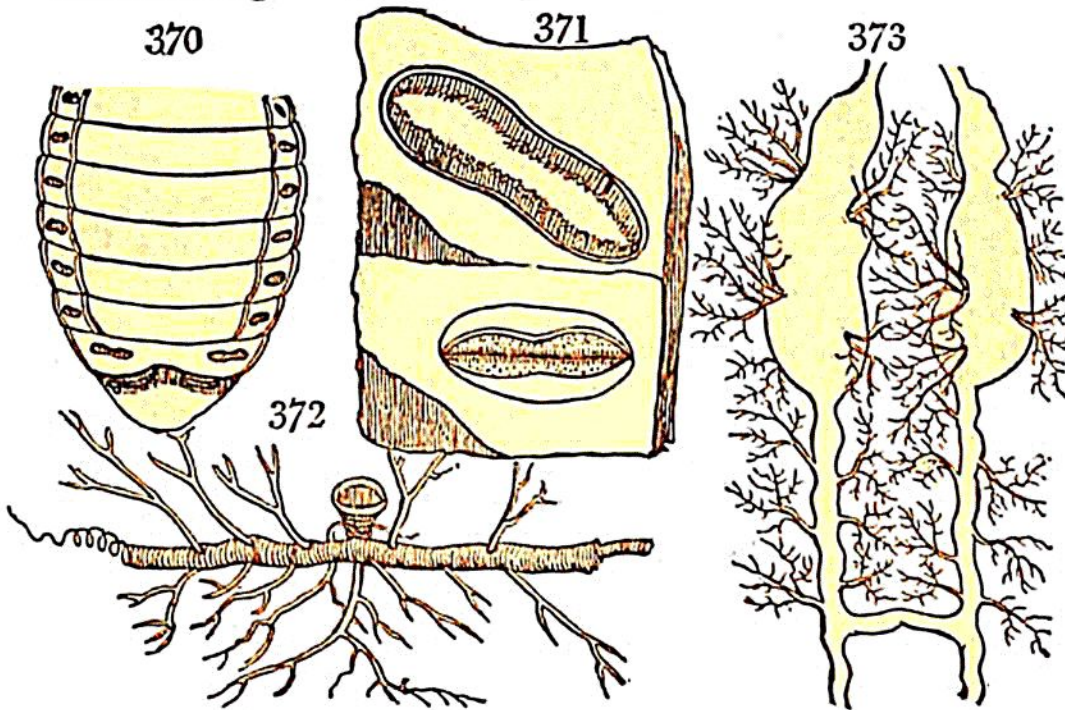


are usually situated in rows on each side of the body, as is shown in Fig. 370, which represents the lower or abdominal



surface of the *Dytiscus marginalis*. They are seen very distinctly in the caterpillar, which has generally ten on each side, corresponding to the number of abdominal segments. In many insects we find them guarded by bristles, or tufts of hair, and sometimes by valves, placed at the orifice, to prevent the entrance of extraneous bodies. The spiracles are opened and closed by muscles provided for that purpose. Fig. 371 is a magnified view of spiracles of this description, from the *Cerambyx heros*. (Fab.) They are the beginning of short tubes, which open into large trunks, (as shown in Fig. 372,) extending longitudinally on each side, and sending off radiating branches from the parts which are opposite to the spiracles; and these branches are farther subdivided, in the same manner as the arteries of the larger animals, so that their minute ramifications pervade every organ in the body. This ramified distribution has frequently occasioned their being mistaken for blood vessels. In the wings of insects, the nervures, which have the appearance of veins, are only large air tubes. Jurine asserts that it is by forcing air into these tubes that the insect is enabled suddenly to expand the wings in preparing them for flight,