

THE GENUS *ANTENNURELLA* BERLESE AND DESCRIPTIONS
OF TWO NEW SPECIES OF *SIMILANTENNURELLA* GEN. NOV.
(ACARINA : TRIGYNASPIDA : KLINCKOWSTROEMIIDAE)¹

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SYSTEM
OF
KLINCKOWSTROEMIIDAE

SYSTÈME
DES
KLINCKOWSTROEMIIDAE

ABSTRACT : The genus *Antennurella* Berlese and its two known species are rediagnosed. A new genus, *Similantennurella*, and 2 new species, *S. spinata* and *S. aspinata*, are described and illustrated. A key to the four genera of the Klinckowstroemiiidae is included.

RÉSUMÉ : Cette étude propose une nouvelle description du genre *Antennurella* Berlese et de ses deux seules espèces connues. Un nouveau genre, *Similantennurella*, et deux nouvelles espèces, *S. spinata* et *S. aspinata* sont également décrits et illustrés. Une clé permettant d'identifier les quatres genres de Klinckowstroemiiidae est proposée.

INTRODUCTION

ROSARIO and HUNTER (1987) gave the general morphology and characteristics of the mite family Klinckowstroemiiidae Trägårdh. Three genera — *Klinckowstroemia* Trägårdh, *Klinckowstroemiella* Turk and *Antennurella* Berlese — have been described in this family. The first two genera were reviewed in earlier papers (ROSARIO and HUNTER, 1987; ROSARIO and HUNTER, 1988). The genus *Antennurella* is considered in this paper. In addition, a new genus, based on two new species, is described.

Klinckowstroemiiids are known from passalid beetles from Mexico, Central and South America. These mites do not appear to be host specific as one mite species has been found on different beetle

hosts. At this time data is not available to determine whether an individual beetle normally harbors only one klinckowstroemiid species at a time. However, the majority of over 100 individual beetles examined had only one species of Klinckowstroemiiid.

In the following species descriptions, all measurements are given in microns (μm). Specific structures are named and letter abbreviations are assigned for each as follows : aa — anteroanal seta ; *a1...a9* — anterior hyaline hood setae ; GO — genital opening ; HF — hyaline flange ; HH — hyaline hood ; LgA — latigynial apodeme ; LgC — latigynial condyle ; LgS — latigynial shield ; MgA — mesogynial apodeme ; MgC — mesogynial condyle ; MgS — mesogynial shield ; MS — metapodal

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suture; pa — paranal setae; SgA — sternogynial apodeme; SgC — sternogynial condyle; SgS — sternogynial shield; SpA — Sternopodal apodeme; StS — sternal shield; SvS — sternoventral suture; Tst — tetartosternum; VaS — ventroanal shield. The terminology for leg setae follows that of EVANS (1963).

Genus *Antennurella* Berlese, 1904

Antennurella BERLESE, 1904; CAMIN and GORIROSSI, 1955 : 52; KETHLEY, 1977 : 137.
Eufedrizza SELLNICK, 1938 : 185.
Neouudemansia TRÄGÅRDH, 1938 : 137; BAKER and WHARTON, 1952 : 132.

DIAGNOSIS OF ADULTS. Anal shield separate from ventral shield. Metapodal, peritremal, exopodal and ventral shields fused, metapodal suture absent. Hyaline hood extending around entire idiosoma (Fig. 1 A), anterior dorsal portion of hood with more than one row of simple setae (Fig. 1 B), the *a* series setae longer than the posterior rows, seta *a*3 longer than other setae. Dorsal shield with an even margin (without constrictions). Seta av2 on femur IV not arising from tip of protuberance (Fig. 1 F). Postero-anal setae longer than other setae on anal shield. Female sternogynial shields without setae. Males lack sternoventral suture (Fig. 1 C).

TYPE-SPECIES. *Antennurella trouessarti* Berlese, 1904 (by original designation).

Antennurella trouessarti Berlese

Antennurella trouessarti BERLESE, 1904 : 268; LOMBARDINI, 1949 : 10; HYATT, 1964 : 497; KETHLEY, 1977 : 137.
Trachyuropoda tricuspis BANKS, 1914 : 162.
Eufedrizza tricuspis : SELLNICK, 1938 : 185.

DIAGNOSIS OF ADULTS. Setae *a*3 longer than other *a* setae, *a* setae simple (Fig. 1 B), outer row of setae on lateral and posterior hyaline hood spatulate, inner row simple (Fig. 1 D), posterior pair of setae on hyaline hood long pilose, spatulate (Fig. 1 A). Posterior portion of dorsal shield with 3 ridges

(Fig. 4 G). Median margin of female latigynial shields pointed, each shield with 3 simple, subequal setae; reticulations as illustrated (Fig. 1 E). Paranaals heavier than other setae on anal shield (Figs. 1 A, 1 C). Seta av2 on leg femora II-IV slightly barbed (Fig. 1 F).

TYPE LOCALITY. Pará, Brazil; female, from *Passalus* spp.

MATERIAL FROM OTHER LOCALITIES. Rio de Janeiro, Brazil, from *Passalus rusticus* and *P. interruptus*; São Paulo, Brazil, from *P. punctatissimus* and *P. coniferus*; Los Tuxtlas, Veracruz, Mexico, from *Popilius* sp. and *Ptichopus angulatus*; Rincon, Costa Rica, from unidentified passalid; Barro Colorado Is., Panama Canal zone, from *Passalus interruptus* and *P. punctiger*.

LOCATION OF TYPES. Unknown.

Antennurella trägårdhi (Baker and Wharton)

Neouudemansia sp. TRÄGÅRDH, 1938 : 137.
Neouudemansia trägårdhi BAKER and WHARTON, 1952 : 132.

TRÄGÅRDH (1938) erected a monotypic genus (*Neouudemansia*) to accommodate a new mite which he examined and sketched, but did not name. BAKER and WHARTON (1952) validated the genus by naming TRÄGÅRDH's mite *Neouudemansia trägårdhi*. TRÄGÅRDH (in TURK, 1948) later concluded that *Neouudemansia* Trägårdh and *Eufedrizza* Sellnick were synonyms of *Antennurella* Berlese. CAMIN and GORIROSSI (1955) agreed with this conclusion. Although TRÄGÅRDH's (1938) sketch of the female genital shields is similar to that of *Antennurella trouessarti*, the two species have not been synonymized. Until the two types are examined, the genus *Antennurella* must be considered as having two species.

The following diagnosis is based on TRÄGÅRDH's (1938) original illustrations of the female: Tetartosternum with shallow notch; lyriform sternal pore 1 near posterior margin of shield and posterior to sternal seta 1; sternal seta 1 simple, near anterior margin of tetartosternum, setae 2-4 simple, seta 1

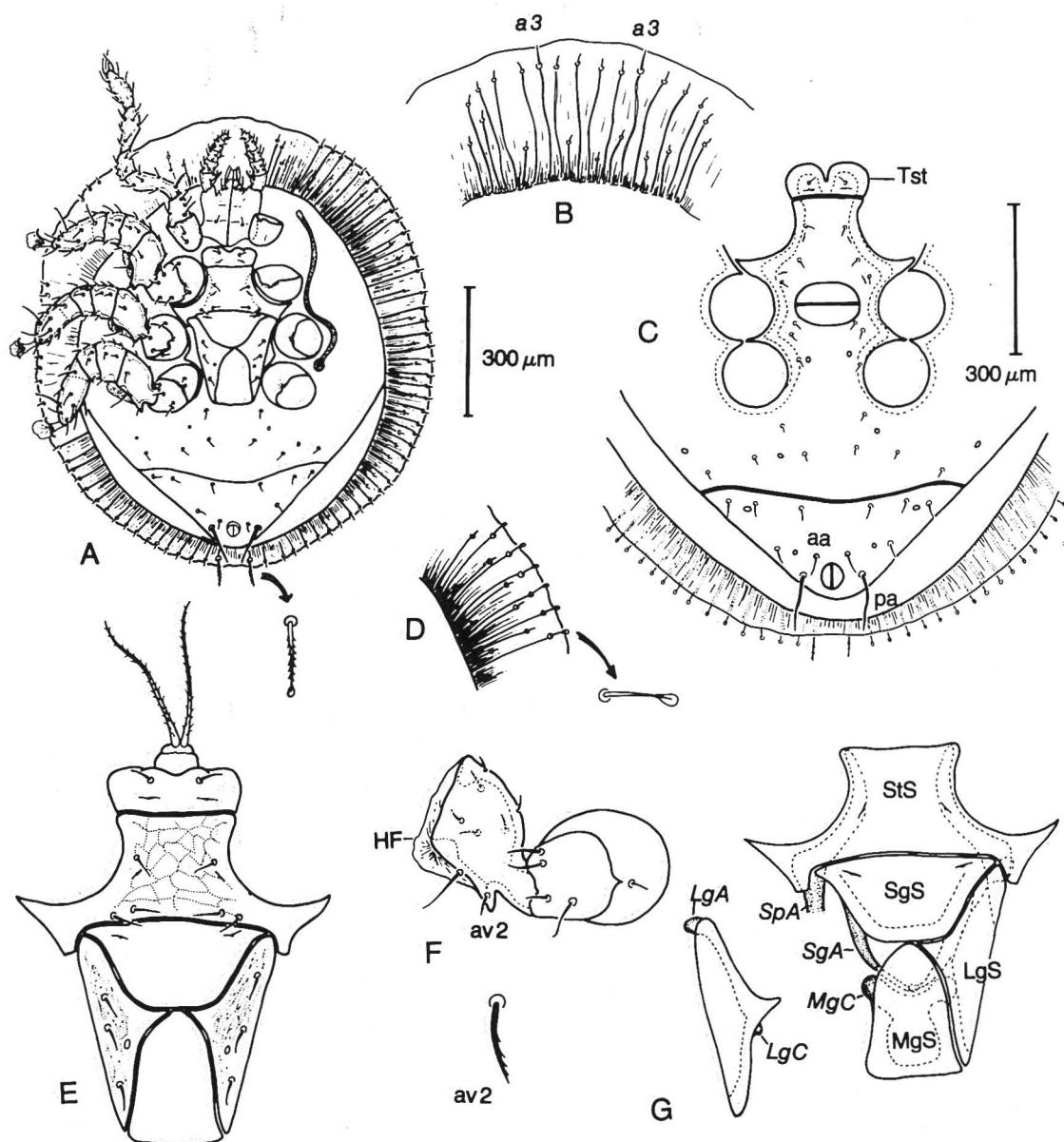


FIG. 1 : *Antennurella trouessarti* Berlese.

A. — Ventral view of female. B. — Anterodorsal view of hyaline hood. C. — Male ventral shields. D. — Dorsal view of lateral hyaline hood. E. — Female tritosternum, tetartosternum, sternal and genital shields. F. — Coxa, trochanter and femur IV. G. — Female sternal and genital shields.

longest. Sternogynial triangular, sternogynial apodeme extending posteriorly to level of mesogynial shield apex. Latigynials pointed medially, with 3 simple setae and 1 pore on each shield. Mesogynial blunt anteriorly.

LOCATION OF TYPES. Unknown.

Genus **Similantennarella** gen. nov.

DIAGNOSIS OF ADULTS. Anal shield separate from ventral shield. Metapodal and exopodal shields fused, separated from ventral shield by metapodal suture. Hyaline hood forming crescent over gnathosoma and extending to or beyond level of anterior margin of anal shield, never surrounding entire idiosoma. Dorsal shield with an even margin, posterior portion of shield with or without dorsal ridges. Each seta av2 on leg femora II-IV arising from tip of protuberance. Paranal setae always longer than other setae on anal shield. Female sternogynial and mesogynial shields with setae, latigynial shields L-shaped. Sternoventral suture absent in males.

TYPE SPECIES. *Similantennarella spinata* sp. nov.

Similantennarella spinata sp. nov.

FEMALE. Body rounded (Fig. 2 A); idiosomal length 1345 ± 47 , width 1123 ± 23 ($N = 6$).

Dorsal shield entire, punctate-reticulate; with 3 dorsoposterior protuberances (Fig. 4 F). Hyaline hood forming anterior crescent above gnathosoma and extending posterior to anal opening (Fig. 2 A); setae $a1-a9$ simple, seta $a3$ long (Fig. 2 B), smaller setae along lateral margins of hood.

Tritosternal base rounded. Tetartosternum (Fig. 2 E) 81 long, 165 wide, with shallow tetartosternal notch; 2 small lateral notches on anterior margin; sternal pores 1 on posterior half on shield, sternal seta 1 simple, near anterior margin of shield. Sternal shield (Fig. 2 E) 113 long, 412 wide, all sternal setae simple, seta 2 arises anterior to pore 2, seta 3 longest of sternal setae; reticulations as illustrated. Genital shields and reticulations as

illustrated (Fig. 2 E). Sternogynial shield lightly punctate, with sternal pores 3, and 4-5 pairs of short simple setae; posterior shield margin truncate, sternogynial apodeme rounded with a median protuberance (Fig. 2 G). Latigynial shields each with 5-6 simple setae and 1 pore, shields L-shaped, with medial extensions blunt. Mesogynial shield broadly triangular, rounded at apex, convex at base, 1 pair of pilose setae, mesogynial condyles extend beyond level of shield apex. Shape of vaginal apodemes as illustrated (Fig. 2 F, 2 G). Ventral shield 225 long, 574 wide, broadly triangular, truncate posteriorly; reticulate, 10-11 pairs of pilose setae. Anal shield 254 long, 574 wide, anterior margin truncate, 2 pairs of simple setae plus longer pilose paranals, surface of shield covered with numerous thorn-like setae.

Hypostomal setae pilose, capitulars simple; capillary setae shorter than other gnathosomal setae. Palps with barbed setae except those on tarsi.

Most setae on leg I weakly barbed or pilose. Legs II-IV with short simple setae and some weakly barbed setae, each seta av2 on femora II-IV weakly barbed (Fig. 2 D).

MALE. Idiosoma 1290 long, 1123 wide (measurements for only 1 male, other male with dorsal shield fractured). Dorsal and leg characters as in female. Tetartosternum boomerang-shaped, with narrow tetartosternal notch (Fig. 2 C). Ventral shield with 19-20 pairs of setae, 4-5 anterior pairs pilose, 8 median pairs thick, longer and spinelike; reticulations as illustrated (Fig. 2 C). Genital opening oval, 85 long, 97 wide. Anterior margin of anal shield concave.

TYPES. Described from 6 females and 3 males. Holotype female, 1 female paratype, Sirena, Osa Peninsula, Prov. Puntarenas, Costa Rica, 2 March 1981, from *Passalus (Passalus) punctiger* Lepeletier et Séville, R. W. MATTHEWS; 1 male, 3 female paratypes, Sirena, Prov. Puntarenas, Costa Rica, 8 March 1981, from unidentified passalid, R. W. MATTHEWS; 1 male, 1 female paratypes, Rincon, Osa Peninsula, 20 June 1970, from unidentified passalid, M. S. BLUM; 1 male, Barro Colorado Is., Panama Canal zone, 10 July 1956, from unidentified passalid, C. W. RETTENMEYER.

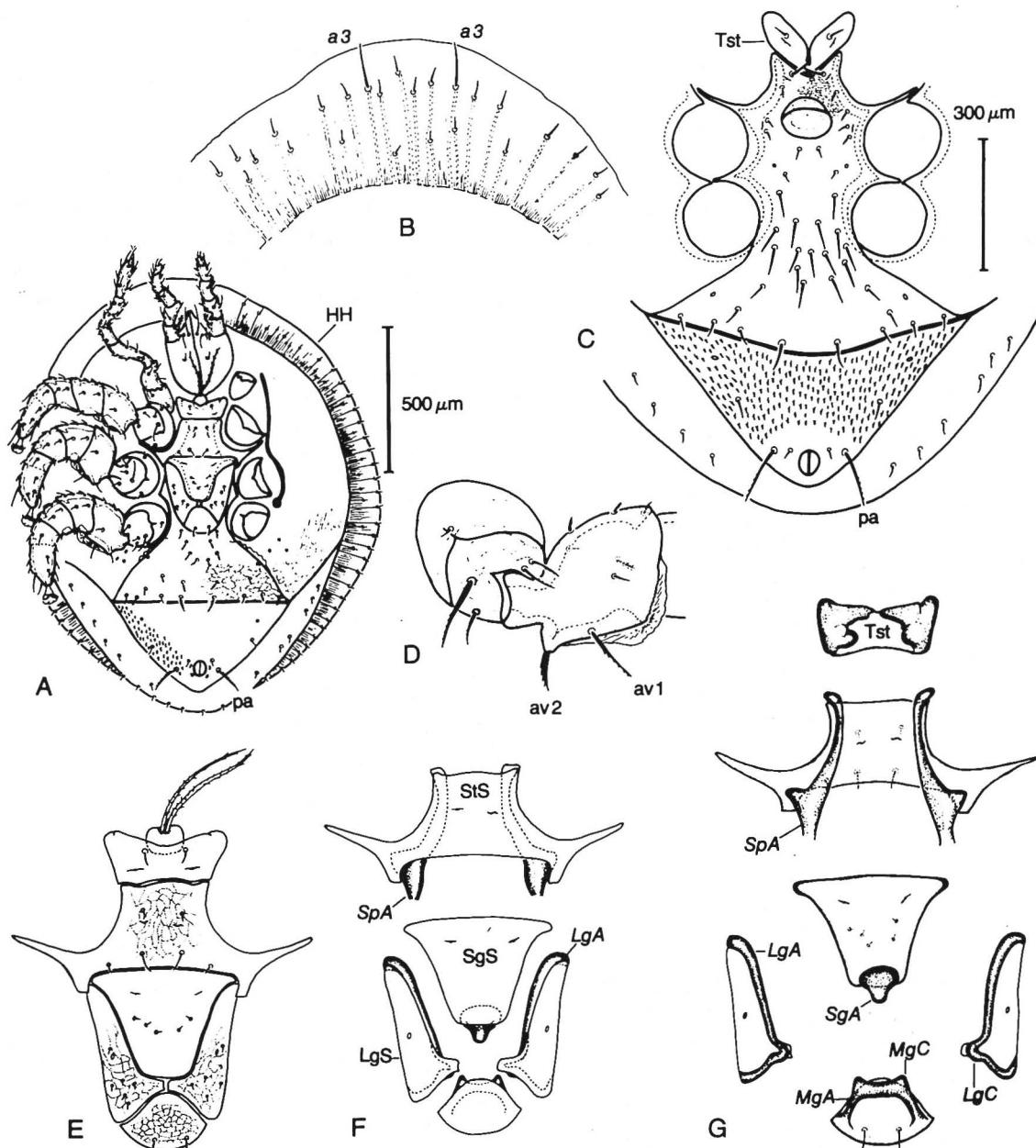


FIG. 2 : *Similantennarella spinata* sp. nov.

- A. — Ventral view of female. B. — Anterodorsal view of hyaline hood. C. — Male ventral shields. D. — Coxa, trochanter and femur IV. E. — Female tritosternum, tetartosternum, sternal and genital shields. F. — Exploded view of female sternal and genital shields. G. — Internal view of female tetartosternum, sternal and genital shields.

Holotype female, 1 female and 1 male deposited in the National Museum of Natural History, Washington, D.C.; 1 female and 1 male each deposited in Dept. of Entomology, Univ. of Georgia, Athens, and Field Museum of Natural History, Chicago, Illinois; 1 female each deposited in the Universidad Nacional Autonoma de Mexico, Mexico, and the Acarology Laboratory, Columbus, Ohio.

ETYMOLOGY. The species name *spinata* refers to the thorn-like setae present on the anal shield.

Important diagnostic characters of those characters which vary from those of *S. spinata* will be described for the next species.

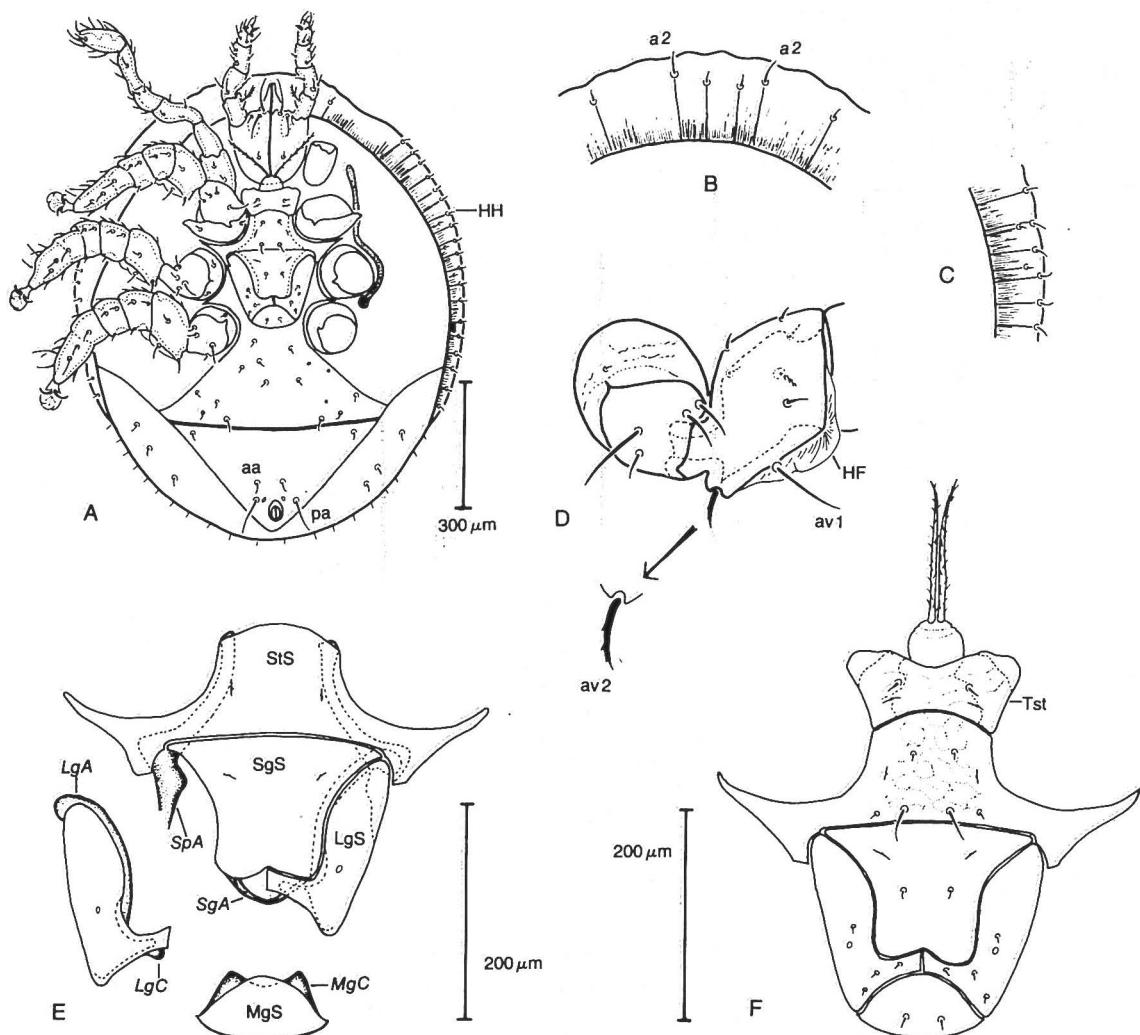


FIG. 3 : *Similantennurella aspinata* sp. nov.

A. — Ventral view of female. B. — Anterodorsal view of hyaline hood. C. — Dorsolateral view of hyaline hood. D. — Coxa, trochanter and femur IV. E. — Female sternal and genital shields. F. — Female tritosternum, tetartosternum, sternal and genital shields.

***Similantennurella aspinata* sp. nov.**

FEMALE. Body rounded (Fig. 3 A); idiosoma 1290 long, 1030 wide.

Hyaline hood extending posteriorly to level of anterior margin of anal shield (Fig. 3 A); setae *a1-a3* simple, *a2* longest (Fig. 3 B).

Tritosternal base rounded. Tetartosternum (Fig. 3 F) 73 long, 166 wide, with evenly concave indentation on middle of anterior margin, sternal seta 1 small, simple, near midline of shield, anterior to sternal pore 1. Sternal shield (Fig. 3 F) 109 long, 403 wide,

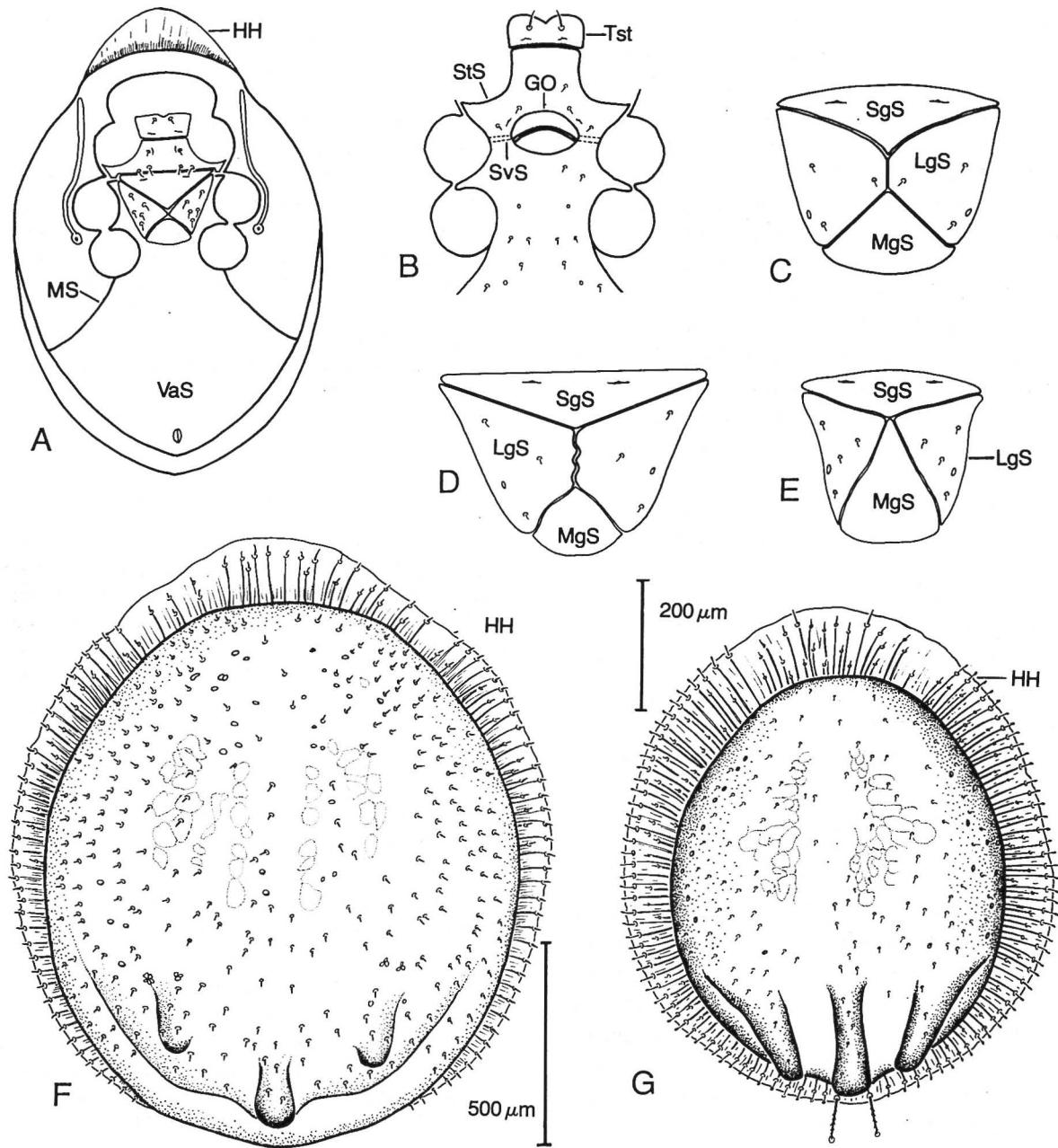


FIG. 4 : *Klinckowstroemiella blumae* Rosario et Hunter, 1987

A. — Ventral view of female. B. — Anteroventral view of male. C. — Genital shields of *Klinckowstroemia reyesi*. D. — *K. victoriae*. E. — *K. starri*. F. — Dorsal shields of *Similanternurella spinata* sp. nov. G. — *Antennurella trouessarti*.

seta 2 arise anteromedial to pore 2, setae 3 and 4 near posterior margin of shield, sternal seta 3 longest, setae 2 and 4 subequal; reticulations as illustrated. Sternogynial shield lightly punctate, 1 pair of small, simple setae; posterior bilobed, sternogynial apodeme small, reaching level of latigynial condyles. Latigynial shield L-shaped, with margins of extensions straight medially, each with 4 small setae and 1 pore, shield lightly punctate. Mesogynial shield with anterior margin convex, 1 pair of small simple setae, shield lightly punctate. Shape of vaginal apodemes as illustrated (Fig. 3 E). Ventral shield 276 long, 629 wide, broadly triangular, truncate posteriorly, 8 pairs of small, simple setae, shield lightly reticulate. Anal shield 276 long, 598 wide, anterior margin almost truncate, with 3 pairs of simple setae, shield lightly reticulate.

Each seta av2 on femora II-IV weakly barbed (Fig. 3 D).

All gnathosomal setae simple; capitular seta shortest, hypostomal seta 3 shorter than 1 and 2.

MALE. Unknown.

TYPES. Described from a single specimen from San Vito, Prov. Puntarenas, Costa Rica. No other collection data found with the unidentified, preserved passalid beetle.

Holotype deposited in the National Museum of Natural History, Washington, D.C.

ETYMOLOGY. The species name *aspinata* refers to the absence of thorn-like setae on the anal shield.

REMARKS. *Similantennarella aspinata* has the following characters which differ from *S. spinata*: only 1 pair of setae on the sternogynial shield; small, simple setae on mesogynial shield; setae on anal shield simple, no thorn-like setae on shield; hyaline hood extends posteriorly to level of anterior margin of anal shield; posterior margin of dorsal shield without any protuberance.

KEY TO THE GENERA OF KLINCKOWSTROEMIIDAE
(MALES AND FEMALES)

1. Hyaline hood surrounding idiosoma, metapodal suture absent (Fig. 1 A); male without sternoventral suture (Fig. 1 C) *Antennarella* Berlese

- Hyaline hood not surrounding idiosoma, metapodal suture present (Figs. 2 A, 3 A, 4 A); male with or without sternoventral suture 2
2. Anal shield fused to ventral shield (Fig. 4 A); dorsal shield with constriction in region of coxae I, posterior part of shield without a protuberance *Klinckowstroemiella* Turk
Anal shield distinct (Figs. 2 A, 3 A); dorsal shield without constriction in region of coxae I, posterior part of shield with or without protuberances... 3
 3. Latigynial shield blunt, pointed (Fig. 4 E), straight (Fig. 4 C) or wavy (Fig. 4 D) on median margin; mesogynial and sternogynial shields without setae; male with sternoventral suture (Fig. 4 B) *Klinckowstroemia* Trägårdh
Latigynial shield L-shaped (Figs. 2 F, 3 F) mesogynial and sternogynial shields with setae; male without sternoventral suture *Similantennarella* gen. nov.

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