

particularly near the apex of the abdomen (fig. 3). The skin, normally dark green in colour, is rendered almost transparent owing to its great distension, and through it can be seen a white irregular mass of parasitic material. Upon dissection, this parasitic mass is found to consist of countless spores. Four distinct types of spores were found in different localities. These represented, probably four, or even more, species. The simplest type was a plain ovoid, about 5μ by 3μ in size. Another, similar in size, had at one end a flattened disc. In a third, this disc was replaced by a stout flagellum-like organ about 2-3 times the length of the spore, while the fourth resembled the third, but had in addition two raised annulations around its equatorial region. The first type of spore represented, probably, a normal species of the genus *Glugea*, of which three more species were found during the following fall. Unless the spores bearing appendages belong to the *Myxosporidia*, S.S., which seems to be improbable, they represent entirely different types to anything previously described. Up to 80% parasitism was recorded, every case of which is believed to have been fatal. This could not be proved definitely since all *Simulium* larvæ kept under observation in captivity died. The following observations tend, however, to confirm this supposition. No pupæ containing parasites could be found, even where 80% of the larvæ had been infested. No reproductive organs were found in parasitised larvæ. There is very little fat body stored up in these larvæ. The voluminous proportions of the parasite would require an enormous rent in the ectoderm in order that it might escape, and were it to pass over into the adult it is inconceivable that the latter would be able to escape from the water when so hampered.

Throughout the summer isolated specimens of *S. bracteatum* were present in the streams. These were casually examined, but no parasites were found. By the beginning of October larvæ of this species were abundant. *S. vittatum* was represented, also, by a few specimens, and by the middle of November *S. hirtipes* was once more hatching out from recently deposited egg masses. The latter species seems to aestivate throughout the Summer, for no signs of it were seen between the end of May and the beginning of October.

The larvæ present in the streams during the fall months were