

NOTES ON *HYDROPHILUS TRIANGULARIS* SAY*

BY ROBERT MATHESON, PH. D., ITHACA, N. Y.

Although much study has been given to the European species *piceus* and much has been written of its life-history, anatomy and metamorphosis, scarcely anything has been published concerning the American species *triangularis* Say. Since the brief account given by H. Garman in the American Naturalist in 1881 I find but few references to this species in American literature. As this is one of our largest beetles, and is commonly met with in aquatic collecting, I hope this short account gathered from a brief study during the summer of 1912 may be of use to others working in this group.

The beetles undoubtedly hibernate and egg-laying occurs early in June. Garman found the egg-cases about the first of June at Normal, Ill., and in one case the female was in the act of finishing her case. I found the completed egg-cases at Ithaca on June 24 and 26. These egg-cases are peculiar and interesting structures. Although Garman has given a good description of the nidus, it may be worth while to redescribe it, as his paper is now inaccessible to the average worker in entomology.

The egg-case (pl. XXII, fig. 2) is always attached to pieces of floating leaves, bits of weeds, etc., and never, as far as I know, to living plants. The case with the projecting horn-like mast floats gracefully on the surface of the water. The cases must be sought with considerable care, as they are not easily recognized among the floating debris. I have found them most commonly in shallow pools with abundant vegetation and rich in insect life (Pl. XXII, fig. 1.) The leaf to which it is usually attached serves as a float and aids in keeping the mast erect and above the surface of the water. The case is smooth, brownish in colour, the upper surface closely adhering to its support (Pl. XXII, fig. 2.) It measures about 22 mm. wide, 24 mm. long and 15 mm. deep. The horn-like process is usually about 7-8 mm. long, and projects from the front of the case almost at right angles to the upper surface. It is dense, hard and almost black in colour, composed of closely-woven strands of silk. Below it expands into a broad hatchet-shaped plate, as seen in figure 2. It is supposed that this horn, which is really a very

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