

INSECTS OF MICRONESIA

Acarina: Mesostigmata Macrochelidae¹

By G. W. KRANTZ
OREGON STATE UNIVERSITY
CORVALLIS, OREGON 97331

This paper lists species of the family Macrochelidae collected in the Caroline and Mariana Islands. Of the five species found in Micronesia, two of them, *Glyphtholaspis gressitti* and *Holostaspella crenulata*, are described here as new. *Macrocheles pavlovskii* Bregetova and Koroleva 1960 is placed in synonymy with *M. mammifer* Berlese.

The United States Office of Naval Research, the Pacific Science Board (National Research Council), the National Science Foundation, and B. P. Bishop Museum have made this survey and publication of the results possible. Field research was aided by a contract between the Office of Naval Research, Department of the Navy, and the National Academy of Sciences, NR 160-175.

The following symbols indicate the institutions in which specimens are deposited: US (United States National Museum), BISHOP (B. P. Bishop Museum).

I acknowledge the kind assistance of Dr. N. Wilson, B. P. Bishop Museum, Honolulu, who made the Micronesian collection available to me.

1. *Macrocheles kraepelini* (Berlese).

Holostaspis kraepelini Berlese, 1905, Redia 2: 164.

Macrocheles (Coprholaspis) kraepelini Berlese, 1918, Redia 13: 146.—
Vitzthum, 1926, Treubia 8: 34.

Macrocheles (Coprholaspis) multihamatus Vitzthum, 1926, Treubia 8: 29.

Macrocheles kraepelini: Krantz and Filipponi, 1964, Riv. Parassit. 25: 40.
DISTRIBUTION: Java, Australia, Caroline Is.

TRUK. TON (Tol): Two, foot of Mt. Unibot, breadfruit compost, Jan. 1953, Gressitt.

Collection records of *M. kraepelini* indicate that it is endemic to the western Pacific region. It was originally described from coprid scarabs in Java (Berlese, 1905), with subsequent collections from Java (Vitzthum, 1926) and from Australia (Krantz and Filipponi, 1964).

¹ This research was supported, in part, by National Science Foundation Grant GB-2323.

Distribution of Micronesian Macrochelidae

	MICRONESIAN ISLAND GROUPS										Other Localities	
	N. Mariana	S. Mariana	Caroline						Marshall	Gilbert		
			Palau	Yap	Caroline Atolls	Truk	Ponape	Kusaie				
1. <i>Macrocheles kraepelini</i>												Java, Australia S. America, continental U. S., Europe, Singapore
2. <i>M. mammifer</i>		×					×					
3. <i>Glyphtholaspis asperrima</i>		×	×				×					Java West New Guinea (Biak I.)
4. <i>G. gressitti*</i>		×					×	×		×		
5. <i>Holostaspella crenulata*</i>				×								

* Described as new.

2. *Macrocheles mammifer* Berlese.*Macrocheles (Nothrholaspis) mammifer* Berlese, 1918, Redia 13: 171.*Macrocheles pavlovskii* Bregetova and Koroleva, 1960, Akad. Nauk. CCCP 19: 83. New synonymy.

DISTRIBUTION: South America, continental United States, Europe, Singapore, S. Mariana Is.

S. MARIANA IS. SAIPAN: Two, Chalan Kanoa, ex coconut bark, Mar. 1964, Tenorio.

M. mammifer was found originally in South America, but has been collected since throughout the continental United States, in Europe and in Asia (Singapore).3. *Glyphtholaspis asperrima* (Berlese).*Holostaspis asperrimus* Berlese, 1905, Redia 2: 163.*Macrocheles (Macrocheles) asperrimus* Berlese, 1918, Redia 13: 172.*Glyphtholaspis asperrima*: Filipponi and Pegazzano, 1960, Redia 45: 166; 1962, Riv. Parassitol. 23: 202.

DISTRIBUTION: Java, Caroline Is., Marshall Is.

PALAU. KOROR: One, in palm log, Nov. 1947, Dybas. NGERGOI (Garakayo): One, Aug. 1945, Hagen.

MARSHALL IS. ARNO: One, Ine I., Feb. 1950, La Rivers.

G. asperrima has been collected previously only on Java. The collection at hand represents three new records for *asperrima*. A collection from Ponape (Colonia, July 3, 1950, Adams) may also be *G. asperrima*, although a definite identification could not be made. Specimens from Truk (Mt. Unibot, in bread-

fruit waste) and Saipan (banana stems and leaves) also may be *asperrima*, but the condition of the specimens does not permit identification.

4. *Glyptholaspis gressitti* Krantz, n. sp. (fig. 1, *a-c*).

Female: Length of idiosoma averages 893 μ , with a range of 877-909 μ ; width of idiosoma at level of coxae II averages 593 μ , with a range of 553-632 μ . *Dorsal shield* (fig. 1, *b*) strongly crenulate-reticulate, with 28 pairs of broad pectinate setae, plus an unpaired median D seta anterad of D_7 (setae D_x of Krantz 1965). Border of shield denticulate; posterior edge somewhat extended, divided into four broad pads, each with fine denticulations; dorsal pores generally large, as illustrated. Insertions of setae D_1 well separated, D_2 slightly anterad of and longer than M_1 ; D_4 long enough to reach insertions of D_5 ; M_4 inserted slightly ahead of, or on the same level with, D_6 ; D_x pectinate, similar to other setae; D_9 shorter than Mg_{10} . Integument bordering dorsal shield striate-punctate. *Sternal shield* (fig. 1, *a*) areolate throughout; sternals I distally plumose, sternals II-III smooth, sternals III shorter than sternals I-II; posterolateral corners of shield abbreviated so that *metasternals* are well separated from them. *Metasternals* each with a long smooth seta. *Epigynial shield* (fig. 1, *c*) broad, strongly crenulate as in other species of the genus, with a pair of long smooth posterolateral setae. *Ventrianal shield* (fig. 1, *c*) broad, rounded laterally and crenulate-reticulate, with indications of secondary sclerotization on lateral borders; preanals I smooth, longer than preanals II-III which are plumose; adanals smooth, postanal seta appearing smooth, short. Metapodal plates somewhat elongate, broader anteriorly than posteriorly. *Peritremes* each extending anteriorly and dorsally to a point medio-dorsal of seta M_1 . *Hypostome* with the typical three pairs of setae, anterior and internal posterior pairs being over twice length of external posterior pair; deutosternal setae subequal to external posteriors; with five rows of small deutosternal teeth. *Tectum* not clear, but apparently with fused lateral elements. *Chelicerae* not clear; internal cheliceral brush no more than half length of digitus mobilis. Sensory rod of palp tarsus as long as combined palpal tibia and tarsus. Legs I as long as legs II; pretarsal elements of legs II-IV divided distally, extending beyond distal extremities of claws; genu IV with six setae.

Male: Unknown.

Holotype, female (BISHOP 6899), Biak I., Kampong Landbouw, West New Guinea, ex leaf mold, May 28, 1959, Gressitt. Paratype, female, same data as holotype; paratype, female (US), Ponape I., north slope of Mt. Kupwuriso, 305 m., ex vegetation, March 11, 1948, Dybas.

DISTRIBUTION: West New Guinea (Biak I.), Caroline Is. (Ponape).

G. gressitti is of particular interest in that it exhibits at least two characteristics which are atypical for the genus *Glyptholaspis*: possession of an extra dorsal seta (D_x) and widely separated sternal and metasternal shields. The latter is characteristic of the genus *Macrocheles* s. lat., a fact which makes the generic placement of *gressitti* somewhat tenuous. The widespread occurrence of dorsal crenulation and sternal areolation in the genus *Macrocheles* further complicates its position, and confuses the separation between *Macrocheles* and *Glyptholaspis*. The discovery of *G. gressitti* points up the need for a reexamination of *Glyptholaspis* as a generic entity.

5. *Holostaspella crenulata* Krantz, n. sp. (figs. 1, *d, e*; 2).

Female: Length of idiosoma averages 688 μ , with a range of 664-711 μ ; width of idiosoma at coxae II averages 499 μ , with a range of 458-540 μ . *Dorsal shield* (fig. 2, *c*)

obscure in both available specimens, strongly crenulate-areolate; with 28 pairs of long setae, all of which appear to be smooth or at most pectinate basally (setae D_1 not observed); setae M_1 inserted nearly on a level with D_2 , D_1 insertions widely separated and on a slight anterior projection; D_3 nearly as long as Mg_{10} , without apparent pectination. Integument surrounding dorsal shield with strong "herringbone" striation pattern typical of many members of the genus (fig. 1, *e*, bottom). *Sternal shield* (fig. 1, *d*) with strong areolate pattern; with two large anterolateral "pits" formed by 1.

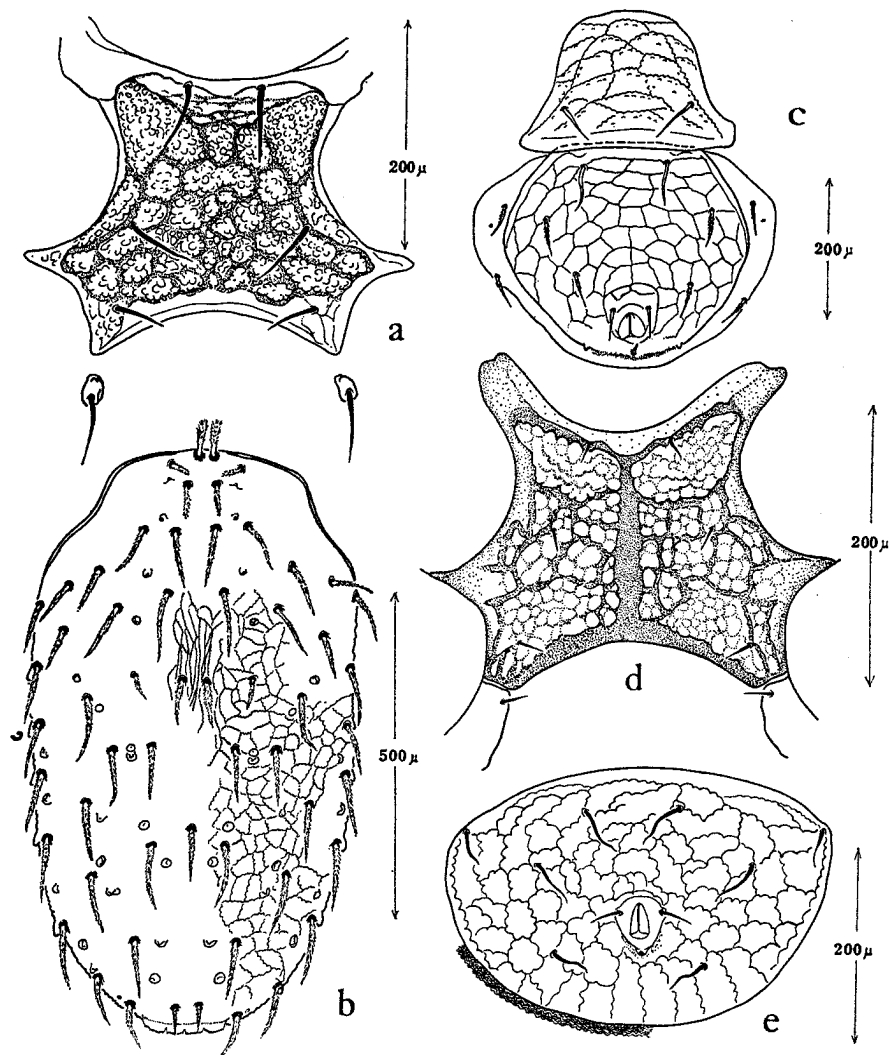


FIGURE 1.—a-c, *Glypholaspis gressitti*, female: a, sternal and metasternal shields; b, dorsal shield; c, epigynial and ventrianal shields. d, e, *Holostaspella crenulata*, female: d, sternal shield, with indication of metasternal shield position; e, ventrianal shield, showing posterior integumental "herringbone" striation.

ang. and 1. arc. (Berlese, 1918), posterior pits not quite so apparent; sternal setae short, smooth. *Metasternal* setae similar to sternals, inserted on shields which abut posterolateral angles of sternal shield and are contiguous with endopodal plates abutting coxae III-IV. *Epigymial shield* broad, truncate posteriorly, areolate throughout, with a pair of long smooth posterolateral setae. *Ventrianal shield* (fig. 1, e) elliptical, considerably broader than long and crenulate-reticulate throughout; with four pairs of smooth setae on *ventrianal shield* in addition to adanals and postanal setae; with one of the four pairs of setae inserted laterad and posterior to long smooth adanals. *Peritreme* leaving stigma posterolaterally, forming a protuberance laterally (fig. 2, c), and thence extending anteriorly and dorsally to a point mediad of M_1 . *Hypostome* with three subequal pairs of long setae, deutosternal setae also greatly elongated; with five rows of small deutosternal teeth. Sensory seta of palpal tarsus as long as combined

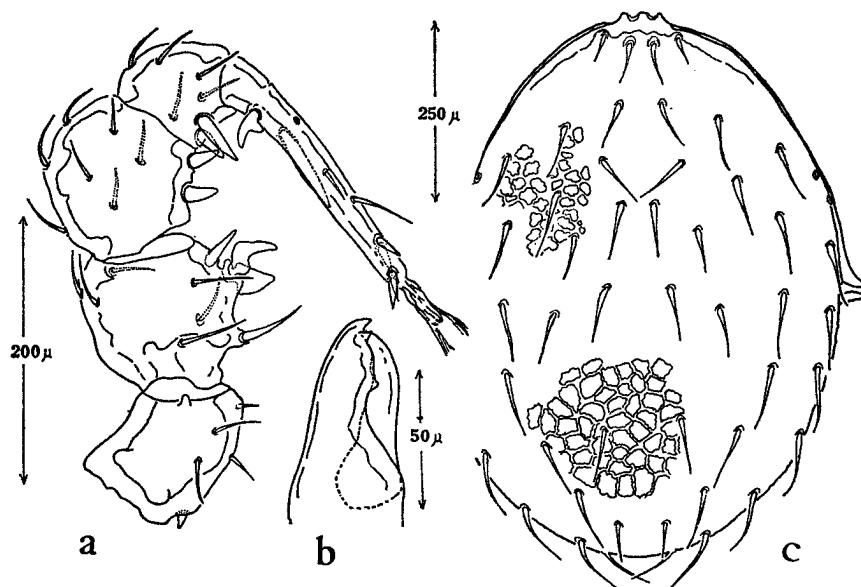


FIGURE 2.—*Holostaspella crenulata*, female: a, ventrolateral aspect of leg II, minus coxa; b, dorsum of chelicera; c, dorsal shield (seta 1 ornamentation and length obscure in some portions).

palpal tibia and tarsus. *Tectum* with a central bifurcate element, lateral elements not observed. *Chelicerae* (fig. 2, b) obscure, with weak dentition as illustrated; cheliceral brush present but not clear. Femur, genu, tibia, and tarsus II with stout spurs and spines (fig. 2, a); pretarsal elements on tarsi II-IV distally divided, extending well beyond distal extremities of claws, genu IV with six setae.

Male: Unknown.

Holotype, female (US 3156), hill behind Yaptown, Yap I., light trap, Nov. 29, 1952, Gressitt. Paratype, female (BISHOP), Yap I., July 30, 1950, Goss.

H. crenulata is particularly distinctive in having a large bifurcate spine proximoventrally on tarsus II, in addition to the general great development of spines on the other segments of leg II.

LITERATURE CITED

- BERLESE, A.
1905. Acari nuovi Manipulus IV. (Acari di Giava). *Redia* 2: 154-176.
1918. Centuria quarta di Acari nuovi. *Redia* 13: 115-192.
- KRANTZ, G. W.
1965. A review of the genus *Neopodocimum* Oudemans 1902 (Acarina: Macrochelidae). *Acarologia* 7 (2): 139-226.
- KRANTZ, G. W. AND A. FILIPPONI
1964. Acari della famiglia Macrochelidae (Mesostigmata) nella collezione del South Australian Museum. *Riv. Parassitol* 25 (1): 35-54.
- VITZTHUM, H. G.
1926. Malayische Acari. *Treubia* 8: 1-196.

