

"In the males the first segment has on each side a little knob, somewhat longer than broad, turning inward. In the interior the developing leg is visible, and its articulation seems marked. This oval knob with rounded tip is the beginning of the first pair of abdominal legs. I have seen the same form of the first abdominal legs in the young of *C. bartonii* even 0.55 inch long." Dr. Hagen also remarks that the ovisac in the true *Astacidæ* is always burst "into two parts perpendicularly, the segments remaining attached to the stem. This condition makes it probable that the *Astacus* embryo has a particular egg-burster similar to that in the insects," although these interesting parts are little observed or known even by entomologists.¹

According to Professor Huxley,² Roesel von Rosenhof says that "The young animal, though very similar to the parent, does not 'quite resemble it in all respects,' for not only are the first and the last pairs of abdominal limbs wanting, while the telson is very different from that of the adult;"

Although, at the time when the young quits the ovum, the posterior pair of pleopoda is not advanced to the permanent condition of the adult tail-fan, yet long before it is hatched, and while yet in an embryonic condition, the posterior pair of pleopoda is visible as a two-lobed appendage bearing a close resemblance to those preceding it.

The young, after they quit the egg, continue to grow under the fostering care of their parent, with which they continue attached by means of a small hook at the extremity of each finger of the large claw, which overlap each other when the hand is shut. "Hence when the chelæ have closed upon anything soft enough to allow of the imbedding of those hooks, it is very difficult, if not impossible, to open them again." The same author,³ again quoting Roesel, says, "when the mother of these little crayfishes, after they have begun to be active, is quiet for a while, they leave her and creep about a short way off. But if they spy the least sign of danger, or there is any unusual movement in the water, it seems as if the mother recalled them by a signal, for they all at once swiftly return under her tail, and gather into a cluster, and the mother hies to a place of safety with them as quickly as she can. A few days later, however, they gradually forsake her."

Peach⁴ says that the fishermen of Goran Haven, Cornwall, "have seen in the summer frequently the old lobsters with their young ones around them; some of the young have been noticed six inches long." The circumstance of the young being so large is suggestive of the gregarious habits of the lobster rather than of maternal instinct. In the Amphipod forms, both in *Gammarus*,⁵ *Podocerus*,⁶ and *Caprella*,⁷ as also in *Arcturus*⁸ among the Isopods, the young have been observed to cling around and attach themselves to the mother, and when frightened to return to the egg pouch.

¹ *Loc. cit.*, p. 20.

² Huxley, *Crayfishes*, p. 43.

³ *Loc. cit.*, p. 42.

⁴ Bell's *History of the British Crustacea*, p. 248.

⁵ Bate and Westwood, *British Sessile-eyed Crustacea*, vol. i. p. 380.

⁶ *Op. cit.*, vol. i. p. 443.

⁷ *Op. cit.*, vol. ii. p. 59.

⁸ *Op. cit.*, vol. ii. p. 370.