Acarologia is proudly non-profit, with no page charges and free open access

Please help us maintain this system by encouraging your institutes to subscribe to the print version of the journal and by sending us your high quality research on the Acari.

Subscriptions: Year 2021 (Volume 61): 450 €
http://www1.montpellier.inra.fr/CBGP/acarologia/subscribe.php
Previous volumes (2010-2020): 250 € / year (4 issues)
Acarologia, CBGP, CS 30016, 34988 MONTFERRIER-sur-LEZ Cedex, France
ISSN 0044-586X (print), ISSN 2107-7207 (electronic)

The digitalization of Acarologia papers prior to 2000 was supported by Agropolis Fondation under the reference ID 1500-024 through the « Investissements d’avenir » programme (Labex Agro: ANR-10-LABX-0001-01)

Acarologia is under free license and distributed under the terms of the Creative Commons-BY.
TWO NEW GENERA OF MITES ASSOCIATED WITH STINGLESS BEES
(ACARINA, LAELAPTIDAE) 1

BY

Preston E. Hunter 2

Included in a collection of mites associated with stingless bees from Barro Colorado Island, Panama Canal Zone, were two species which did not fit any described genera. Both species belong to the family Laelaptidae (Hypoaspidae) and are here described as new genera.

**Bisternalis** new genus.

This genus is characterized in having the dorsal plate completely covering the dorsum, the dorsal setae simple or only slightly modified, the gnathosoma located ventrally and not visible from above, and in having the first pair of sternal setae arising from a small, separate, anterior plate while the second and third pairs of setae arise from the main portion of the sternal plate. In the female the genitoventral plate widens behind coxa IV, extends posteriorly to the anal plate, and on the surface of the posterior half has a series of V-shaped striations; the sternal plate has only one pair of sternal pores. With the exception of the small anterior plate giving rise to the first pair of sternal setae, the male has a single ventral plate. The specialized seta on the palpal tarsus is two tined. Type species, *B. rettenmeyeri*, new species.

This genus shows some affinity to the genus *Laelaspis* especially in the structure of the genitoventral plate; however, it differs from that genus in the absence of any strong modification of the dorsal setae and in the position and origin of the sternal setae as well as in the shape of the ventral plates. The divided sternal plate appears to be unique for the Laelaptidae mites.

---

1. Journal Paper No. 235 of the College Experiment Station of the University of Georgia College of Agriculture Experiment Stations, Athens, Georgia.
2. Department of Entomology, University of Georgia, Athens, Georgia.

**Bisternalis rettenmeyeri** new species.

**FEMALE.** Body broadly oval, 650 μ long, 480 μ wide. Dorsal setae up to 75 μ long, simple except for one spined pair on the posterior margin of the dorsal plate. Dorsal plate with faint striations on lateral and posterior margins (fig. 1A).

**Ventral surface.** The first pair of sternal setae arise from a small separate anterior plate, the lateral anterior margins of which are membranous and separated by a line or suture from the sclerotized plate itself (fig. 1B and C); the tritosternum, consisting of a basal portion and two feathery lacinae, arises from the integument in a concave area of the anterior margin of this plate. The second and third pairs of sternal setae arise from a large plate strongly concave posteriorly; this plate measures 90 μ long on its midline and 290 μ wide between coxae II and III. Only one pair of sternal pores, between the second and third sternal setae, occur on this plate. Metasternal plate consists of a heavily sclerotized outer bar that connects anteriorly with a wider, median section from which the metasternal seta arises (fig. 1D). Genitoventral plate 430 μ long on its midline measured from the posterior margin of the sternal plate, 230 μ in greatest width; striations of the plate are shown in fig. 1B; posteriorly the plate has a shallow, median indentation; one pair of setae — the genital — arise from the surface of the plate. A single parapodal plate is located postero-laterally to coxae IV. Metapodal plate an elongate oval shape. Anal plate crescent-shaped, with the median anterior margin convexed above the anal opening; three strong setae arise from this plate as shown in fig. 1B. Ventral body setae spinelike, arising from small, sclerotized platelets in the integument; their number and arrangement as shown in fig. 1B. Peritremal plate only slightly wider than peritreme, extending posteriorly of stigmatal opening. Peritreme extending anteriorly to area above coxa I.

**Legs.** Setae spinelike; femora of all legs with lanceolate shaped setae on the dorsal apical portion; most segments heavily sclerotized on anterior and posterior margins; all tarsi with well-developed claws. Legs, including claws and coxae, measure as follows: leg I, 390 μ; leg II, 365 μ; leg III, 420 μ; and leg IV, 555 μ.

**Gnathosoma** small, located ventrally on the propodosoma; not visible from above. Specialized setae on palpal tarsus with two tines. Chelicerae strongly chelate (fig. 1E) with a small, spine-like pilus dentalis.

**MALE.** Smaller and more elongate than female; 540 μ long, 350 μ wide. Striations of dorsal plate (fig. 2A) not as distinct as in female. Dorsal setae as in female.

**Ventral surface.** Small anterior plate as in the female, from which arises the first pair of sternal setae (fig. 2B and C); anterior lateral margins of this plate
Fig. 1. — Bisternalis rettenmeyeri n. sp., female. A, dorsal view; B, ventral view; C, first pair of sternal setae; D, metasternal plate; E, chelicera.
membranous; genital opening located just in front of the concave, anterior margin of this plate. Tritosternum located anterior to genital opening. Remaining ventral plates fused into a single plate 450 μ long, 210 μ wide between coxae II and III, 195 μ wide behind coxae IV; with two pairs of sternal pores; number and position of setae as shown in fig. 2B. Parapodal plates as in female. Peritremal plate only slightly wider than peritreme and extending posterior to stigmata. Ventral body setae arising from small platelets; these platelets not as heavily sclerotized as in female.

**Legs.** All femora with one lanceolate or spinelike seta on dorsum; all tarsi with claws. Legs, including claws and coxae, measure as follows: leg I, 380 μ; leg II, 340 μ; leg III, 400 μ; and leg IV, 500 μ.

**Gnathosoma** small, ventrally on the propodosoma so that it is not visible from above. Chelicera chelate, with a digit-like spermatodactyl (fig. 2D); without the distinct teeth of the female.

This species is described from 17 females and one male collected by C. W. and M. E. Rettenmeyer, Barro Colorado Island, Panama Canal Zone, 1956. The mites were collected from "berlese of Trigona combs" and "in and on stingless bee cells." Three nymphs, presumably of this species, were also present in the berlese material.

The female holotype and paratypes, and the male allotype will be deposited in the U. S. National Museum, Washington, D. C. Female paratypes will be deposited with the British Museum of (Natural) History, London, and the Institute of Acarology, Wooster, Ohio. The remaining paratypes will be retained in the Department of Entomology, University of Georgia, Athens.

The presence of only one pair of sternal pores on the sternal plate in the female and the absence of the first pair of sternal pores on the sclerotized plate in the male, indicates that the small plate giving rise to the anterior pair of ventral setae is a part of the sternal plate and not a jugular plate.

**Stevelus** new genus.

This genus is characterized as follows: dorsal plate undivided, covering only about 2/3 of dorsum, not extending to the lateral or posterior margins of the body; dorsal plate setae spiny; gnathosoma small, not visible from above; chelicerae weakly chelate, digits without teeth; legs I thick, dorsally with long spiny setae on genu and femur, ventrally with short setae; tarsi of all legs end in an elongate caruncle, claws absent; sternal plate with three pairs of setae; genital plate with one pair of setae; anal plate small, well separated from genital plate; peritremal plate present. The specialized seta on the palpal tarsus has two tines. Type species, *S. amiculus*, new species.

This genus has several characteristics in common with the genus *Dinogamasus* which is also associated with bees; however, the two genera are readily sepa-
FIG. 2. — *Bisternalis rettenmayeri* n. sp., male. A, dorsal view; B, ventral view; C, first pair of sternal setae; D, chelicera.
rated by a number of characters especially by the fact that *Dinogamasus* has only two pairs of setae on the sternal plate, and no setae on the genital plate. The setae of legs I and II are distinctly different in the two genera.

**Stevelus amieulus** new species.

Only the female is known. Greatest length and width of body is 600 μ and 305 μ respectively. Dorsal plate 485 μ long, 225 μ wide; slipper shaped, does not reach the lateral or posterior margins of the body (fig. 3A). Dorsal plate setae are heavy and spinelike, one pair, 50 μ long, on the posterior margin of the plate are distinctly longer and heavier than the others. Striations on the plate limited to the anterior lateral margins; however, distinct areas of muscle attachment can be seen in the middle of the plate. Setae on the non-sclerotized area of dorsum simple, rather spinelike and arise from the posterior half of the body only.

**Ventral surface.** Sternal plate rectangular in shape, 170 μ long, 145 μ wide; bearing three pairs of setae and two pairs of pores (fig. 3B). Integument semi-sclerotized anterior to the sternal plate. Tritosternum consists of a basal segment and two fleshy lacinae which bear terminally a few minute spines (fig. 3C). Meta-sternal setae arise from the integument; metasternal plates absent. Genital plate short, 160 μ long, of approximately the same width — 70 μ — throughout (this plate was moved from its normal position in mounting); genital setae arise from the surface of the plate; striations on the plate are shown in fig. 3B. Anal plate round, 60 μ long and 70 μ wide; well separated from genital plate; posterior, unpaired setae distinctly heavier than paired anal setae; striations as illustrated. Nine pairs of simple, short body setae arise from the integument ventrally as shown in fig. 3B. Metapodal and parapodal plates absent. Peritreme plate only slightly wider than peritreme, ending posteriorly in a rounded point just past stigmata; peritreme wide, ending anteriorly at the level of coxa II.

**Legs.** Legs I distinctly thicker than others; genu and femur of legs I and II with long spinelike setae dorsally; all legs with short setae ventrally; all tarsi without claws; tarsi ending in a padlike caruncle (fig. 3D). Tarsus I with one whiplike seta ventrally; the other ventral setae simple and, except for length, similar in appearance; dorsally (fig. 3D) bearing three diagonal rows of very short, peglike setae on the terminal half, and in front of these a single, small clublike striated seta. Legs, including coxae and caruncles, measure as follows: leg I, 400 μ; leg II, 325 μ; leg III, 370 μ; and leg IV, 420 μ.

**Gnathosoma** small, located ventrally on the propodosoma, not visible from above; hypostomal setae short; deutosternal groove with several teeth/row in posterior rows, fewer teeth/row in anterior rows. Palps moderately strong, with minute setae. Chelicerae weak, chelate, neither digit with teeth (fig. 3C); digits partially embedded in the fleshy terminal end of the last cheliceral segment.
Fig. 3. — *Stelius amicus* n. sp., female. A, dorsal view; B, ventral view; C, tritosternum; D, terminal half of tarsus I, dorsal view; E, chelicerae.
The only specimen, a female, was collected by C. W. and M. E. Rettenmeyer, Barro Colorado Island, Panama Canal Zone, and had the following data: "on and in stingless bee cells." The specimen contained one egg in the hysterosomal area of the body. The holotype will be deposited in the U. S. National Museum, Washington, D. C.