

# Starfish, Little Giant Of The Sea, Equipped To Kill Clams, Oysters

By JONAS CRANE

BIRCH HARBOR, April 24—Starfish are interesting little creatures that can be found anywhere along the Maine coast. Actually, the name, "starfish," is inappropriate since these marine animals are echinoderms and not fish. Sea urchins and sea cucumbers, which are common in Maine waters are also echinoderms.

## APPEAR HARMLESS

Starfish appear to be harmless little creatures but they do a lot of damage to clams which are an important source of income to many coastal dwellers. Starfish also do a lot of damage to oyster beds and are considered to be a major problem in states that have extensive oyster grounds.

It is estimated that they damaged an oyster bed in Connecticut to the extent of \$631,500 in one year. During that period more than 42,000 bushels of the pests were removed from the bed and destroyed.

The starfish appears to be a rather frail creature but actually it is a little giant. Its arms or star points are equipped with hundreds of powerful sucker-like feet that enables it to travel about at the rate of about six inches per minute.

When the creature gets hungry he fastens the suckers on one of his arms to the bottom valve of any bivalve he can find. Then he drops another arm over the upper valve and exerts a steady two and one half pound suction pressure until the unlucky bivalve relaxes his shell.

Then the starfish squirts a powerful digestive juice into the shell and it is all over for the bivalve. The charge from the enemy's squirt gun paralyzes him and he becomes an easy meal for the starfish.

Oddly enough, the starfish has no muscles but gets the power for its work from a perfect hydraulic pressure plant within its body. Bivalves can withstand a strong sudden pressure but the relentless suction of the hydraulic pump wears it down.

After the starfish has opened his victim he begins to feast on the meat. He does this by extruding his stomach through the mouth and dropping it over the meat. When the meal is over he swallows his stomach with one big gulp and goes forth in search of another victim.

## CLIMBS RAPIDLY

Starfish are big eaters and in a test a small one measuring less than three-eighths of an inch across, ate more than 50 young clams of half that length in six days. Its mouth is located in the center of the disc that forms the body. It is surrounded on all sides by the sucker like tube-feet that play such an important part in getting food.

These tube-feet also enable the starfish to climb rapidly of move about on the softest bottom. If a starfish is turned over the

suction tubes stretch out until they find a firm object.

Then the hydraulic plant goes into action until the star is turned over. If no firm surface is near the suction legs move the star along the water surface upside down until a support is found.

Starfish have the ability to drop off an arm if the need arises. Sometimes they escape from nets by "falling apart."

However, this disintegration does not inconvenience the starfish for long. He quickly grows a new arm, and in time a new body will develop around the discarded arm and there will be two starfish instead of one.

The name, starfish, covers three classes of echinoderms; sea stars of Asteroidea; brittle stars or Ophiuroidea; and feather stars or unstalked Crinoidea. There are many sub-divisions of these and the three classes cover more than 3,000 different kinds of starfish.

The sea stars, which are commonly called starfish, are the best known and most widely distributed of the three main classes. They are often called "five-fingers" but some of them have

more than that number of arms or star points. However, this condition is not normal and is usually brought about by injuries, although it may be congenital in some instances.

Starfish are found in many colors and in the same water there may be some that are a bright red, others orange or purple. The mud starfish is usually dull ochre-yellow or slightly greenish in color. The common starfish usually measures from three to seven inches from point to point, but in some tropical waters there are species that grow as large as three feet in diameter. These giants are five inches thick and often have as many as 80 points.

## FOUND IN SEAWEED

The brittle stars are usually found in seaweed or eelgrass. They can be identified by their long slender arms and mottled coloration in light gray and purplish brown. No two of this species have the same color pattern. Because their arms curl in a snake-like manner they are sometimes called "snake-tails."

The basket starfish is an interesting species of serpent stars.

Its arms branch off into smaller arms in a growth not unlike the branches of a tree. The basket star walks on the tips of these branches with its body elevated above ground. Thus the network of branches forms a trellis or basket which traps many forms of small marine life that feeds the basket-star. In some species the food trap is as much as one and one half feet in diameter.

The sea lilies or Crinoidea are the rarest and most beautiful of the starfish family. It is believed that all kinds of Echinoderms descended from ancestors that resembled the sea lilies. Many years ago they lived in countless numbers their flower-like bodies forming veritable forests under the sea. The ancient lily had a stem extending from the body that anchored it to any firm support.

Down through the centuries, the stem grew shorter with each new generation until it became just a knob from which arise many jointed appendages which supports the little animal. The arms of this species are fringed with slender branches (pinnules) giving it a feathery appearance.

Hence the Crinoideas are often called "feather stars."





**STARFISH STUDY**—A group of tourists studies a starfish in the Acadia National Park near Bar Harbor. The park naturalist is explaining the spine-like growth that covers the outside of the star's arms. The animal shown is the common (*Astroidea*) starfish.