, Tao-yuan, Tao-yuan Hsien, on *Miniopterus schreibersi*, 15.XI.1960, PF 10061, R. E. Kuntz; 1 ♀, same data as preceding except 16. XI. 1959, PF 10064; 2 ♀♀, Taiwan, Lung-Sou, Kuei-shan, Tao-yuan Hsien, on *Miniopterus schreibersi*, 13. XII.1960, 169-H, Kuntz.

Spinturnix verutus Delfinado and Baker Figs. 6–11.

Spinturnix verutus Delf. & Bak., 1963, Pacific Ins. **5** (4) : 906.

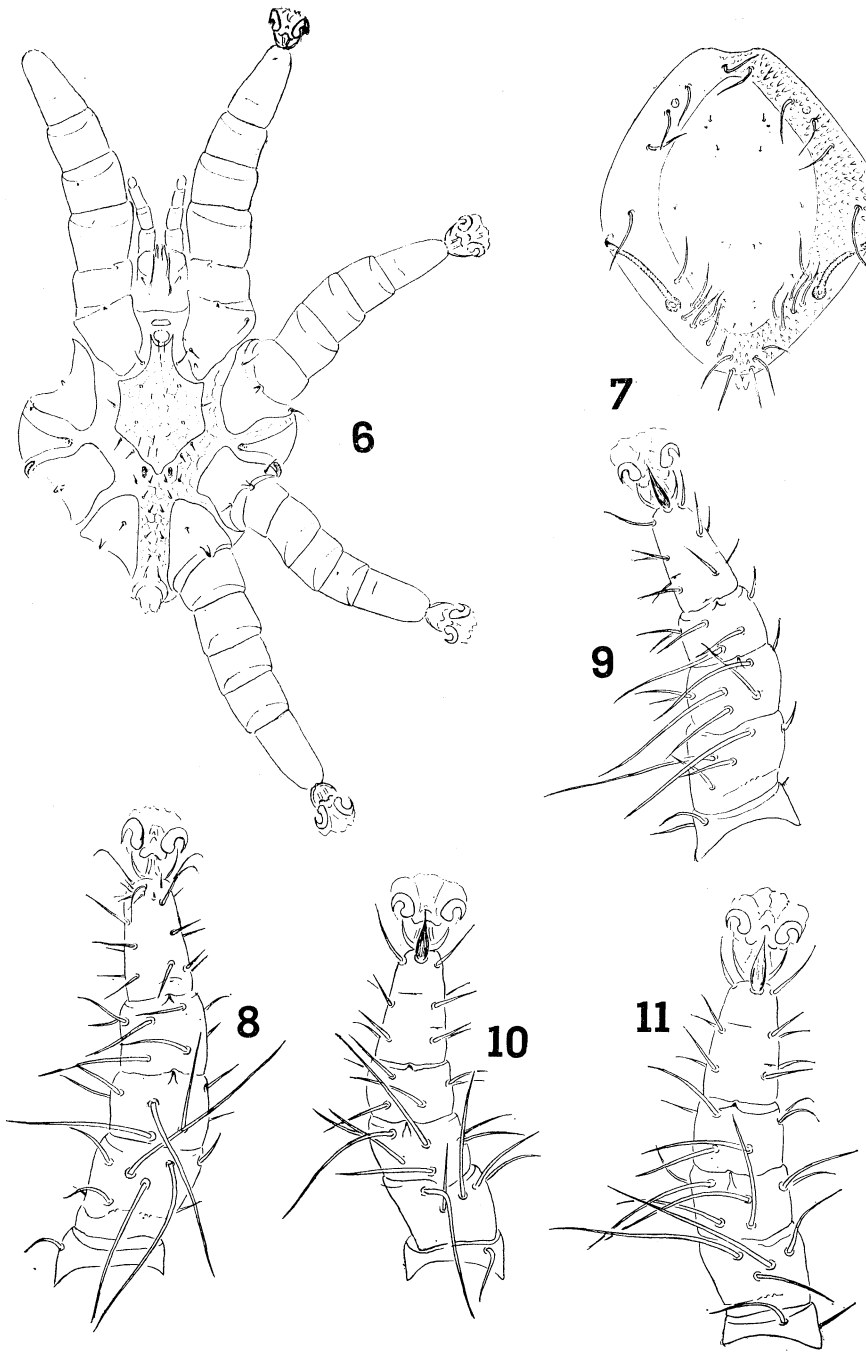
This species is closely related to *Spinturnix psi* (Kolenati) but the ♀ lacks the radiating line pattern on the dorsal integument, and in the ♂ the sternal setae are on the shield.

Spinturnix verutus was originally described from Philippine "bats." OUR NEW RECORDS ARE: 3 ♀♀, W. New Guinea, Vogelkop, Fak Fak, Danawaria Caves, 100–700 m, on *Miniopterus* sp., 2. VI. 1959, Maa & Gressitt; 1 ♀, NE New Guinea, Kassam, 1350 m, 48 km E of Kainantu, on bat, 30. X. 1959, TMP 1185–88, Maa; 3 ♀♀, New Guinea, Bulolo Rv., 720 m, on bat, 3. IV. 1963, BBM-NG 27601, Shanahan; 1 ♂, New Guinea, Bulolo, on *Miniopterus* sp., 3. IV. 1963, 720 m, BBM-NG 27603, Shanahan; 1♂, NE New Guinea, Vogelkop, Danawaria Limestone Cave, 25 m, on bat, 2. VI. 1959, Gressitt & Maa; 1♂, W. New Guinea, 1959, Gressitt & Maa (no other data); 1 ♂, New Guinea, Dawai Rv., no *Myotis* sp., 5. XI. 1962, BBM-NG 22143–52, Wilson; 1♂, New Guinea, Dawai Rv., on bat, 1. X. 1962, BBM-NG 22136–38, Wilson; 3 ♂♂, New Guinea, Dawai Rv., on *Myotis* sp., 5. XI. 1962, BBM-NG 22143–52, Wilson; 3 ♂♂, NE New Guinea, Kassam, on *Miniopterus* sp., 1350 m, 48 km E of Kainantu, 30. X. 1959, TMP 1185–88, Maa; 10 ♂♂, W. New Guinea, Vogelkop, Fak Fak, Danawaria Caves, 100–700 m, on bat, 2. VI. 1959, Maa & Gressitt; 5 ♂♂, Aust. New Guinea, Bulolo Rv., 720 m, on *Miniopterus* sp., 3.IV.1963, BBM-NG 27604, Shanahan; 5 ♂♂, New Guinea, Bulolo Rv., 720 m, on *Miniopterus* sp., 3. IV. 1963, BBM-NG 27606, Shanahan; 1♂, Taiwan, Tao-yuan, Tao-yuan Hsien, on *Miniopterus schreibersi*, 16. XI. 1959, PF 10064, Kuntz; 1 ♂, Taiwan, Lung-Sou, Kuei-shan, Tao-yuan Hsien, on *Miniopterus schreibersi*, 13.XII.1960, 169-H, Kuntz; 2 ♂♂, Taiwan, Shen-Ou, Taipei Hsien, on *Miniopterus schreibersi*, 19. VIII. 1959, PF 6433, PF 6458, Kuntz.

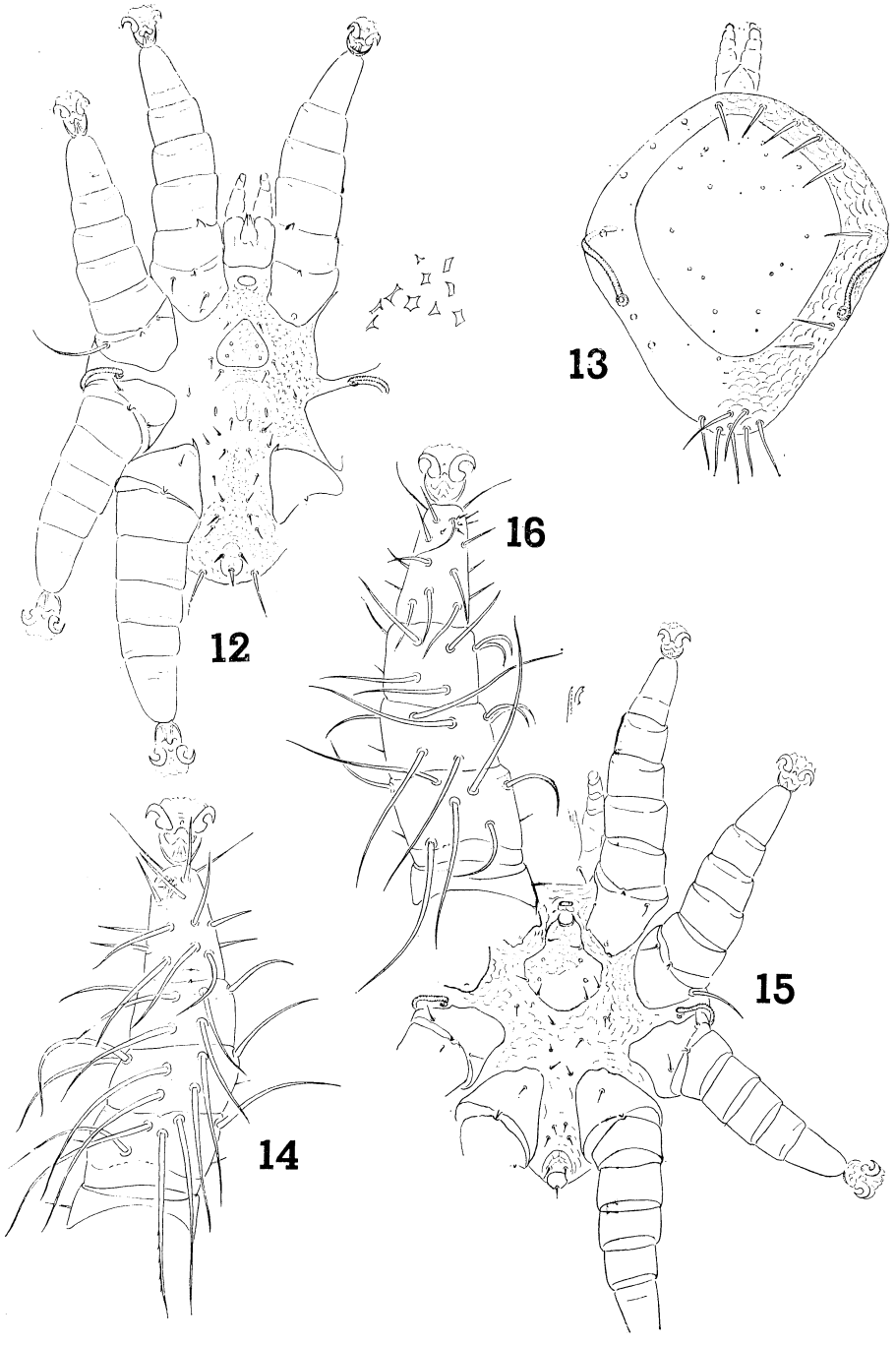
Spinturnix paracuminatus Baker and Delfinado, n. sp. Figs. 12–16.

This new species is closely related to *Spinturnix acuminatus* (Koch), but can be differentiated in that the posterior dorsal setae are at least 2× as long as in *S. acuminatus*; also, there is no continuous row of setae on the dorsal integument between the peritreme and the posterior margin of the body as in *S. acuminatus*. The dorsal shield of *S. acuminatus*, as figured by Dusbabek, is constricted at the posterior 1/3, which is not the case with *S. paracuminatus*.

♀. Body rapidly narrowing to rear; dorsal shield large, not constricted on posterior margin; striations composed of elongate reticulate patterns; with 5 pairs of dorsal setae surrounding anterior margin of shield anterior to peritreme; the first 4 pairs long, longer than distance between their bases; with 4 pairs of setae just posterior to stigma; with 6 pairs of setae on posterior apex of body. Tritosternum small, oval; sternal plate triangular, with obscure reticulate pattern, about 2× as long as wide; 3 pairs of sternal setae lying



Figs. 6–11. *Spinturnix verutus* Delfinado and Baker, ♂. 6, ventral view of body; 7, dorsal view of body; 8, leg I; 9, leg II; 10, leg III; 11, leg IV.



Figs. 12–16. *Spinturnix paracuminatus*, n. sp. 12, ventral view of body, ♀ ; 13, dorsal view of body, ♀ ; 14, leg I, ♀ ; 15, ventral view of body, ♂ ; 16, leg I, ♂.

on integument; sculpturing of genital shield obscure; genital setae on integument posterior to shield; 8 pairs of other ventral setae; anal and postanal setae short and strong and subequal in length. Ventral integument with typical striation pattern—anteriorly with elongate reticulations and posteriorly with irregular striae as figured; coxae with weak striae and small setae except for posterior seta on coxa II. Dorsal leg setae long and strong as figured.

♂. Similar to ♀ except for sexual differences. Length of body, not including gnathosoma, 630 μ; width 630 μ.

Holotype ♀ (BISHOP 3654), on *Miniopterus* sp., NE New Guinea, Suanimbu, 180 m, E of Maprik, 14–15. I. 1960, TMP 1676–1780, T. C. Maa.

Paratypes: 13 ♀♀ and 4 ♂♂ with the above data; 1 ♂ on bat, North Borneo, W. Coast Residency, Ranau, 12.8 km N Paring Hot Springs, 500 m, 8. X. 1958, TMP 433, Maa.

OTHER RECORDS ARE: 1 ♀, NE New Guinea, Sinofi, on *Miniopterus* sp., 30 km S of Kainantu, 20. IX. 1959, TMP 781–817, Maa; 4 ♀♀, NE New Guinea, Kassam, on *Pipistrellus* sp., 1350 m, 48 km E of Kainantu, 29. X. 1959, TMP 1130, Maa; 31 ♂♂, 59 ♀♀, NE New Guinea, Suanimbu, on *Miniopterus* sp., 180 m, E of Maprik, 14. I. 1960, TMP 1676–1780, Maa.

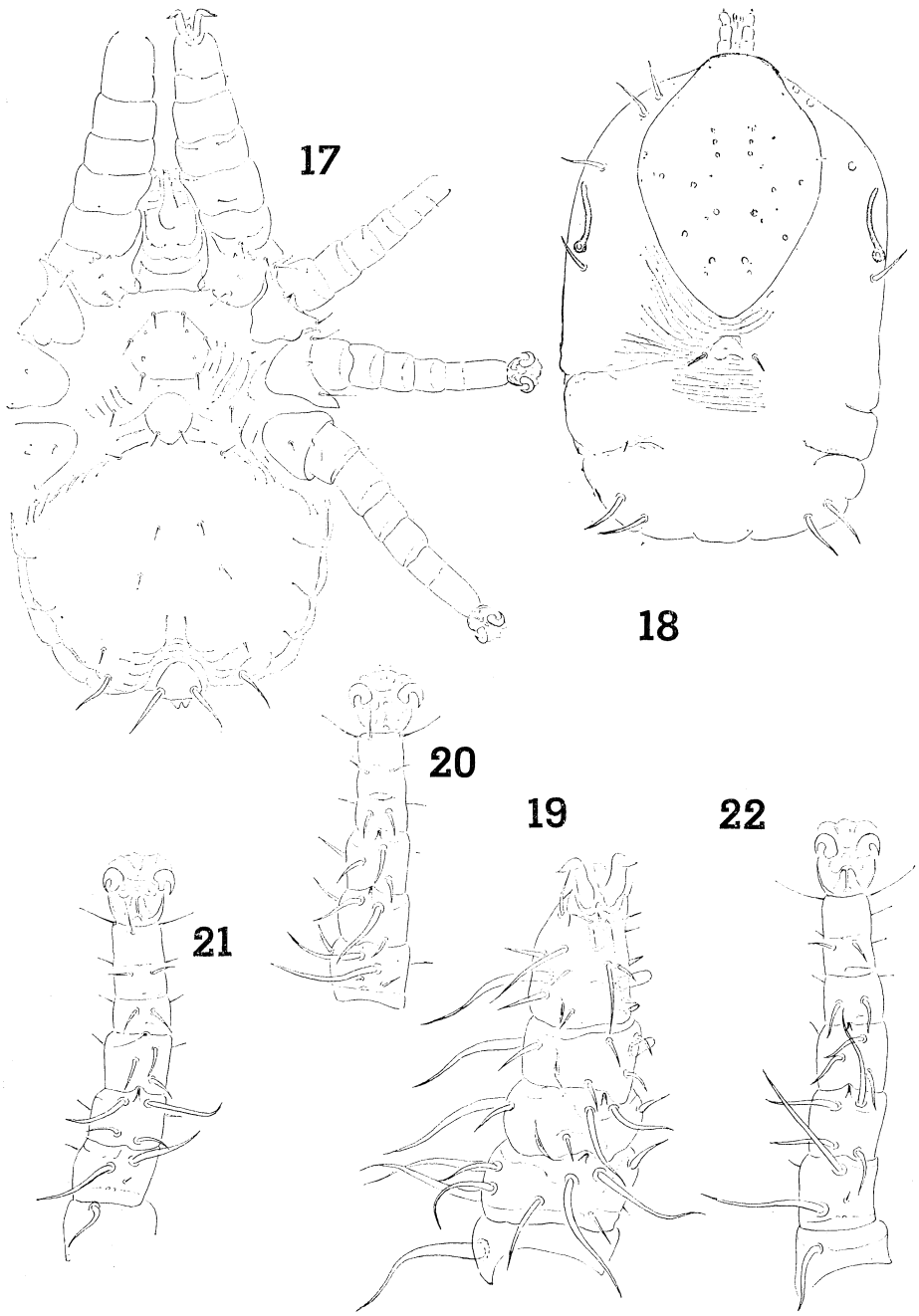
Genus **Ancystropus** Kolenati, 1856

Ancystropus Kol., 1856, Die Parasiten der Chiroptern. Brunn: Rudolph Rohrers Erben, p. 1–51.—Rudnick, 1960, Univ. Calif. Publ. Ent. **17** (2): 171.

Ancystropus rudnicki Baker and Delfinado, n. sp. Figs. 17–22.

This species is related to *Ancystropus taprobanius* (Turk) and *A. indicus* Hiregaudar and Bal. It differs from *A. taprobanius* in having a pair of setae almost immediately posterior to the dorsal shield, and in having longer leg setae, especially on the distal segments. It differs from *A. indicus* in having the first 2 propodosomal marginal setae paired and behind the anterior margin of the dorsal shield which projects over the gnathosoma; also the sternal shield is about as long as wide, rather than being wider than long.

♀. Body almost square; wrinkled on posterior 1/3; length, not including gnathosoma, 706 μ; width 460 μ. Dorsal shield rounded anteriorly and nearly pointed posteriorly, projecting over gnathosoma, with 10 pairs of pores as figured. Peritremes dorsal, of medium length, slightly curved. Integument lightly striated, with 4 pairs of strong setae, subequal in length, surrounding anterior margins of shield. The first 2 setae paired and situated well behind anterior margin of shield; 3rd seta lies just anterior to peritreme; 4th seta lies just posterior to stigma. A pair of shorter, stout setae lie posterior to shield; 2 pairs of strong setae on posterior lateral margin of body. Tritosternum more than 2× as wide as long, occupying area between coxae I; anterolateral margins of tritosternum project sharply anteriorly; posterolateral margins rounded, lobe-like. Sternal shield about as long as wide, with 2 pairs of pores and 3 pairs of short marginal setae; shield without ornamentation. All 5 pairs of ventral setae short, subequal in length, except for pair laterad of anal plate, and anal setae; genital setae lie on epigynial plate, which is broadly rounded anteriorly. Ventral integument with striae; coxae without ornamentation; coxa I strongly lobed at contact with tritosternum. Legs strong, especially leg I, as figured. Tarsus I



Figs. 17–22. *Ancystropus rudnicki*, n. sp., ♀. 17, ventral view of body; 18, dorsal view of body; 19, leg I; 20, leg II; 21, leg III; 22, leg IV.

with 1 strong and 1 small thumb-like setae; tibia I with 1 strong thumb-like seta; other leg setae short, strong, as figured.

♂: Not known.

Holotype ♀ (BISHOP 3655), on bat, New Guinea, Sum-Sum, 7. II. 1963, BBM-NG 21185, H. Clissold (no other data).

Paratypes: 2 ♀♀ and 1 ♂ with the above data, and 1♂ and 1♀ with the above data but code number BBM-NG 20613. 4 ♀♀ on *Rousettus* sp., West New Guinea, Bokondini, 40 km N of Baliem Valley, ca 1300 m, 16–23. XI. 1961, B 817, 769, 360, 359, L. & S. Quate; 3 ♀♀ on *Rousettus* sp., West New Guinea, Vogelkop, Kebar Valley, W of Manokwari, 550 m, 4–31. I. 1962, S. & L. Quate.

Ancystropus palawanensis Delfinado and Baker

Ancystropus palawanensis Delf. & Bak., 1963, Pacific Ins. **5** (4): 95.

This species was described from specimens collected on *Cynopterus brachyotis* and *Rousettus amplexicaudatus* in Palawan, Philippines.

OUR NEW RECORD IS: ♀, from *Cynopterus* sp., Vietnam, Xuan Phu, 50 m, 25. XI. 1960, B 525–26 (no collector's name given).

Genus **Oncoscelus** Delfinado and Baker

Oncoscelus Delf. & Bak., 1963, Pacific Ins. **5** (4): 913.

Oncoscelus kanheri (Hiregaudar and Bal) Fig. 23.

Ancytropus [sic] *kanheri* Hireg. & Bal, 1956, Agra Univ. J. Res. (Sci.) **5** (1): 95.
Oncoscelus kanheri (Hireg. & Bal): Delfinado & Baker, 1963, Pacific Ins. **5** (4): 914.

This genus, described by Delfinado & Baker (1963), is easily recognized by the presence of the large hooks on legs I. Another of the characters is the location of the epigynial shield for behind coxae IV. A nongravid ♀, collected in New Guinea, has the epigynial shield at the level of coxae IV.

This species has been reported from *Rousettus leschenaulti* in India, on *R. amplexicaudatus* in the Philippines, O-Sumba, and the Solomon Islands, and on bats in New Guinea. OUR ADDITIONAL RECORD IS: 2 ♀♀ from bats, NE New Guinea, Sum-sum, 7. II. 1963, BBM-NG 21185, H. Clissold.

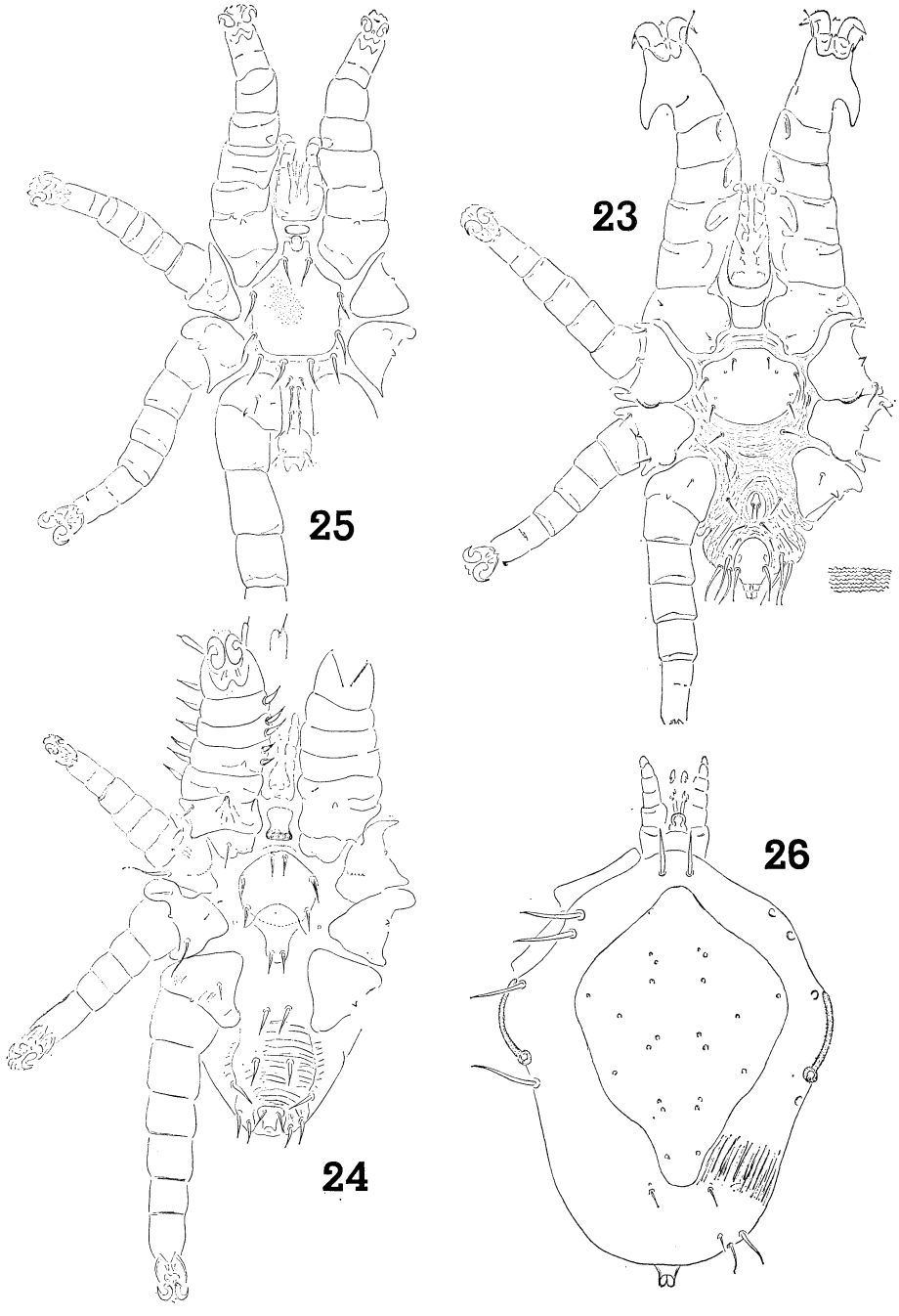
Genus **Meristaspis** Kolenati

Meristaspis Kol., 1857, Wien. Ent. Monatschr. **1** (2): 60.—Delfinado & Baker, 1963, Pacific Ins. **5** (4): 908.

Meristaspis mindanaoensis Delfinado and Baker

Meristaspis mindanaoensis Delf. & Bak., 1963, Pacific Ins. **5** (4): 910.

This species was described from mites collected on *Prioniturus malindangensis* and *Cynopterus brachyotis* in Mindanao, Philippines. NEW RECORDS ARE: 23 ♀♀ and 3 ♂♂ on *Nyctimene* sp., West New Guinea, Central Mts, Archbold Lake, 760 m, 26. XI–3.XII.1961, BM-NG



Figs. 23–26. 23, *Oncoscelus kanheri* (Hiregaudar and Bal), ventral view of nongravid ♀; 24, *Meristaspis jordani* (Radford), ventral view of body, ♀; 25, same, ventral view of body, ♂; 26, *Meristaspis dusbabeki*, n. sp., ♀, dorsal view of body.

415–456, 465–479, L. & S. Quate; 6 ♀♀ and 4 ♂♂ on *Nyctimene*, *Rousettus*, and *Macroglossus*, W New Guinea, Vogelkop, Kebar Valley, W of Manokwari, 550 m, 31. I. 1962, BM-NG 817, 816, 767, 770, 879, 850, 862, L. & S. Quate; 4 ♀♀ on bat, Wau, New Guinea, Bulldog Rd., 2400 m, 27.V.1962, BBM-NG 20121, J. H. Sedlacek & H. Clissold; 3 ♀♀ on *Nyctimene*, Sandy Creek, New Guinea, B 20588, Clissold; 4 ♀♀ on bat, Wau, New Guinea, 18. III. 1962, B 244, Sedlacek & Clissold; 44 ♀♀, 6 ♂♂ on *Nyctimene*, Wau Creek, New Guinea, 12–23. III. & 4.IV.1963, BBM-NG 20442 and 20112, Clissold & P. Shanahan; 3 ♀♀ on *Nyctimene* sp., Mt Missim, New Guinea, 28. II. 1963, BBM-NG 21104, Clissold.

Meristaspis calcaratus (Hirst)

Ancystropus (*Meristaspis*) *calcaratus* H., 1923, Proc. Zool. Soc. Lond. **1923**: 983.
Meristaspis calcaratus (H.): Rudnick, 1960, Univ. Calif. Publ. Ent. **17**(2): 183.—Delfinado & Baker, 1963, Pacific Ins. **5** (4): 908.

This species has been collected on *Pteropus* sp. in Rook I., Pulau Berhala, Madagascar, New Hebrides, Guam, Saipan, and Peleliu; on flying fox in Manus I.; and on *Pteropus vampyrus*, *P. tablensis*, and *P. speciosus* in the Philippines. OUR NEW RECORD IS: 4 ♀♀ on fruit bat, Saipan, 6. IX. 1944, J. Greenberg.

Meristaspis lateralis (Kolenati)

Pteropus lateralis Kol., 1856, Die Parasiten der Chiropteren, p. 29.
Meristaspis lateralis (Kol.): Kol., 1857, Wien. Ent. Monatschr. **1** (2): 60.—Rudnick, 1960, Univ. Calif. Publ. Ent. **17** (2): 180.—Delfinado & Baker, 1963, Pacific Ins. **5** (4): 911.

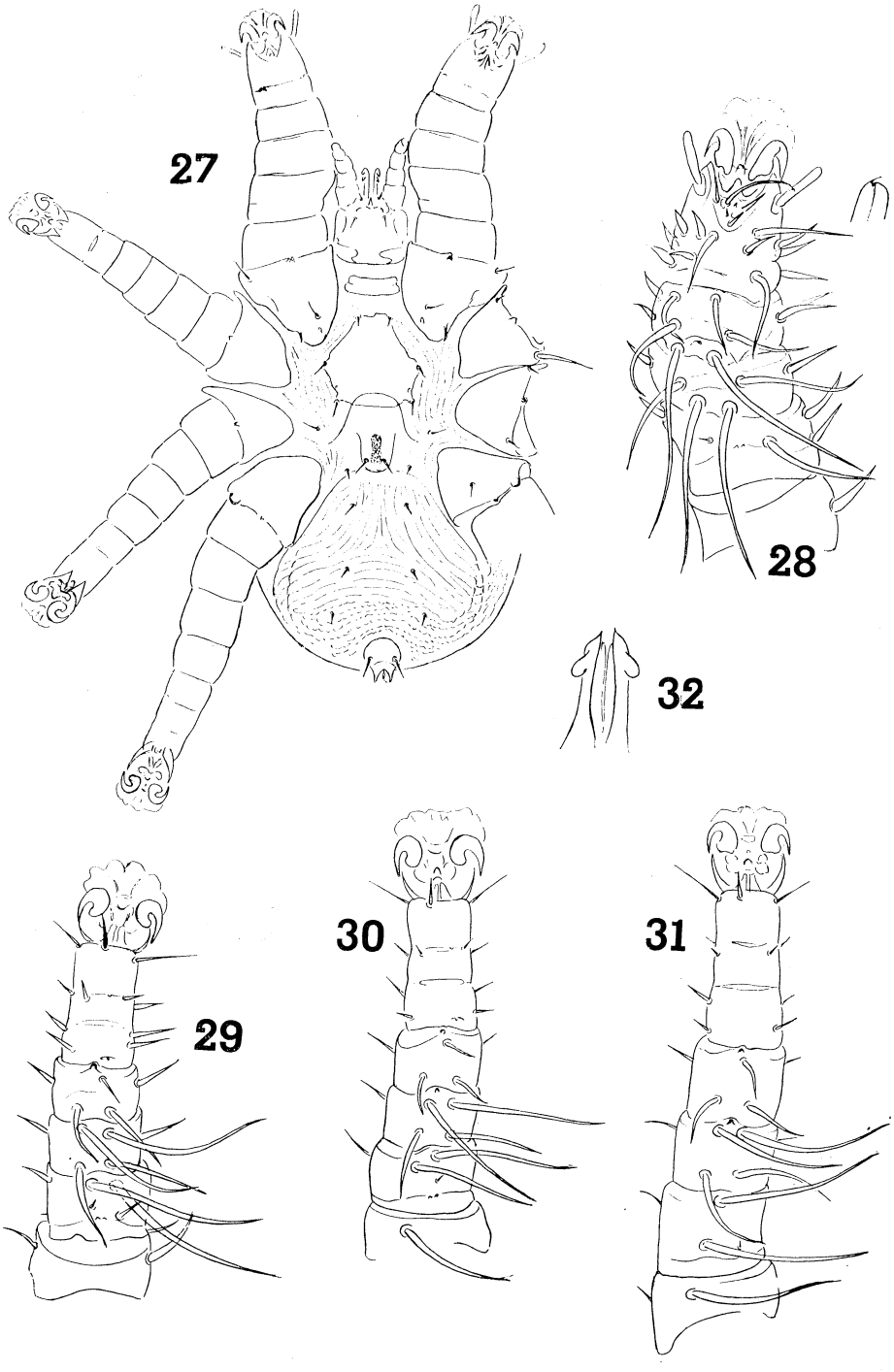
Previously, this species was distributed as follows: Egypt and Palestine on *Rousettus aegypticus*; India on *Rousettus leschenaulti*; Yemen on *Eidolon sebaeum*; and Philippines on *Eonycteus robusta*, *Rousettus amplexicaudatus*, and *Cynopterus brachyotis*. OUR NEW RECORDS ARE: 4 ♀♀ on *Rousettus* sp., West New Guinea, Bokondini, 40 km N of Baliem Valley, ca 1300 m, 16–23. XI. 1961, BM-NG 403, S. & L. Quate; 5 ♀♀, 3 ♂♂ on *Rousettus* sp., W New Guinea, Vogelkop, Kebar Valley, 550 m, 20.I.1962, B 806–808, L. & S. Quate; 1♂ and 1♀, on bat, Sandy Creek, New Guinea, B 20613; 6 ♀♀ and 3 ♂♂ on bat, Sum-Sum, New Guinea, 9.II.1963, B 21199, Clissold; 2 ♀♀ on *Rousettus* sp., Sumberbaba, New Guinea, 29. X.1962, B 22057–58, Wilson & Clissold; 2 ♀♀ on *Rousettus* sp., Dawai River, New Guinea, 1. XI. 1962, B 22105, Wilson & Clissold; 3 ♀♀ and 1♂ on bat, Enarotali, New Guinea, B 21476, Wilson & Clissold; 1♀ on *Tupaia* sp., North Borneo, 8.8 km SW Tenom, 1200 m, 22. XII. 1962, B 10738, M. Thompson; 1♀, Niki-Niki, Timor, VI. 1935, H. Buhler.

Meristaspis jordani (Radford) Figs. 24, 25.

Ancystropus jordani Radf., 1947, Proc. Zool. Soc. London **117**: 3301.
Meristaspis jordani (Radf.): Rudnick, 1960, Univ. Calif. Publ. Ent. **17** (2): 184.

Meristaspis jordani (Radf.) was described from specimens collected on bat in Celebes. Until now, this was the only known host and locality.

OUR RECORDS ARE: 64 ♀♀, 33 ♂♂, on *Dobsonia* sp., Solomon Is., Buka I., Sia Cave; New Guinea, NE Maprik, 160 m, 2. II. 1960, TMP 1501–20, 1561–77, T. C. Maa; 4 ♂♂, on *Dobsonia* sp., Kassam, 1350 m, 48 km E of Kainantu, 30. X. 1959, Maa; 12 ♀♀ and 4 ♂♂, on *Dobsonia* sp., Bismarck Archipelago, Manus I.; Lundret, 17 km SE of Lorengau, 180 m, 23. XII. 1959, TMP 1637, Maa; 1♀ on *Dobsonia* sp., New Britain, Keravat, 180 m, TMP 1247,



Figs. 27–32. *Meristaspis dusbabeki*, n. sp., ♀. 27, ventral view of body; 28, leg I; 29, leg II; 30, leg III; 31, leg IV; 32, chelicerae.

Maa; 10 ♀♀ and 5 ♂♂, on fruit bat and *Dobsonia* sp., Sandy Creek and Mooly Creek, New Guinea, BBM-NG 20625–27; 2 ♀♀ and 2 ♂♂, on bat, Slate Creek, New Guinea, 30.I. 1963, BBM-NG 20366; 4 ♀♀ on *Dobsonia* sp., Mt Missim, New Guinea, 3–8. I. 1963, BBM-NG 21019, Clissold; 2 ♀♀, on *Pteropus* sp, NE New Guinea, Bulolo, Archbold Expedition 1959, AMNH 1789; 1♀ on *Pteropus* sp., and 3 ♀♀ and 1♂ on fruit bat, Wau, New Guinea, 1200 m, 25.II.1962, BBM-NG 20573, Clissold; 1♀ on *Dobsonia* sp., Arau, Krat Ke Mts, NE New Guinea, 20. X. 1959, BBM-NG 16918–19, H. M. van Deusen.

Meristaspis dusbabeki Baker and Delfinado, n. sp. Figs. 27–32.

This species belongs in the series with the large blunt distal setae on tarsus I, and with a long strong seta and a tiny seta dorsally on the femora. It is similar to *Meristaspis macroglossi* (Hirst), but differs in having a shorter tritosternum, a differently shaped dorsal shield, and in having an irregular sternal shield with marginal setae.

♀. Body broadest at level of coxae III; without dorsal transverse suture; length, not including gnathosoma, 730 μ; width, 586 μ. Dorsal shield large, reaching well past posterior margin of coxae IV; with 11 pairs of pores; without obvious ornamentation; somewhat constricted posteriorly. Five pairs of strong setae surrounding shield, subequal in length, the 1st pair anterior to shield, 2nd and 3rd pairs closely paired, 4th pair on body at anterior edge of peritreme, and 5th pair just behind stigma; a pair of small setae on integument near posterior dorsal setae, 1 short and the other 2 about 1/2 the size of anterior marginal setae. Integument with striae; mature ♀♀ with transverse suture at level of setae adjacent to posterior margin of shield. Chelicerae strong, with recurved teeth; tectum rounded. Tritosternum much broader than long, with posterior 1/2 wider than anterior portion. Sternal shield with irregular margins, with 3 pairs of marginal setae, without ornamentation; epigynial shield with sclerotic area and a pair of small genital setae; anal shield with paired anal setae; postanal seta not present; integument of venter striated, with wrinkled striae anterior to and laterad from anal shield, as figured. Coxae I with slight ornamentation; other coxae without ornamentation; coxal setae minute except for posterior seta on coxa II. Dorsal setae of leg I long, strong; lateral setae shorter but strong; femora each with 1 long strong seta and 1 minute seta; tarsus I with a pair of strong flattened setae distally, the tips drawn out to a fine point.

♂. Not known.

Holotype ♀ (BISHOP 3656), on *Syconycteris* sp., New Guinea, Mt Missim, 9. I. 1963, BBM-NG 21046, H. Clissold.

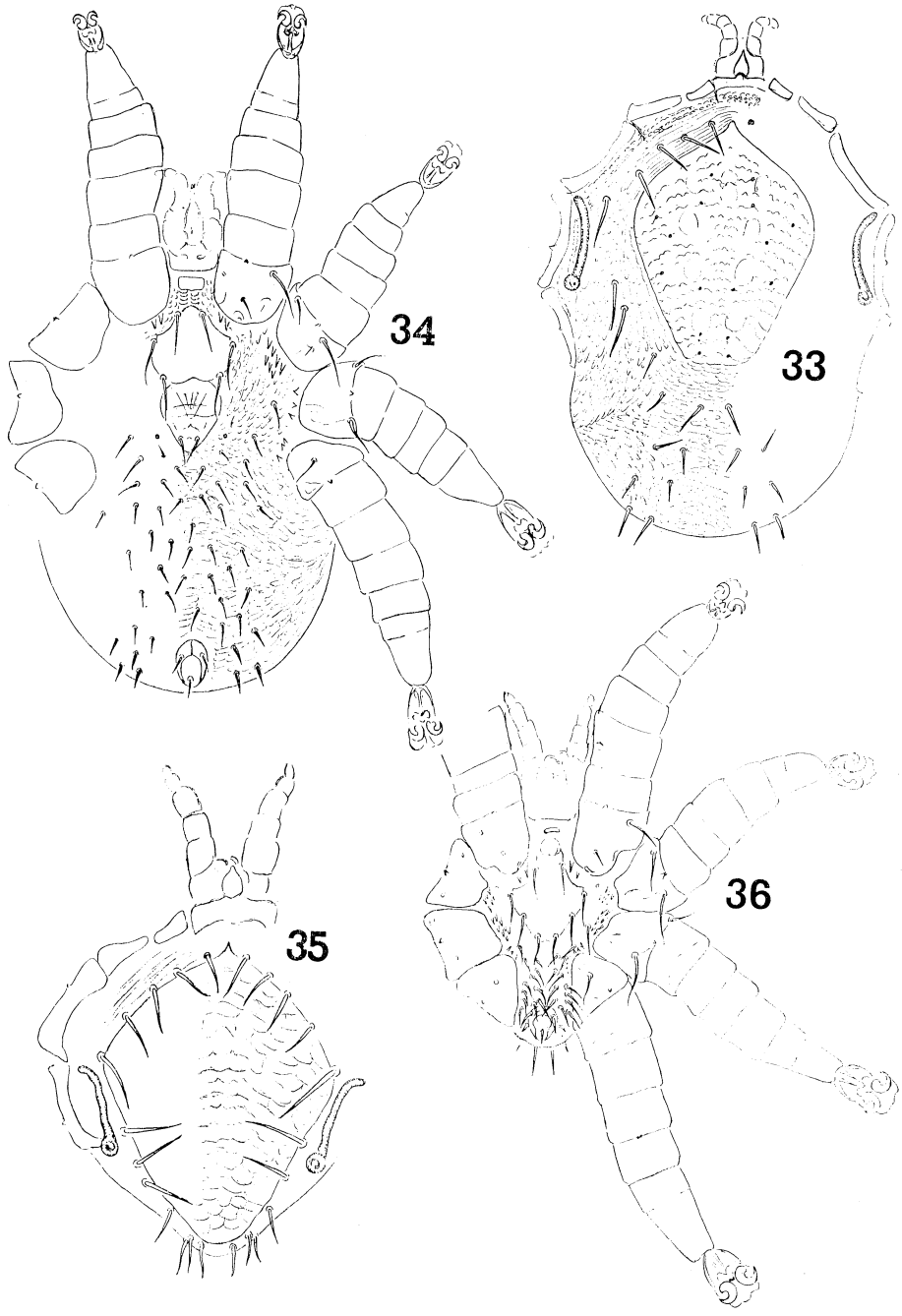
Paratypes: 1♀ on *Syconycteris* sp., West New Guinea, Bokondini, N of Baliem Valley, 1400 m, 17.XI.1961, BMNG 361, L. & S. Quate; 1♀ on *Syconycteris* sp., NW New Guinea, Vogelkop, Kebar Valley, 550 m, 19. I. 1962, BM-NG 790–791, L. & S. Quate; 3 ♀♀ on bat, Wau, NE New Guinea, 26. I. 1962, 1200M, G. Monteith; 4 ♀♀ on *Syconycteris* sp., West New Guinea, Star Mts, Sibil Valley, 1245 m, 8. X. 1961, BM-NG 125, 195, 197, L. & S. Quate.

Genus **Eyndhovia** Rudnick, 1960

Eyndhovia Rudn., 1960, Calif. Publ. Ent. **17** (2): 187.

Eyndhovia euryalis euryalis (Canestrini) Figs. 33–36.

Pteroptus euryalis Canestr., 1884, Atti R. Ist. Venet, Sci. Lett. ed Arti ser. 6, **2** (10): 1657.



Figs. 33–36. *Eyndhovia euryalis euryalis* (Canestrini). 33, dorsal view of body, ♀ ; 34, ventral view of body, ♀; 35, dorsal view of body, ♂ ; 36, ventral view of body, ♂.

Eyndhovia euryalis (Canestr.): Rudnick, 1960, Univ. Calif. Publ. Ent. **17** (2): 188.

Eyndhovia euryalis (Canestr.) has a large tritosternum, a dorsal peritreme, well developed caruncles in the ♀, and 5 pairs of setae surrounding the dorsal shield anterior to the peritreme. The dorsal shield is typically sculptured; the dorsal integument is striated, the pattern being of elongate reticulations laterally and posterior to shield, with simple striae on anterior margins of shield, and with aeroli at edge of body in this region and laterad to peritreme. The tritosternum is rectangular; the sternal shield rounded with concave posterior margin and anterolaterad margins, and with 3 pairs of marginal setae; the genital shield is large and rounded anteriorly with a pair of posterior genital setae; the anal shield is longer than wide, oval, with anal and postanal setae. The ventral striae are elongate reticulations as figured, except for a series of spine-like processes near the coxae—2 at coxa I, 7 (in a double row) at coxa II, 3 at coxa III, and 3 at coxa IV; there are about 23 pairs of short setae on the ventral integument, the last 4 pairs stronger than others. The coxae are lightly ornamented; the dorsal leg setae are long and strong; femur I possesses a pair of long, strong, pilose dorsal setae. The body, not including the gnathosoma, is 600 μ long.

The ♂ is similar, but with a few more spine-like processes than in the ♀. The body is 400 μ long.

Rudnick (1960) reports this species from Corsica, England, Netherlands, Belgium, Germany, South Africa, Japan, Kenya, and the Sudan. Dusbabek (1962) reports it from Czechoslovakia. The specimens figured are from *Rhinolophus cornutus cornutus* near Tokyo, Japan. This species appears to be parasitic upon *Rhinolophus* spp., although one collection was made on *Myotis emarginatus* in the Netherlands.

Eyndhovia euryalis ahi Baker and Delfinado, n. subsp. Figs. 37–42.

This mite from Korea is very similar to *Eyndhovia euryalis euryalis* (Canestrini), but differs in size and in the number of spine-like striae ventrally.

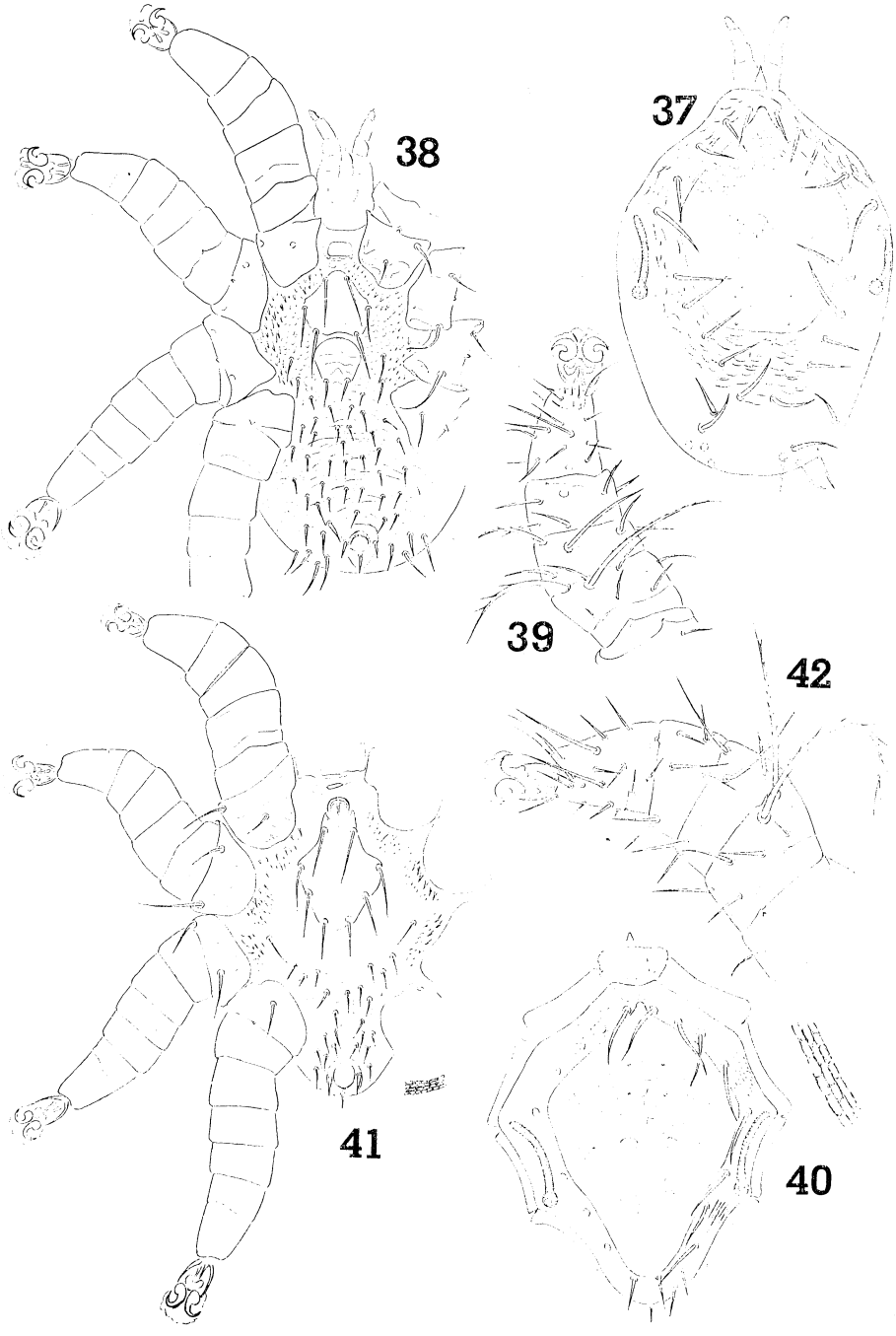
♀. Similar to *Eyndhovia e. euryalis* in setal pattern and shield design. It differs in that the tritosternum possesses a pair of posterolateral internal lobes, and in having 3–4× as many spine-like striae adjacent to the coxae. The sizes also vary, *E. e. ahi* consistently being larger, as indicated below.

♀	*euryalis*	*ahi*
Dorsal shield size	320 μ×247 μ	390 μ×296 μ
Sternal shield size	74 μ×106 μ	84 μ×106 μ
Peritreme length	122 μ	145 μ
Length 5th pair dorsal setae	68 μ	87 μ
Body length and width	600 μ	638 μ

♂. It differs from *Eyndhovia e. euryalis* ♂ in having about 3× as many spine-like striae adjacent to the coxae, as well as in size as noted.

Holotype ♀ (U. S. Nat. Mus. No. 3126), on *Rhinolophus* sp., Yong-Dong-Po, Seoul, Korea, 5. IX. 1956.

Paratypes: 3 ♀♀ and 5 ♂♂ with the above data. 1♂ on *Rhinolophus ferrum-equinum*, from cave, near Seoul, Korea, 30. IX. 1957, H. S. Ah.



Figs. 37–42. *Eyndhovia euryalis ahi*, n. subsp. 37, dorsal view of body, ♀ ; 38, ventral view of body, ♀ ; 39, leg I, ♀ ; 40, dorsal view of body, ♂ ; 41, ventral view of body, ♂ ; 42, leg I, ♂.

♂	*euryalis*	*ahi*
Dorsal shield size	338 μ	**——
*Sternal shield size	106 μ×106 μ	120 μ×113 μ
Peritreme length	113 μ	130 μ
Length 5th pair dorsal seta	74 μ	84 μ
Body length	400 μ	530 μ

*The sternal shield measurements are between the setal bases of the 1st and 3rd pairs of setae longitudinally, and between the setal bases of the 2nd pair transversely.

**Because of the extreme clearing of these mites, it was impossible to see the dorsal shield.

Genus **Paraperiglischrus** Rudnick

Paraperiglischrus Rudn., 1960, Calif. Publ. Ent. **17** (2) : 191.

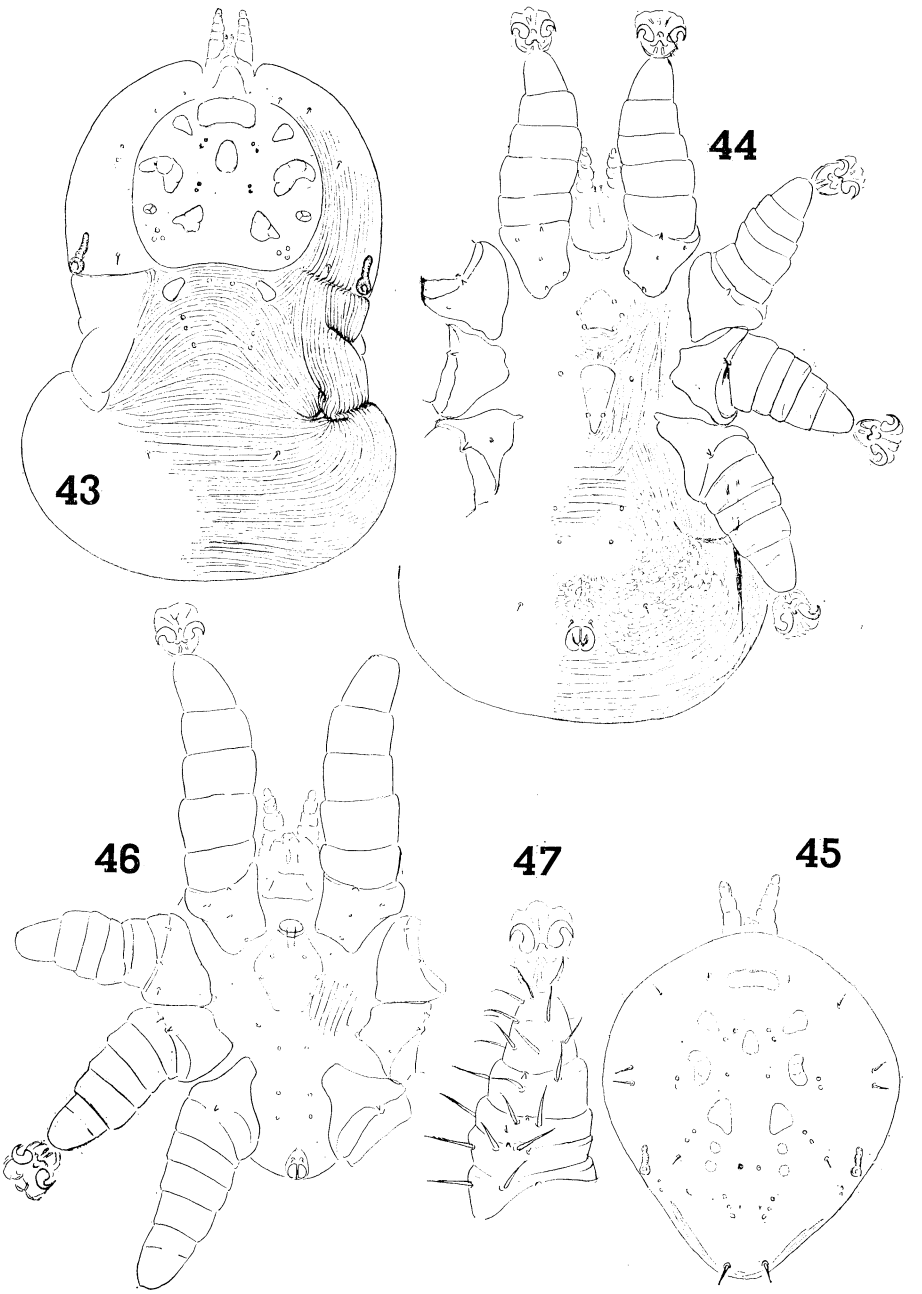
Paraperiglischrus strandtmanni Baker and Delfinado, n. sp. Figs. 43–47.

The sclerotization of the dorsal shield, the folds in the integument of the dorsal surface of the hysterosoma, and the ventral aerolate pattern are distinctive.

♀. Body broad posteriorly, narrowest behind peritremes; body length, excluding gnathosoma, 650 μ; width 465 μ. Dorsal shield small, reaching only to level of peritremes, rounded except for mildly concave posterior margin; sclerotization typical for the species, especially the curved lateral sculpturings: a pair of small platelets without ornamentation near posterior lateral margins of dorsal shield. Integument striated, pattern as figured; with 4 pairs of minute setae anterior to peritreme, a single pair between peritremes and dorsal shield, a minute pair on posterior dorsum of hysterosoma; pores as figured. Peritreme short, lying above coxae III–IV; peritreme about 2× as long as width of stigma. Chelicerae strong, not tapering, with strong, recurved teeth on fixed chela and small teeth on movable chela. Tectum not seen. Palpus short and strong, segments not longer than wide; distal segment reduced. Tritosternum not present. Sternal shield small, about as long as wide, pentagonal, with 3 pairs of minute marginal setae. Epigynial shield longer than wide, and slightly rounded anteriorly, with a pair of minute setae on posterior margin. With 3 pairs of minute setae posterior to epigynial shield. Anal shield ventral, round, with minute anal setae anterior to platelets; postanal seta not present. Venter with striae, except for areolate area laterad and anterior to anal shield. Dorsal leg setae strong, of medium length; ventral leg setae minute. Coxal setae minute; coxae without ornamentation.

♂. Body strongly bleached and impossible to see sclerotization; length, not including gnathosoma, 420 μ; width 370 μ. Ornamentation of dorsal shield appears to be similar to that of ♀. Body setae not subequal in length; anterior pair minute as are setae between peritremes and dorsal shield; other setae stronger, especially posterior marginal pair. Peritreme as in ♀. Chelicerae hooked distally; tectum not seen. Tritosternum not present. Sternal plate as figured, not distinct posteriorly; ventral body setae minute; venter with few simple striae. Anal shield on posterior venter of body; anal setae minute; post anal seta not present. Leg setae as in ♀. Coxal setae minute; coxae without ornamentation.

Holotype ♀ (U. S. Nat. Mus. No. 3127), on *Rhinolophus* sp., Yong-Dong-Po, Seoul, Korea,



Figs. 43–47. *Paraperiglischrus strandtmanni*, n. sp. 43, dorsal view of body, ♀; 44, ventral view of body, ♀; 45, dorsal view of body, ♂; 46, ventral view of body, ♂; 47, leg IV, ♀.

5. IX. 1956.

Paratypes: 4 ♀♀, 5 ♂♂ with above data.

Paraperiglischrus hipposideros Baker and Delfinado, n. sp. Figs. 48–49.

These mites have been cleared and it is almost impossible to see the sclerotic patterns. The ornamental areas of the dorsal shield are similar to those of the preceding species, but the lateral units are not curved. The ventral striation pattern is typical for the species.

♀. Body oval but not broader posteriorly; length of body, not including gnathosoma, 700 μ; width 478 μ. Dorsal shield not seen, but sclerotic areas similar to those of preceding species except as noted above. Integument with striae, visible on venter where it forms a characteristic W-pattern. Peritremes short, about 2× as long as stigma is wide. Chelicerae strong, not tapering, fixed chelae with strong, recurved teeth; movable chelae with minute teeth. Palpus short and stout, segments not as long as wide, distal segment greatly reduced. Tectum not seen. Tritosternum not present. Sternal shield not visible; setal locations as figured. Epigynial shield broader than in preceding species. All ventral setae minute. Anal shield ventral and terminal; anal setae minute, anterior to anus; postanal setae not present. Ventral striae unique, forming a W-pattern; area laterad and anterior to anus darkly sclerotized. Dorsal shield not seen; dorsal body setae minute. Dorsal leg setae of medium length to long; ventral leg setae minute. Coxal setae minute; coxae without ornamentation.

♂. Not known.

Holotype ♀ (BISHOP 3657), on *Hipposideros* sp., New Britain, 180 m, 23. XI. 1959, TMP 1248–63, T. C. Maa.

Paratypes: 7 ♀♀ with the above data; 1 ♀ on *Hipposideros* sp., West New Guinea, Star Mts, Sibil Valley, 124 m, 18. XI. 1961, B 888, L. & S. Quate; 3 ♀♀ on bat, New Britain, Keravat, 6. IX. 1957, G. P. Holland; 1 ♀ on *Phileter* sp., NE New Guinea, NE Kassam, 48 km E of Kainantu, 1. XI. 1959, TMP 1160, Maa & van Deusen.

Genus **Periglischrodes** Baker and Delfinado, n. gen.

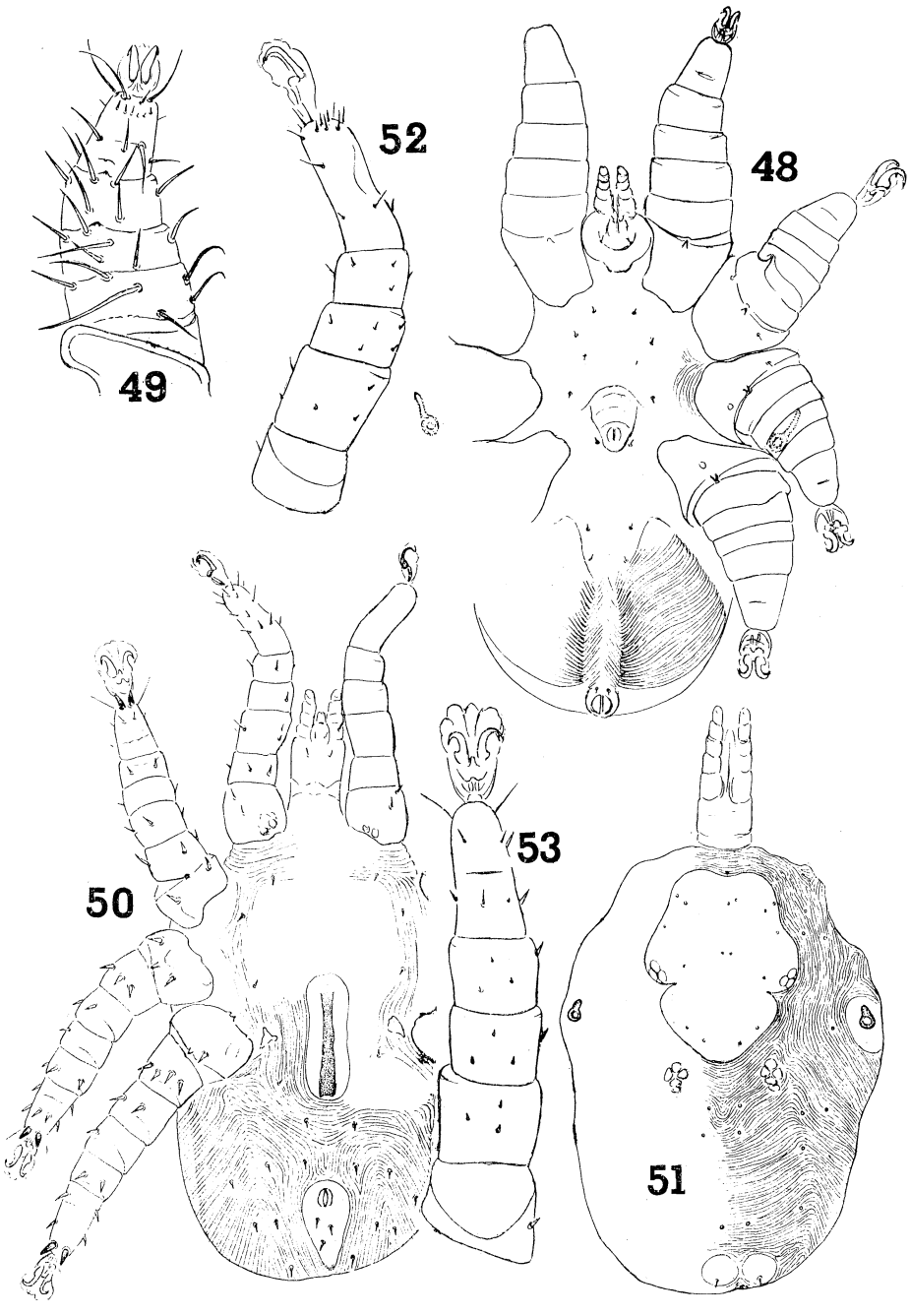
This genus is related to *Paraperiglischrus*, but differs in several details. It possesses a pair of short, stout, spine-like setae on the distal-ventral surface of tarsi II–IV; there is a postanal seta; the paired anal setae are posterior to the anal platelets; the sternal setae are on the integument; the chelicerae are elongate and slender, and have short, stout chelae without teeth; there is a platelet posterior to and dorsal from the anal shield; there is no tritosternum; the peritreme is short, no longer than the width of the stigma, and lies in a distinct oval plate.

Type: *Periglischrodes gressitti*, n. sp. By present designation.

Periglischrodes gressitti Baker and Delfinado, n. sp. Figs. 50–53.

The long epigynial shield, the location of the anal setae, and the dorsal plates are characteristic for this species.

♀. Body broadest at area of peritreme; length, not including gnathosoma, 925 μ; width 640 μ. Dorsal shield small, longer than wide, strongly indented laterally, and with typical



Figs. 48–53. 48, *Paraperiglischrus hipposideros*, n. sp., ♀, ventral view of body; 49, same, leg I; 50, *Periglischrodes gressitti*, n. sp., ♀, ventral view of body; 51, same, view of body; 52, same, leg I; 53, same, leg IV.

sculpture pattern; posterior to and laterad from margin of dorsal shield are 2 small shields, each composed of 5 platelets; on posterior dorsal margin of body a small shield constricted medially and bearing a pair of minute setae. Peritreme short, no longer than width of stigma, lying in an oval shield. Three pairs of minute setae on integument anterior to peritremes, 1 pair between peritreme and dorsal shield; a single median seta just anterior to dorsal shield; other setae as figured. Chelicerae elongate, expanded proximally, and with short, stout, smooth chelae. Palpus short and strong, segments as long as wide; the distal segment reduced. Tectum not seen. Tritosternum not present. Sternal shield longer than wide; sternal setae on integument. Epigynial shield long, rounded, sclerotized medially; no genital setae appear to be present. Anal shield longer than wide, teardrop shape, with anal and postanal setae posterior to anal platelets. All ventral setae minute but stout. Venter covered with simple striae. Dorsal leg setae minute; ventral and lateral by setae short and strong. Coxa I lightly ornamented; other coxae without ornamentation; coxal setae short and strong and subequal in length.

♂. Not known.

Holotype ♀ (BISHOP 3658), on unknown host, Bulolo, New Guinea, 7. II. 1962.

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