THE SUN
BALTIMORE, MD.
(MORNING)
D. 183,549 SUN. 351,849

MAR 14 1976

Waters and woods

The strange pughead rock

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A chance glance into a catch of rockfish at the Annapolis docks turned up for Dr. Robert T. Emmet what appears to be a record pugheaded rockfish.

The Annapolis oceanographer said the unusual fish had been netted in the Chesapeake off Shadyside. It was 34 inches long, fork of tail to tip of nose, and weighed 24 pounds.

The publication *Chesapeake Science* lists a 5¼-pounder of 19.3 inches as the biggest on record. That was a fish taken on hook and line in about 60 feet of water near the Miller Island area of the upper bay in 1960.

First reported in 1919

Every so often one of these deformed stripers turns up, though usually they are small, 3 pounds or less. They're also called "dolphin rockfish" and "pugheaded striped bass."

The late Dr. Romeo Mansuetti studied similiar afflicted rock and examined the listed record fish at the Chesapeake Biological Laboratory, in Solomons.

He said it was a 6-year-old male, which couldn't completely close its jaws, but was in apparent good condition—although it was small for its age.

Dr. Mansuetti expressed the opinion the deformity among rock is caused by environmental and hereditary factors—and not mechanical injury. First report of such a fish was printed in a December 21, 1919 issue of the New York *Sun*.

Bob Pond, a saltwater fishing lure manufacturer, reported a 24-incher of about 6 pounds taken in Massachusetts and mounted by the Fall River Line-Siders Club. Specifications of that fish were never verified.

"Not a hindrance"

Dr. Mansuetti wrote that at one time it was suggested pugnose rock were a hybrid between a shad and rock. He said it was clear from his studies that pugheadedness "is not a hindrance to survival and growth." It is claimed they feed almost as efficiently as as normal striped bass.

Writing in *Chesapeake Science*, Dr. Mansuetti suggested the deformity "may result from a germinal defect in the embryo, its course may be directed by adverse conditions, especially as oxygen deficiency in the micro-environment of the early developmental stages."

He noted that pugheaded and normal fish were found among siblings hatched from phenotypically normal striped bass parents. This suggests, he wrote, "that both environmental and genetic factors may be involved, and that the degree of each can be determined by an experimental approach."

Dr. Emmet's fish was mounted and painted by Jim Roy, Pasadena (Md.) taxidermist. An examination of the mount, Dr. Emmet says, indicates the deformation of the skull would seem to put the fish at a disadvantage when competing for prey.

Greater vision field

The swimming speed would be reduced due to loss of the natural streamlined shape of a rock, he says, and the recessive upper jaw would limit the effectiveness of the bite.

He also notes that the eyes, which bulge from the head, would be susceptible to injury, and expresses the opinion it's a mystery how it survived to such size.

"The positioning of the eyes, however, give the dolphin rock an optimistic, almost human expression, and may account for the fish's demonstrated adaptability," he says.

"The vision fields overlap for over 140 degrees in the horizontal plane, which exceeds that of man. Consequently the fish had excellent potential for three-dimensional vision or perspective not shared by its comrades who can see with but one eye at a time.

"The dolphin rock undoubtedly used this to its advantage and was probably a real 'dead eye' when it came to feeding.

"This fish is an excellent example of mutation, adaptation and survival of the fittest, i.e., Darwinian evolution," Dr. Emmet concludes.

Sees PCB threat

Incidentally Bob Pond, who is also secretary-treasurer of Stripers Unlimited, says in recent years there has been increasing evidence of all kinds of deformities in rockfish, much of which he attributes to an increasing PCB threat.

Stripers Unlimited is involved in striped bass hatchery and stocking programs, usually with stock originating in Maryland. Damaged eggs and resulting distorted fry have been of great concern to Pond, who has petitioned the United States Department of Commerce to put the rockfish on the threatened species list, as the initial step to bring about federal research and management programs for the species.

Incidentally, Joe Boone, a Maryland Fisheries Administration biologist, says he doubts that the closing of the Hudson River to commercial fishing because of high PCB counts will have a bearing on the Chesapeake Bay rockfish picture. Hudson rock spend most of their life there, and if they do go to sea, return to the river for spawning. They're not fish that enter our bay system, Joe explains.

Chesapeake Bay research has indicated PCB levels considerably below the 5 p.p.m. tolerance limit. Rock and other fishes can absorb PCB into their systems quickly. High concentration levels result, but they can be reduced if the fish move to pollution-free waters. However, it takes much longer to reduce the count than to accumulate it.

MONS 037124



Bob Emmet, of Annapolis, with the 24-pound pug-nosed rockfish he discovered, which may be a record. These unusual fish are sometimes called "dolphin rock."

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