

histoblasts so accelerated that the pupal, or in some cases adult, organs appeared as external structures in the as yet immature larvæ. Such cases have been recorded by Heymons ('96) in *Tenebrio molitor*, Hagen ('72) in *Bombyx mori*, and others in various Coleopterous larvæ. A study of the cases of prothetely now on record shows that they were all produced under artificial conditions. This would suggest that it is due to some pathological disturbance, which has caused an excessive stimulation of the enzymes, whose action brings about the multiplication of adult tissue forming cells, without appreciably affecting those of the larval tissues. It then follows that there are two sets of enzymes concerned in the maturation of holometabolic insects, one of which may be termed the "larval enzymes" and the other the "adult enzymes." The suppressed growth of the histoblasts in parasitised Simuliidæ would then be due to the worm decreasing the stimulating action of the adult enzymes by impoverishing them either in quality or quantity. This subject is discussed more fully in an earlier paper by the writer ('11), where this pathological condition is termed Methetely, in contradistinction to Kolbe's Prothetely.

The parasitised Simuliid larvæ are unable to pupate and are finally killed by the worm, which bores its way out through the "skin" and thus escapes into the water. Here it probably leads a free sexual life, as do the related nemathelminths found in grasshoppers of which it is only the larvæ that are parasitic. It is surmised that the larval worm passes into the body cavity of its host from the alimentary tract, into which it would be readily taken with the food. This worm was found during the spring in varying abundance in most of the streams examined. The largest percentage of infection was 25, equally distributed between the two species of *Simulium* present in that stream. It was never found in the fall, and has probably one generation only per annum.

During the spring there was a very high percentage of parasitism by various Myxosporidia S. L. (Sporozoa). When these were discovered, they had all sporulated, and were therefore at too late a stage in development for their taxonomic position, or life history, to be ascertained, but they were evidently related to the organisms causing the Pebrine disease of silkworms. The body of the parasitised larva becomes enormously distorted and swollen,