

Mechanism of Egg Attachment in the Lobster Homarus

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The mechanism of egg attachment to the pleopods was examined microscopically in Homarus americanus and H. gammarus. Ovulated oocytes are surrounded by an envelope (#1) comprised of layers 1A and 1B. After passage through the gonopore and exposure to sea water, envelope 1 swells and becomes sticky. A second coat, envelope 2, forms during a complex cortical reaction initiated at fertilization. At spawning, eggs pass over the ventral surface of the female to the pleopods where they stick by means of layer 1A to each other and to the ovigerous setae. During egg attachment, the pleopods beat and cause envelope 1 to stretch and become extruded into attachment stalks. Beating also probably causes the attachment stalks to twist and wrap around the ovigerous setae. Subsequently, envelope 1 condenses and forms a tough attachment stalk/egg coat capable of securing eggs to the ovigerous setae for as long as 16 months. After larvae hatch, portions of the egg coats and attachment stalks are retained on the ovigerous setae. Supported by NOAA.

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