



THE ROCK and JONAH CRABS

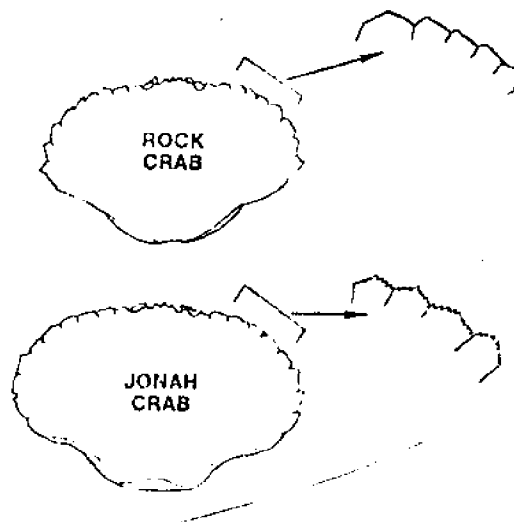
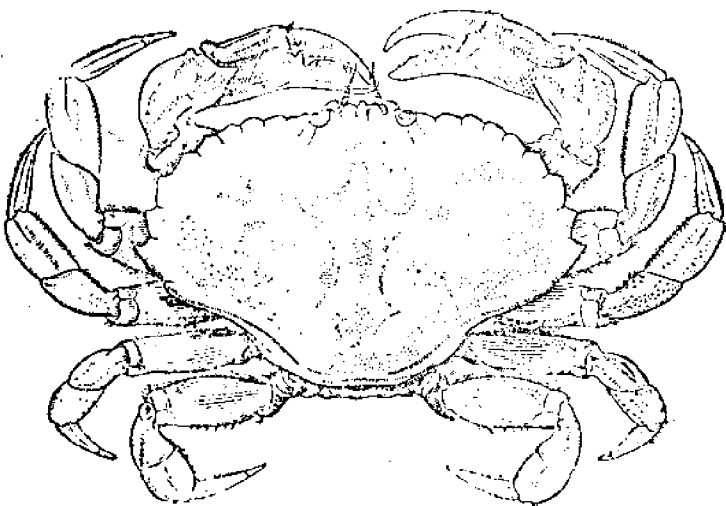
The Rock crab (Cancer irroratus) and the Jonah crab (Cancer borealis) range from Nova Scotia to the South Atlantic states and are both abundant along the coast of Maine. Generally, the Rock crab is found in shallower waters on sandy or gravelly bottoms; while the Jonah crab is found in deeper waters on rocky bottoms. Their meat is troublesome to pick for a beginner but the taste is as good, if not better, as the meat of the well-known Maryland blue crab. On the average it takes about ten to twelve Rock crabs to obtain a pound of crabmeat.

Although similar in appearance, the Rock crab is not as big as the Jonah crab. Other identifications are the carapace which is ivory-colored and covered with small purple spots on the rock crab and brick red and rough in texture on the Jonah. The edges, or marginal teeth, of the shell are smooth on the Rock crabs while the marginal teeth of the Jonah have smaller teeth on their margins (see illustration). The claw of the Jonah crab is also larger in comparison to its body than the claw of the rock crab.

The Rock crab sustains a small fishery in Maine. A total of 937,399 pounds were reported in 1975, worth \$79,392; however, this is not a true figure as many crabs are caught by lobstermen incidental to their own fishery. These crabs are brought home where their wives pick them and freeze them in 1/2-pound and pound containers for sale in food stores. An experienced picker may average 1-1/2 to 3 pounds of crab meat an hour.

All crabs have five pairs of legs. The swimming crabs' last pair of legs are flattened so they can be used as sculling oars enabling the crab to swim rapidly. However, all crabs of the genus Cancer are walking crabs. Their last pair of legs terminate in pointed feet. The Rock crab (Cancer irroratus) is an untiring runner and either runs or burrows itself deeply in the sand in order to get away from danger. The Jonah crab has a larger carapace and larger claws, making it more difficult to burrow. It is not as active and leads a reclusive life. The Jonah will generally fight rather than run when threatened.

Like all crustaceans, a crab must shed its old shell in order to grow. Before the old shell cracks, a new exoskeleton is formed inside. Then the old shell loosens and the carapace is lifted, and the crab backs out of the old shell. At first, he is very soft and wrinkled--and extremely vulnerable. The crab takes in a great deal of water in order to fill out his new soft shell so that he will have



room to grow. He will expand to the new size in about two hours, increasing his width approximately 20% before the new shell begins to harden. It takes about one month for the new shell to become completely hard. The crab also has the ability to sever a limb at a prescribed breakage point. This is called autotomy and means that the crab can rid itself of an injured limb or escape when a limb is grasped by an enemy. When a leg is severed at this breakage point, the opening is closed by a valve and there is little loss of blood. A limb bud in a protective sac grows at the break, the sac is thrown at the next molt, and the crab has a new and usable limb. It probably takes about three molts for the new leg to become normal size.

The male Rock and Jonah crabs molt at a different time than the females, usually in the winter months of February and March. The females molt in the late fall. Mating occurs as soon as the female molts and while the male is still a hardshell. The eggs appear later as a spongy mass which sticks to the abdominal appendages of the female. When the eggs hatch, they resemble tiny shrimp-like larvae called zoeae. After five molts, these zoeae are transformed into different shaped larvae called megalops. The megalops form looks more like a crab and will swim or crawl on the bottom. After several more molts, the megalops finally changes into a recognizable crab. The young crab will molt a few times during his first year but after that will molt only once a year until he attains his maximum size (about 135 mm wide, Cancer irroratus; slightly larger for the Cancer borealis).

Most crabs which are taken for food measure about 102 mm (4") across the carapace; since the females are usually smaller, they are not taken because they are too small to process thus creating a natural conservation.....The Rock and Jonah crabs eat sea worms, mussels, star fish and sea urchins.....The Rock crab (Cancer irroratus) is known by no less than ten common names on the coast of Maine; the Jonah crab (Cancer borealis) is known by six common names. The use of so many names creates some confusion as to identity.....The traps and baits used by the fishermen vary greatly. Some traps are exact replicas of lobster traps, others are square, others are half round with two plastic funnels, etc. The distance between the lath also varies, permitting different sized crabs to escape.

To tell the difference between male and female crabs, turn the crab over and look at the abdomen. The abdomen of the male crab is a slender triangle while that of the female is much broader.



Bibliography:

- Haefner, Jr., Paul A., A. A. VanEngel and David Garten. Rock Crab: A Potential New Resource. Virginia Inst. of Marine Science, Advisory Series, No. 7, Nov. 1973.
- Haefner, Paul A. Cancer Crabs: Aids to Identification. Virginia Inst. of Marine Science, Advisory Series, No. 10, May 1976.
- Krouse, Jay S. "Some Life History Aspects of the Rock Crab, Cancer irroratus, in the Gulf of Maine." J. Fish. Res. Bd. Canada 29: 1479-1482.
- Rees, George H. Edible Crabs of the United States. US Dept. of Interior, Fishery Leaflet 550. 1963.
- Scarratt, D. J. and Robert Lowe. "Biology of Rick Crab (Cancer irroratus) in Northumberland Strait." J. Fish. Res. Bd. Canada 29: 161-165.
- Turner, Harry J., Jr. "The Edible Crab Fishery of Massachusetts." Investigations of the Shellfisheries of Massachusetts, Woods Hole Oceanographic Inst. July 1953. pp. 25-28.
- The University of Maine's Coherent Sea Grant Program, May 1971 to August 1972. Orono: October 1972.

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