

AN EASTERN UNITED STATES RECORD FOR THE
WESTERN INDO-PACIFIC CRAB,
HEMIGRAPsus SANGUINEUS
(CRUSTACEA: DECAPODA: GRAPSIDAE)

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Abstract. — An ovigerous female of a western Indo-Pacific grapsid crab, *Hemigrapsus sanguineus*, is reported from New Jersey, U.S.A.

During a field trip on 24 Sep 1988, a student member (R. A. Nusbickel) of an invertebrate biology course at Franklin and Marshall College, Lancaster, Pennsylvania, discovered a live ovigerous grapsid crab at Townsends Inlet, Cape May County, New Jersey (39°07'06"N, 74°43'00"W). The crab was taken during an ebbing tide from a *Fucus* covered boulder in the mid-intertidal zone, under the south end of the highway bridge over the inlet. There was slight, but not recent, damage to the crab's left frontal margin. The crab was transported to Lancaster on the same day, where it was maintained at room temperature (ca. 23°) in a one gallon aquarium provided with rocks, *Fucus*, and shallow (ca. 2.5 cm) sea water (ca. 30 ppt). Water was changed daily, but the crab was not fed (however, it may have eaten some of the algae).

On 27 Sep some of the embryos were removed for microscopical examination. They were in the eyed stage (eye pigment 0.057 mm long \times 0.029 mm wide), had considerable body pigment, a beating heart, and the yolk was ca. $\frac{1}{4}$ – $\frac{1}{3}$ of the embryo volume. The eggs were nearly round—mean diameter 0.363 mm, SD 0.015, $n = 20$.

On 3 Oct the crab was discovered out of the water and oscillating its abdomen. It subsequently entered the water (as it usually did when JJMcD was about to change the water), where it released some embryos, aborted some "prezoeae" (no dorsal spines), and released one zoea having a dorsal spine.

At this time the eyes were larger than on 27 Sep (0.114 mm long \times 0.057 mm wide), and the yolk was reduced to ca. $\frac{1}{8}$ of the embryo volume. Released embryos and zoeae were preserved in glycerine alcohol as were some from 4 Oct.

On the morning of 6 Oct the crab was found dead and was preserved. The crab and larvae are now deposited in the crustacean collection of the National Museum of Natural History, Smithsonian Institution (USNM 239154).

The crab was identified as *Hemigrapsus sanguineus* (de Haan, 1853) by reference to Sakai (1976) and by comparison with specimens in the USNM. The first zoea fits the description of the first zoea of that species (Kurata 1968) and resembles figures of that developmental stage redrafted by Rice (1980).

The carapace of the adult was distinctly patterned or mottled, there were small reddish rounded spots on the upper parts of the chelipeds, and the walking legs were banded. The following morphometric data were obtained with a dial caliper to the nearest 0.05 mm: carapace width 35.8, length 30.7; width between outer orbital teeth 24.95; abdomen width 4th segment 26.2, 5th 25.85, 6th 23.6, telson 14.1; right chela length 17.6, height 9.45; left chela length 17.65, height 9.35.

Hemigrapsus sanguineus is listed by Sakai (1976) as one of the commonest crabs of Japan, having a western Pacific distri-

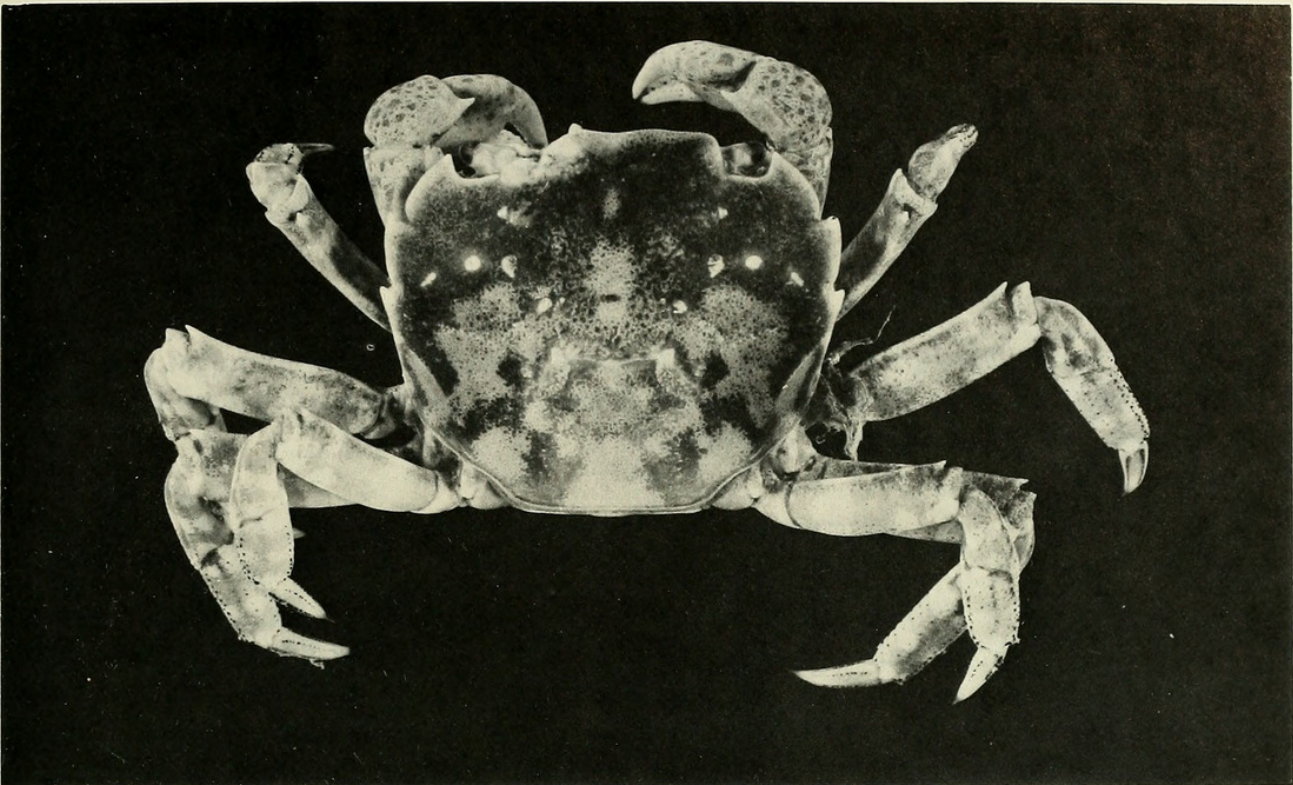


Fig. 1. *Hemigrapsus sanguineus*: mature female collected in New Jersey, U.S.A., dorsal view.

bution extending from Sakhalin, Korea, and north China to Hong Kong, and on all the coasts of Japan from Hokkaido to Okinawa. Occurrence of an ovigerous female in New Jersey may be one of the interesting but potentially distressing introductions that result from world shipping (Carlton 1979). If insemination had taken place before the crab was transported, it may have been a lone immigrant, but if not, at least one male of the species would have been introduced into New Jersey waters with it. The Cape May area should be monitored to see if a population has become established. No other records of this species in the United States are known to us.

Acknowledgment

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