

## 6. A new species of Polycystid Gregarine from the United States.

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(With 2 figures.)

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The material from which this gregarine was taken, was collected in and around the city of Boulder, Colorado, during the months of September and October, 1911. Tenebrionid beetles of the genus *Eleodes* are very abundant in this vicinity and as the gregarines were found in great numbers in about ninety percent of the specimens examined, *Stylocephalus giganteus* is to be regarded as one of the most abundant gregarines of this region. The gregarines were studied alive in normal salt solution and after being properly killed, in alcohol. The figures are from camera lucida drawings of living specimens.

While working on this species, Prof. T. D. A. Cockerell kindly called my attention to the fact that the name *Stylorhynchus* as applied to the genus *Stylorhynchus* Stein, 1848, was preoccupied by *Stylorhynchus* Lesson, 1847, in Aves. As the new gregarine was referred to the genus of Stein, two important changes in the existing nomenclature were made necessary. The name *Stylocephalus* is substituted for the genus *Stylorhynchus* Stein, and Stylocephalidae for the family Stylorhynchidae A. Schneider, 1886, which is rendered invalid by the change of the generic name.

Stylocephalidae fam. nov. = Stylorhynchidae A. Schneider, 1886.

*Stylocephalus* genus nov. = *Stylorhynchus* Stein, 1848.

*Stylocephalus giganteus* sp. nov.

Type, 1500  $\mu$ , Boulder, Colorado, U.S.A. (Ser. No. 1.)

Cotypes, 214—1825  $\mu$ , Boulder, Colorado. (University of Colorado.)

Average specimens, 1200—1800  $\mu$ , maximum 2135  $\mu$ .

Host, *Eleodes* sp., a Tenebrionid.

Infection, about 90% ; individuals abundant.

Habitat, mesenteron, and to a less extent the proctodaeum.

Length of the protomerite from 1,1 to 2,1, (average, 1,5), in the length of the epimerite, and 9,75 to 18,3 in the total length of the gregarine without the epimerite; maximum width of the protomerite 1 to 1,5 in the maximum width of the deutomerite; maximum width of the deutomerite 7 to 12 in the total length without the epimerite.

Epimerite long and pointed; basal half to two-thirds, cylindrical often becoming rather globose just before the epimerite is cast off; apical portion quite rugose, consisting of a small, slightly expanded part and

a longer, narrower part, the latter forming the point of the epimerite. Epimerite present in most of the specimens under  $500\ \mu$ , although individuals 214 and  $400\ \mu$  were found without epimerite. The largest specimen bearing an epimerite taken was  $1800\ \mu$  in length.

Protomerite almost hemi-spherical in individuals without the epimerite, becoming somewhat globose in the largest gregarines; in those with an epimerite, the protomerite slopes toward the epimerite, forming a truncated cone.

Fig. 1.



Figure 1 gives drawings of the entire gregarines. Specimen "A" was a small gregarine, body length of  $572\ \mu$ , bearing an epimerite. Specimens "B", body length  $1200\ \mu$ , "C",  $1340\ \mu$ , and "D",  $1500\ \mu$ , were average large individuals. Most of the individuals over  $1200\ \mu$  body length and all above  $1500\ \mu$  were of the shape of specimen "D", hence it is considered the type. In general the smaller specimens graded from a shape like specimen "B" to that of specimen "D", the larger they became.

Deutomerite much produced, tapering gradually from the protomerite; the posterior end bluntly conical for a distance equal to the length of the protomerite: in small and medium specimens, the greatest width of the deutomerite is just behind the septum, being about the same as that of the protomerite; in large specimens the constriction at the septum is more pronounced and the greatest width of the deu-

tomerite is some distance, (not to exceed the length of the protomerite), behind the septum.

Nucleus nearly as large as the protomerite in small and medium specimens; in large specimens often partly or completely obscured by the opacity of the endocyte. It is usually found posterior to the middle of the animal in small specimens, and anterior to the middle in large ones, although by pressure it may be shifted.

Epicyte thin and very flexible.

Sarcocyte very thin and clear; present over the entire animal; thickest at the posterior end of the deutomerite, just behind the septum in the deutomerite, and in the anterior portion of the protomerite.

Endocyte quite clear in the small individuals, varying to very dense in the large gregarines. It is not found beyond the basal fourth of the epimerite. It fills rather completely, however, the other portions of the body.

Fig. 2.

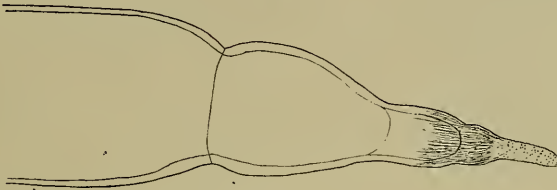


Figure 2 shows the epimerite, protomerite, and a portion of the deutomerite of a small specimen, (600  $\mu$  body length), highly magnified.

Usually in groups of three or more, although no associations are formed. Often ten or more individuals of various sizes are found in a group with the posterior ends of the deutomerites together. Such collections when examined showed no actual connection existing between the individuals. The large gregarines were especially active, being able to bend the body in any direction. They were often noticed to assume the shape of a large "S" and then straighten again rather rapidly.

Many pairs of large individuals were found with the two protomerites partly fused by a head to head union of the two specimens. This seemed to be the first stage of conjugation although the succeeding stages have not been followed as yet.

Sporocysts large and subspherical.

This species is distinguished from *S. longicollis* St., by its much shorter epimerite which possesses a relatively longer point. It is a longer and slimmer species than *S. gladiator* Blanchard, to which it is most closely related. The epimerites of the two species also differ, that of *S. giganteus* having a slightly globose enlargement at the base of the apical part.

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