

Description of *Micromegistus*, a new genus of the *Paramegistidae*, with notes on *Neomegistus*, *Paramegistus* and *Echinomegistus*. (Acarina).

By

IVAR TRÄGÅRDH.

Last year Dr. Edward Baker of the U. S. National Museum, Washington, sent me two slides, containing males and females of a mite which he had provisionally referred to the *Antennophoridae*, asking me to describe the species. It proved to be a new and interesting genus, which has been called *Micromegistus*, because it is smaller than the other genera.

In 1946 (Trägårdh, p. 35) the old family *Antennophoridae* was subdivided into two families, the *Antennophoridae* and the *Paramegistidae*. The new genus belongs to the last family.

Diagnosis:¹

Jugular shields separate, fused to a single shield. Male genital aperture close to the anterior margin of the remaining sternal shield. Sternal and ventral shield fused, anal shield distinct.

Female with short sterniti-metasternal shield. No median shield visible. Genital aperture a large, transverse slit, the posterior margin of which is thickened to a ridge in the middle. Lateral shields present. Epigynial shield separated from the ventral shield, anal shield free, triangular. Mandibles edentate.

Type species: *Micromegistus bakeri* nov. spec.

Male fig. 1).

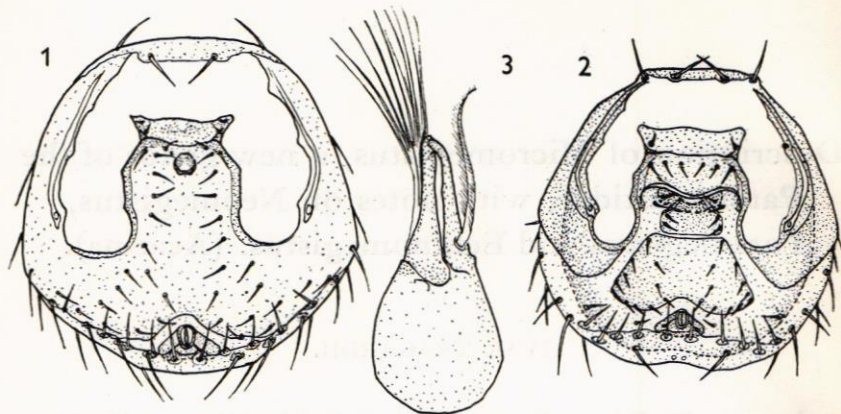
Length 810 μ ; width 940 μ .

Colour pale, straw-yellow, possibly discoloured during the preparation.

Shape almost pentagonal, as wide in the middle as it is long, with blunt anterior margin and the posterior margin almost semicircular.

The body is very flat and especially the posterior edge is very thin. The dorsal side. It has not been possible to examine, all specimens having

¹ As the mites had been treated in such a way that they were almost transparent and the cuticle apparently was very soft the posterior edge had bent downwards in a manner which had altered its outline a little. Moreover the gnathosoma, not having been separated from the rest of the body, had turned downwards so as to conceal the anterior part of the jugular shield and the tritosternum.



Micromegistus bakeri n. sp.

Fig. 1. ♂ Ventral view; gnathosoma and legs omitted. Fig. 2. ♀. Fig. 3. ♀. Mandible Original.

the ventral surface turned upwards, only the marginal hairs being plainly visible. There are two pairs of hairs at the anterior margin, in the anterior half of the dorsal shield there are no marginal hairs but further backwards there are about 15 pairs of slender, pointed, marginal hairs, five pairs of which are bent forwards which probably is not their normal direction.

Ventral side (fig. 1).

Jugular shields distinctly separated from the rest of the sternal shield, narrow, transverse, with acute anterior angles in which the pores are situated, hairs I being situated near the lateral edge.

The remaining *sternal shield* is fused both with the metasternal and endopodal shields to a single shield which continues on the exterior sides of the acetabula. The *genital aperture* is small, circular and situated near the anterior margin of the sternal shield, in front of a line, drawn between coxae II and III. The anterior margin of the sternal shield is concave and in the areas between the genital aperture and the sides the remaining three pairs of sternal hairs are inserted, the posterior one of which is at the same time the anterior one in two longitudinal rows of eight pairs of hairs of which the last pair is inserted close to the posterior margin of the ventral shield. Outside the three posterior of these hairs there is a group of seven pairs of hairs.

Female (fig. 2)

Length 1070 μ ; width 1070 μ .

The *shape* is the same as in the male, except that the posterior edge is slightly concave in the middle.

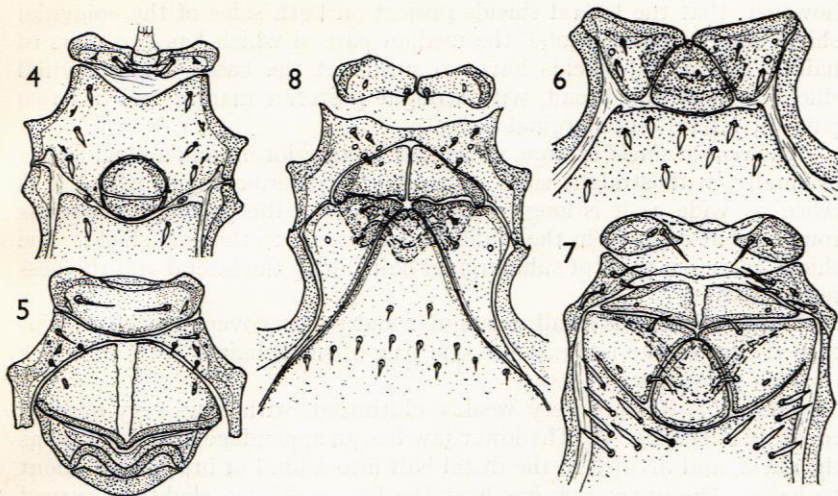


Fig. 4. *Paramegistus confrater*: Trägårdh. Male. Jugular, sternal and anterior part of ventral shield. We notice that the sternal shield is separated from the ventral shield and that the genital aperture is situated in the sternal shield, close to its posterior margin.

Fig. 5. Same species. female. Jugular, sternal and median shield, separated from the lateral and genital shield. The posterior part of the median shield is normally covered by the genital and lateral shields.

Fig. 6. Same species. Lateral, genital and anterior part of ventral shield.

Fig. 7. *Echinomegistus wheeleri* Berlese. Female. Jugular, sternal, median, lateral, genital and anterior part of ventral shield.

Fig. 8. *Neomegistus julidicola* Trägårdh. Female. Jugular, sternal, median and anterior parts of lateral and genitiventral shields.

The *dorsal shield* is truncated at the anterior end where two pairs of slender, pointed hairs are inserted. Along the posterior half of the sides there are 13 pairs of hairs of subequal size, except that the sixth pair is longer than the others. Five pairs of these hairs point forwards but this is probably due to the fact that the soft edge of the body is bent downwards and forwards.

The *jugular shield* is a little larger than in the male, with hairs I near the lateral side. The *sternal shield* has a straight anterior margin and the lateral sides are thickened to ridges. It is very short, not even half as long as it is wide. Its posterior edge is the anterior margin of the large, transverse, slit-shaped epigynial aperture, which has the shape of a bow. The sternal hairs II—III form a transverse row in front of the middle of the shield.

The *epigynial* and the *lateral shields*. Owing to the great transparency of the mites it is very difficult to see all the structural details. It seems,

however, that the lateral shields project on both sides of the epigynial shield with a rounded lobe, the median part of which has two pairs of hairs. The lateral shields have no suture at the base. The epigynial shield is short and broad, with straight posterior margin and has two pairs of lateral, submarginal hairs.

The *ventral shield* is large, with straight anterior margin and widening gradually, with straight sides, towards its posterior angles where it is twice as wide as it is long in the median line; the posterior margin is rounded but concave in the middle to give room to the anal shield. The shield carries 9 pairs of submarginal hairs along the lateral and the posterior margin.

The *anal shield* is small, triangular and partly covered by the downturned edge of the body; it has one pair of small hairs.

The *gnathosoma*.

The *mandibles* are very weakly chitinized, with long, very narrow, edentate chela (fig. 3). The lower jaw has an appendage, twice as long as the chela, and divided in the distal half into a kind of brush with about 10 hairs. The upper jaw has near the base a strong, slightly s-curved hair which is longer than the chela.

The *palpi* taper gradually towards the top, the terminal joint being richly provided with tactile hairs.

The *legs* are very long and powerful, of the type common in the *Paramegistidae*, with well developed claws and ambulacres. Legs I antenniform, much more slender than the other legs and with the tarsus obliquely cut off at the top and provided with numerous tactile hairs.

Locality. On *Scarites subterraneus*, Mississippi State College. Mississippi. 30/4 1940. Coll. E. W. Stratford 3 males, 2 females. Types in the U. S. Museum of Natural History.

Comparison between *Micromegistus*, *Neomegistus*, *Paramegistus* and *Echinomegistus*.

Although these four genera are undoubtedly fairly closely related, yet *Micromegistus* differs from the others in one important respect. The three other genera have in common that the median shield is so well developed that the sternal shield has correspondingly been greatly reduced in size, forming only a narrow rim, surrounding the anterior margin of the median shield, but in spite of its small size characterized by the presence of sternal hairs II—IV.

Another feature, common to these genera, is that the median shield is divided into two shields through a median, longitudinal strip of soft cuticle. This structure is most likely an adaptation for the purpose of making the ventral surface more flexible, thus enabling the mites better to adhere to the hard, polished surface of the millipeds.

In *Micromegistus*, on the other hand, there is no trace of a median shield and the sternal shield is consequently well developed. Another very puzzling feature of *Micromegistus* is the presence of two pairs of hairs on the epigynial shield, since there are no hairs on this shield in the other genera.

It is true that *Micromegistus* does not agree with the diagnosis of the family *Paramegistidae* given by the author in 1946 (p. 35) because it has no median shield. But, on the other hand, it must be assumed that we know a very small and insignificant number of the myriopodophilous mites, as no systematic researches and collections have been made of these exceedingly interesting forms. It seems therefore premature to make any changes in the present system which will surely be modified by further researches.

In order to summarize the main features of the four genera, investigated by the author, the following key is appended.

- 1 No median shield *Micromegistus*.
- Median shield present 2
- 2 Female lateral shields fused with ventral shield. ... *Neomegistus*.
- Lateral shields with suture at the base 3
- 3 Jugular shields fused to one shield *Paramegistus*
- Jugular shields not fused *Echinomegistus*.

Bibliography.

- Trägårdh, Ivar. Neue Acariden aus Natal und Zululand. — Zool. Anz. Bd. XXX. Nr. 26—27. Nov. 1906.
- Description of two myriopodophilous genera of Antennophoridae. Ark. f. zoologi. Bd. 3. Nr. 28. 1907.
- Outlines of a new classification of the Mesostigmata (Acarina). K. Fysiogr. Sällsk. Handl. N. F. Bd. 57. Nr. 4. 1946.

