

found to be parasitised with species of two distinct Protozoan orders—namely, Gregarinida and Myxosporidia S. L. The former was represented by a single species, the taxonomic position of which was not ascertained. Larvæ parasitised by this species were conspicuous in presenting a white speckling over the entire surface of the body (fig. 4). This, upon closer examination, was seen to be due to innumerable small globular cysts, measuring up to .25 mm. in diameter, which either floated freely in the blood, or were still attached to the original seats of infection. The tissues invaded were the ectodermal epithelium, the cells of the fat body and the layer of pigment cells which cover the nervous system in these larvæ. The sexual organs were never found in parasitised larvæ.

The cysts when sectioned, and stained with iron hæmatoxylin, were seen to be composed of a homogeneous mass of granular protoplasm in which was situated numerous free masses of chromatic material. In some young cysts there were vacuoles, but these were detected in living specimens only. In other fresh material there seemed to be a distinct ectosarc layer of a perfectly clear fluid. By the end of November a developmental stage was reached in which the protoplasm began to collect around the scattered masses of nuclear material, and the cyst contents were divided up into numerous uninucleate globular bodies. If a cyst were then dissected and allowed to float in water it soon bursts, liberating countless numbers of these minute globules which, within a quarter of an hour of their escape, began to move independently, and were soon actively darting around, in a limited area, in the water. Killed and fixed specimens revealed the fact that each was provided with a flagellum. No further study of these organisms was made. The larvæ thus parasitised had their histoblasts retarded, though to a less extent than those which contained *Mermis* sp. Since this parasite was present in about 50% of the larvæ in streams where it was found, it must have a distinct economic value. The retardation of the histoblasts is sufficiently pronounced to assure the death of the larvæ, which was in all recorded cases that of *S. bracteatum*. No other species of *Simulium* larvæ were present however, in the streams where this parasite was found.

The order Myxosporidia S.L. was represented by three species of the genus *Glugea*. These species received special attention, and