

gonads dissected with jeweler's forceps were placed in small plastic petri dishes, 60 × 15 mm, half filled with distilled water. Eggs extracted from each female imago were counted under a dissecting microscope with an ocular grid to determine reproductive potential. To determine whether *B. rogersi* exhibits parthenogenesis, we took eggs from female subimagos and imagos reared individually in separate aquaria, and incubated the eggs in distilled water to avoid possible sperm contamination.

Eggs were fertilized by artificial insemination, achieved by crushing the reproductive organs of a male imago and a female imago in a depression slide filled with distilled water or Hobson's Ringer Solution as Barnes (1937) suggested. After 3 hours in the insemination medium the eggs were transferred into small, plastic petri dishes containing either steam or distilled water. They were then incubated at room temperatures of 20° C to 32.2° C. Water was changed every 2 days and water temperatures recorded daily. Nymphs hatched from eggs were reared through the first three instars in the laboratory, but all died before achieving the fourth instar. Field collections were necessary to supplement the life history.

We made field collections of the first five instar nymphs using Anderson's (1959) modified flotation technique. We also collected young nymphs from fresh samples of bottom substrate brought in from the study area at weekly intervals for 3 months, September to November 1968. Although laborious, this technique allowed us to collect live small nymphs free from injuries or mutilation. Most fourth to sixth instar nymphs were obtained this way. The seventh to twelfth instars were collected with a plastic handscreen throughout the study, December 1967 to July 1969.

We carried live nymphs to the laboratory in plastic buckets containing a small quantity of stream water with a dampened cloth in the bottom of the container. If no attachment surface is provided, the nymphs will cling to one another and injure themselves as they splash against the sides. Rocks or gravel are unsuitable for attachment because they tumble about and can damage the specimens. Wet moss can be substituted for cloth.

Early instar nymphs were reared in small plastic petri dishes of stream water with a thin layer of fine sand in the bottom for an attachment surface. Food (fresh, bottom substrate and living diatoms) and water were changed every 2 days. The water was aerated by the vibration of air pumps placed near the pans containing the petri dishes. These compressors were primarily used to aerate large aquaria, but their vibration alone agitated the water in the dishes enough to aerate it.