

quite freely. These larvæ breathe through their tails, which they protrude into the air for that purpose. When full grown and about to assume the pupa state, the larva leaves the water, and burying itself in the earth, constructs there a round cell within which it undergoes its change, and if this occurs in summer, it appears in two or three weeks as a perfect beetle; but if in autumn it remains in the chrysalis state all winter, transforming to a beetle in the spring.

Fig. 14 represents another of our large water beetles, *Hydrophilus triangularis*. This species is entirely black, and so strong and muscular as to be difficult to hold in the hand when captured. The relationship of this tribe of insects (*Hydrophilus*) with the preceding one (*Dytiscus*) is very close. There is much similarity of form and a close resemblance in habits; their method of swimming, however, is different, for while in *Dytiscus* both paddles are moved simultaneously, in *Hydrophilus* they are moved alternately, hence the stroke of the latter is much less effective. We are not aware that anything has been written on the early stages of *Hydrophilus triangularis*, but in Europe the life history of a closely allied species, *Hydrophilus piceus*, has been carefully traced by several observers, and there is little doubt but that our species has similar, if not identical habits. The female of *H. piceus* has the singular habit of spinning a silky cocoon for her eggs, one side of which is furnished with an upright, bent, horny point, an inch long, which is supposed to be serviceable in conveying air to the interior. These eggs, some fifty or sixty in number, are placed in an upright position and in regular order in their receptacle, which is round and flattened and attached to some water plant at the surface of the water. In warm weather the larvæ are hatched in from twelve to fifteen days, when they escape at the lower part of the cocoon, which is closed only by a few threads. They undergo three moultings, and when full grown measure nearly three inches in length. The head is horny and of a very singular form, its lower surface being convex, while its upper surface is flattened. Its sharp and formidable jaws are well adapted for seizing and securing its prey. They are said to attain their full growth in July, when they leave the water, bury themselves in the earth, where they undergo their changes in a manner similar to that of *Dytiscus*.

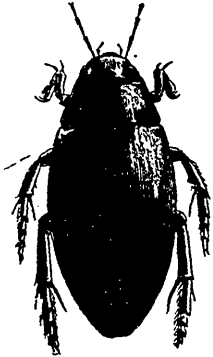


Fig. 14.