

two), agreeing with Mr. Hailstone's description above (p. 271.). Is it in an adult state? the length being very short for one of the *Palæmonidæ*. It is to be borne in mind that the above figure is taken from a mutilated individual, in which the two anterior pairs of legs are broken off: these are represented as detached. Mr. Hailstone having omitted to complete his account by prefixing a name to the description, I have supplied the want by employing that given above, suggested by the two spines on the shell.

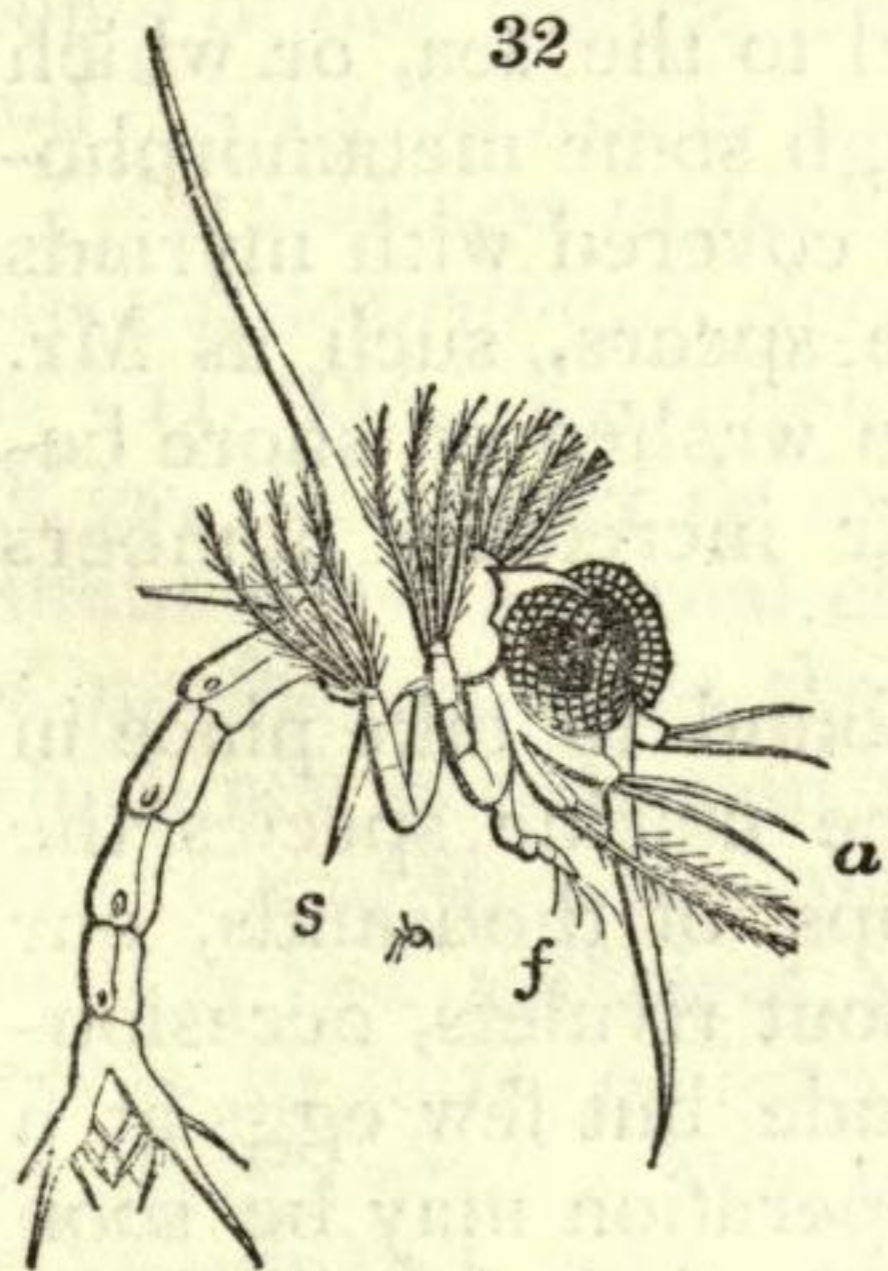
[Notes upon *Hippolyte* ? *rubra*, by Mr. Westwood.]— This animal differs so completely from *Hippolyte*, not only in the characters mentioned by Mr. Hailstone, but also in the general slender form of the body, the abdomen not being gibbose in the middle, and in the length of the superior antennæ, that I should not hesitate to form it into a separate genus; that is, on the supposition that the latter organs are correctly described as only furnished with two filaments. This is, indeed, an important character; as the distribution of the genera of this family adopted by the best crustaceologists depends on the presence of two or three filaments. If the description be correct, this new genus must be arranged in a small group of genera consisting of *Pèlias*, *Pontònia*, *Hippolyte*, *Alphèus*, and *Gnathophýllum*, all of which have the two anterior pairs of legs didactyle. In *Pèlias*, however, these legs are nearly of equal size; the second pair being the thickest, with the wrists not annulose. In *Pontònia*, also, the wrists are similarly formed; but the second pair of legs is excessively large. *Alphèus** comes nearest to this new genus; but its types are large Indian species having the first pair of legs large, but very unequal in size, and much longer than the second pair. In *Gnathophýllum* the wrists are not annulose, and the external foot-jaws are dilated.

If, on the other hand, the superior antennæ have three filaments, the genus comes very close to *A'thanas*, in which, however, the eyes are exposed, the fore legs not so large, and the rostrum long; but there is a genus, omitted by Latreille, which appears to agree in every respect with that under consideration: it is the *Cryptophthalmus* of Rafinesque (*Précis de Découvertes*, 1814), which has, as the name implies, the eyes concealed by the fore part of the shell. The specific name, *C. ruber*, also points out the apparent identity; but the upper antennæ are stated to have three filaments. Conceiving it not improbable that these descriptions may relate to the same animal, I have employed the same specific name for the

* The *Alphèus aculeatus* O. Fabr., and *A. polàris*, both figured by Sabine in the *Voyage to the North Pole*, belong to the genus *Hippolyte*.

above, which will neither be inappropriate, nor lead to confusion, even if the animals should be distinct.

With reference to Mr. Hailstone's enquiry for suggestions as to those points in the natural history of the Crustàcea which require elucidation, it will, perhaps, be more serviceable to mention, in as few words as possible, the state of the question, as it stands at present, relative to the transformations of these animals. Dr. Rathke, in a most elaborate treatise, has traced the gradual developement of the eggs of the crayfish, and has clearly proved that this animal, at its birth, possesses the general form of its adult state. Mr. J. V. Thompson, on the contrary, and without a knowledge of the researches of the former author, has, in various memoirs, insisted upon the existence of transformations of the most extraordinary kind *throughout* the Crustàcea, and has stated that he has succeeded in hatching the eggs of the



large common edible crab; and that the young, which he has figured [(*fig. 32. : a*, antennæ; *f*, feet; *s*, one of the lateral spines. This figure, and all its parts, are magnified from the size of the figure placed between *s* and *f*, which represents the natural size of the creature)], are of a form totally unlike that of the adult state, being, in fact, referable to the genus *Zoëa* of Bosc, which is, according to Mr. Thompson, consequently composed only of the larvæ of crabs. The statements of Mr. Thompson are highly valuable, *if correct*, and

sufficient, as Mr. Swainson has well remarked, in his *Preliminary Discourse*, to place Mr. Thompson in the foremost ranks of science. As, however, the crayfish and the crab are so closely allied, it would certainly be desirable to ascertain whether either or both of these opinions be correct; and, to persons residing upon the coast, it would be easy to examine the females of various kinds of crabs, as well as of the lobster, spiny lobster, and crayfish, at the period when they are with spawn; and also from time to time until the eggs are hatched. By this means, I apprehend, the point at issue may be satisfactorily cleared up. It would also be serviceable to place in spirits some of the spawn, taken at different periods, so that it might be microscopically examined and dissected. It is also a point of some interest as to the manner in which the shells of crabs and lobsters are periodically cast, *if, indeed, such be the case*, as well as to ascertain