A PLEISTOCENE OCCURRENCE OF LIBINIA DUBIA, A BRACHYURAN

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In the summer of 1938 an unusual specimen of the spider crab, *Libinia dubia* Milne Edwards, was collected from the Pamlico formation (late Pleistocene) at Wailes Bluff on the Potomac River near Point Lookout, Maryland. The fossil was length and 24.5 mm. in width, including spines, so the animal at death was probably about one-third grown. By reason of subsequent accidental breaking of the cephalothorax, the inner part of the animal was revealed. As the thoracic walls are almost complete, details of the partially calcified chitinous interior skeleton can be studied. Moreover, within, and occupying about half of the thoracic cavity, is a brown nodosely tubular structure, which, when carefully examined, appears to be no encrusting organism, but part of the viscer of the spider crab itself. Because of its size, its manner of filling the thoracic cavity, its
vesicular structure, its color, and its caecal-like appearance, it is concluded that this chitinous material was within the hepatopancreas of the crab. Thus, although the remains of Callinectes so commonly found in the same deposit are fragmental and poorly preserved, this representative of Libinia, apparently by reason of better calcification of its chitinoid skeleton, is so remarkably well preserved as to retain part of its digestive gland.

The openings in the thorax for the muscles of the five large appendages are well shown, as are also at least three other much smaller openings for the muscles of the mouth appendages. These three openings successively decrease in size anteriorly as the size of the muscles decreases. Likewise, the area of cross section of the gill chamber (used as an index of volume) is restricted anteriorly, resulting in the presence of either smaller or fewer gills associated with the appendages of the mouth. From this decided reduction in gill size it might be postulated that Libinia dubia is evolving toward the decapod crustaceans with five pairs of gills, and that most of the transition had already been achieved by the Pleistocene epoch.

Modern representatives of L. dubia are distributed along the Atlantic coast from Cape Cod, Massachusetts to Corpus Christi, Texas, and also along Cuban and West African strands. This crab is found on mud flats, oyster bars, and as deep as 25 fathoms in varying bottom habitats. Libinia dubia is one of nine modern species of the genus but is not the most common spider crab today. As a fossil, it has been reported previously only in the form of isolated claws. One right finger is known from the Yorktown formation (upper Miocene) of Virginia and eight fingers were recovered from the Cape May formation of New Jersey (Rathbun, 1925, 1935). The latter deposit is approximately the same age as the Pamlico formation.

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REFERENCES


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