DEPARTMENT OF THE INTERIOR

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The ordinary commercial crab, armoured marine gladiator popular among sea-food enthusiasts, today stood revealed for the first time as employing panzer division tactics on oyster beds.

Experiments at the Pensacola (Florida) Fisheries Biological Laboratory of the Fish and Wildlife Service of the Department of the Interior definitely have added the common commercial crab of the Atlantic and Gulf Coasts to the list of oyster enemies.

The bivalves already are victimized by a host of voracious foes who anaesthetize, bore, crush, and otherwise commit mortal mayhem upon them. Now, according to A. E. Hopkins, in charge of the laboratory, comes the crab with tactics which resemble a combination of panzer attack, safe-cracking, jiu jitsu, and patience.

"It has long been known that an oyster bed is one of the most favorable localities for catching crabs, but the reason for this has not been clear," Hopkins' report said. "It is true, no doubt, that smaller organisms, such as worms and sea slugs, find some protection beneath the oyster shells, and that crabs are able to move the oysters and feed on the otherwise unprotected, soft-bodied organisms."

New experiments being carried on at the Pensacola Laboratory definitely "indicate that the crab is an active predator on oysters and must be considered as one of the important enemies of the oyster population." The experiments were carried on in large outdoor concrete tanks, 15 feet by 30 feet, which were provided with a continuous flow of fresh sea water. Several bushels of healthy oysters, both adult and young, were placed in the tanks and then several adult commercial crabs introduced.

"Within the first day several empty oyster shells were noticed and each day thereafter more and more oyster meats disappeared from their protective shells", the report said. "During summer weather the destruction of oysters amounted to one oyster every two days for each crab. During October when the water was cooler and the crabs not so active, each crab ate an oyster every three days, on the average. In bodies of water where crabs are very numerous it is obvious that they offer a real hazard to the oyster crop.

"It is not yet completely certain just how a crab is able to remove the oyster meat, for the crab's claws are not strong enough to crush the hard shell of an adult oyster. However, they occasionally crush the thin shells of young oysters, one to two inches in diameter, and eat the meat. In two cases crabs were directly observed in the act of opening oysters, and it appears that the crabs succeed by reason of their speed of action and skill in manipulation of fins and claws. When an oyster is feeding its shells are open an eighth to a quarter inch at the bill end. Apparently the crab inserts the tip end of one of its large claws between the shells and the oyster closes the shells tightly on it. Then, using the claw as a lever, and holding the oyster with its fins, the crab pries the valves farther apart. It seems also to use the other claw to jam the valves in the open position while it inserts the first claw deeper for the next prying position.

"When the shells are jammed far enough open one of the claws reaches in and breaks the oyster's muscle, removing and consuming the meat. In the two cases observed, the crab required only two or three minutes for the whole operation. Peculiarly enough, the shell is ordinarily not damaged beyond a slight nick in the thin edge where the claw was first inserted.

"The fact that one important commercial species preys on another even more important does not imply, by any means," warns Hopkins, "that the predatory species should be annihilated. To the contrary, the crab industry can be very profitable and provide an excellent food. It is most probable that an intensive crab fishery, in oyster producing waters, would not only be profitable in itself, but would keep the population of crabs from growing to such proportions as to be a serious menace to the oysters.

"It is considered likely that a reasonable population of crabs would feed primarily on the worms, slugs, and similar organisms, while if crabs are in great abundance they are forced to prey on oysters. For example, at Pensacola, Florida, there is no crab meat packing plant although crabs seem to be very abundant. Incidentally, the oyster beds in Pensacola Bay and connected bodies of water are extremely depleted. In this region, and perhaps in various others along the coast, it is believed that a prosperous crab fishery would produce double dividends by enhancing the value of the oyster fishery."