

found in the lithographic stones of Solenhofen and the lias of Southern England, it has the flagella of the first pair of antennæ long, and all the pereipoda subequal, the first pair not longer or more chelate than the others.

Palinurina pygmæa, Münst., *Palinurina longipes*, Münst., and *Cancerinus claviger*, Münst., evidently belong to this family, and probably also *Archæocarapus bowerbankii*, M'Coy, from the London clay; the last is remarkable for the length of the first pair of subchelate pereipoda and the prominent rostriform character of the frontal margin of the carapace.

DEVELOPMENT OF THE PALINURIDÆ.

The species belonging to the genera of this tribe are among the largest of the Crustacea Macrura, measuring as they frequently do some two feet or more in length. But although their dimensions are so great, yet their ova are among the smallest, measuring less than 1 mm. in diameter. As in most instances when the ova are small, their number is correspondingly large.

The young when it quits the egg measures 1.5 mm. from between the ophthalmopoda to the posterior extremity of the pleon. The legs, of which one single and four double branched pairs are already well-developed and longer than the animal, and previous to being hatched lie longitudinally rolled up, passing anteriorly between the ophthalmopoda and reaching over the dorsal surface of the animal to the posterior extremity of the cephalon. When it quits the ovum and throws off the first embryonic covering it appears in the form of what was long believed to be a perfect animal, the *Phyllosoma*. At this period, in specimens that I have taken from the ova of British species (Pl. XIIA. fig. 1), the central ocellus is very conspicuous, and placed between the ophthalmopoda which are largely developed and distinctly pedunculated, the ophthalmus being large and massive, and the peduncle rapidly narrowing to a slender attachment. The two pairs of antennæ are only uni-branched, and as yet do not appear to be articulated. The mandibles are present and perhaps one of the siagnopoda.

The pereion is not covered by the carapace but consists of six somites dorsally fused together, and carries five pairs of pereipoda, of which the first is small, slender and uni-branched; the others are biramose, the second branch, articulating with the distal extremity of the basis, is multiarticulate, consisting of six subequal joints including the two basal, which are homologous with the coxa and basis.

The pleon is short, showing at the sides the divisions which mark the number of its somites.

Unfortunately the young are very difficult to rear, and although they have been occasionally hatched in artificial aquaria,¹ none have yet been known to pass into the second stage of development.

¹ The late Mr. Alfred Lloyd informed me that in the aquarium at the Crystal Palace the young of the *Palinurus* when first hatched hung in the water as a cloud in the form of an inverted pyramid for some time—two days, if I remember correctly—and then gradually dispersed.