

nymphs of eight species were taken and imagos reared, three of which are new species and the nymphs of the other five have not previously been described. The Heptagenia nymphs were the dominant forms in the swift waters and along the exposed shore. Their bodies are very much flattened, legs spreading, femora flattened, claws pectinated, gills placed dorsally in an overlapping series, and eyes on dorsal surface of head, and so are adapted to a life in the swiftest water. They are able to cling very tightly, for when they are lifted from a stone, quite a resistance can be felt. The clinging habit is very strong, for if a number are placed in a vessel of water without anything else to cling to, they begin clinging to each other and are soon all in a mass. They are quite active and are able to scurry over the surface of a stone, even going sideways and backwards. Their food consists of the various algal forms on the stones to which they cling.

A Heptagenia probably completes its life cycle in a year. It spends all its life in the water except for four or five days as subimago and imago. The egg hatches in about 40 days. This calculation is based upon the fact that about two months after the appearance of the imagos of *H. tripunctata* the small nymphs of the next generation were found, and this is the time required for the eggs of *Hexagenia bilineata*. The nymphs moult about once every two weeks, and as the time of emergence approaches, they probably migrate into quieter water. I have not observed the emergence of a Heptagenia subimago in the open, but in the laboratory the nymphs would crawl up the sticks placed in the jars for the purpose and transform just above the water level. The subimago stage usually lasts a day, but occasionally only a few hours and in the early part of the season it frequently lasted three or four days. Temperature and humidity seemed to be important factors. The imagos commenced their flight shortly after sundown along the lake shore, dancing in their rhythmic up and down manner at a height of from 12 to 20 feet. The females deposited their eggs by flying over the surface of the water and brushing off the eggs into the water as they appeared from the openings of the oviducts. Of the eight species the first to appear was *H. tripunctata* about June 1, and the last, *H. luridipennis*, September 2.