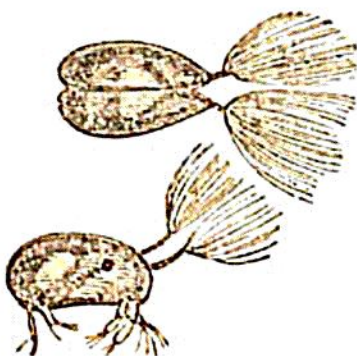


mediate plate, as in *Galathea*, sometimes consists of two lobes; these laminæ, when expanded, form a most powerful natatory organ, which, if we consider the weight of their body, must be necessary to keep them from sinking, and by its vertical motion to enable them to rise or sink in the

Fig. 82.



Cyclops quadricorne.

water. But natatory organs are not confined to those of the trunk and abdomen, even those of the head sometimes assist in this kind of motion. Thus in *Cypris*, an Entomostracan genus, resembling a muscle, the mandibles and first pair of maxillæ have branchial appendages used also in swimming, and their antennæ are likewise terminated by a fasciculus of threads, which, according to Jurine, the animal develops, more or less, as it wants to move faster or slower.*

But the most important natatory organs are those which enable the *vertebrated* inhabitants of the waters, from the giant whale to the pigmy minnow, to make their way through the waves; it will be interesting to trace the analogies of the fins of these animals to the locomotive organs, whether wings or legs of other animals, especially Mammals. Some we shall find *sui generis*, and calculated particularly for the circumstances in which the Creator has placed the great class of *fishes* and the rest of the marine animals; and others, in the course of our analysis, we shall observe gradually assuming the character and uses of an arm or leg.

The fins of fishes are membranes, usually supported by osseous or cartilaginous rays, which can open or shut, more or less, like a fan, but in some instances they consist of membrane without *rays*, and in others of rays without membrane. The rays are usually divided into two kinds; those

* Latr. Cours D'Ent. i. 430.