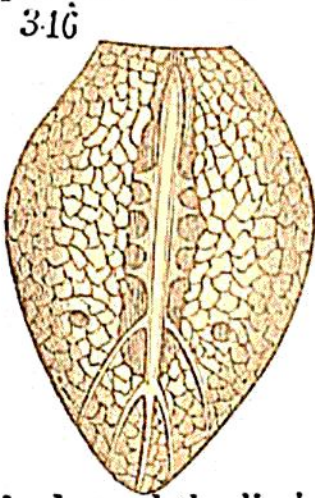


In proportion as the changes of form which the insect undergoes are less considerable, the evidences of a circulation become more distinct. Such is the case in many of the Apterous Insects, composing the family of *Myriapoda*: in the *Scolopendra morsitans*, (Linn.) for instance, Dugès observed the dorsal vessel dividing into three large branches.

Most of the tribes belonging to the class of Arachnida have, likewise, a dorsal vessel, very analogous in its structure and situation to that of insects; and, as none of them undergo any metamorphosis, their vascular system admits of being considerably developed, and becomes a permanent part of the organization. Fig. 346 shows the dorsal vessel



of the *Aranea domestica* or house spider, with some of the arterial trunks arising from it, lying embedded in a thick mass of substance, having a similar oily character to that which is contained, in large quantities, in the principal cavities of insects. It is, in general, difficult to obtain a view of the circulation in the living spider, on account of the thick covering of hair which is spread over the

body and the limbs; but if a species, which has no hair, be selected for examination, we can see very distinctly, through the microscope, the motion of the blood in the vessels, by means of the globules it contains, both in the legs and in other parts, where it presents appearances very similar to those already described in the limbs of the larvæ of insects.

A complete vascular circulation is established in all the animals which compose the class of Annelida; the vessels being continuous throughout, and having sufficient power to propel the blood through the whole of its circuit. Great variety exists in the arrangement and distribution of these vessels, depending on the form of the animal, the complication of its functions, and the extent of its powers. The first rudiment of a distinct system of circulating vessels, independent of the ramified tubes proceeding from the intes-