

TABLE 8.—RELATIVE ABUNDANCE OF GUT CONTENTS OF NYMPHS OF *Baetisca rogersi* COLLECTED IN ROCKY COMFORT CREEK, NOVEMBER 1968 TO MAY 1969.

Month	Total no. of items counted	% Detritus	% Diatoms	% Filamentous algae	% Mineral particles	% Arthropod remains
Nov.	312	51.28	17.63	2.24	28.85	0.00
Dec.	308	51.63	13.96	2.27	32.14	0.00
Jan.	198	59.09	10.61	1.01	29.29	0.00
Feb.	277	44.77	33.21	11.19	10.83	0.00
Mar.	378	46.56	36.24	0.53	15.61	1.06
Apr.	423	55.32	37.35	0.71	6.62	0.00
May	401	53.37	17.95	0.25	28.43	0.00

upward motion was more or less directed sideward with the downward stroke a simple return to normal position. As water flows from the cavity, the small plate-like gills of the sixth abdominal segment snugly join together and form a tube that fits into the circular space between the posterior elevation of the notal shield and the concave dorsal surface of tergum 6 (Fig. 20). The sixth abdominal gills serve as a channel for the discharge of water from the cavity.

The nymphs of *B. rogersi* are detritivorous. Examination of 21 nymphs revealed the dominant gut components as detritus, diatoms, mineral particles, and a few fragments of filamentous algae (Table 8). Identified diatoms were *Navicula* sp., *Surirella* sp., *Nitzschia* sp., *Meridion* sp., *Pinnularia* sp., *Fragilaria* sp., and *Gomphonema* sp. One desmid, *Micrasterias* sp., was also found. Among the recognizable filamentous algae were *Spirogyra* sp., *Cladophora* sp., and *Oedogonium* sp. We also found a few fragments of arthropod remains in one specimen, but these were probably ingested accidentally. Although alimentary tracts of both large and small nymphs collected throughout the season were examined, no significant differences were discernible in the composition of materials eaten by the various instars. We did note an increase in abundance of diatoms among dissected nymphs collected in February, March, and April, when a thick population of diatoms covered the rocks in the stream. Nymphs of many mayfly species feed on diatoms, algae, and organic debris as reported most recently by Minshall (1967) and Coffman, Cummins, and Wuycheck (1971).

The nymphs feed at night. In the laboratory they browsed on the surface of rocks and crawled back and forth on the substratum apparently feeding. Sometimes they bit off pieces of water moss. While feeding the nymphs alternately raked the substratum towards the mouthparts with the tibiae and tarsi of the prothoracic legs. The nymphs also placed their prothoracic legs between the mouthparts apparently re-