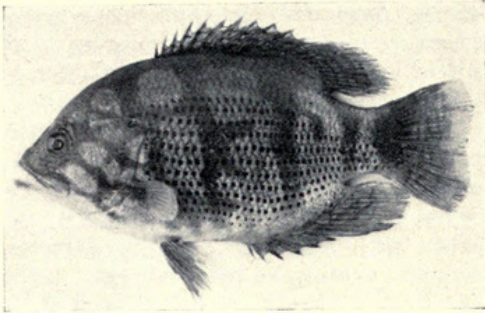


OBSERVATIONS ON LAKE MICHIGAN FISHES AT CHICAGO

By LOREN P. WOODS
CURATOR OF FISHES

EXTENSIVE REACHES of the shores along the southern part of Lake Michigan consist of sandy beaches. Here the waves constantly shift and sort the sand at shallow depths—depositing it, transporting it a little distance, and redepositing it. The sand is ground to incredible fineness, and because it is mixed with silt it resembles



ROCK BASS

An inhabitant primarily of rocky areas in lakes and streams with clear cool water, this fish is a special favorite of young anglers.

mud. It does not act like mud, however (that is, it does not pack firmly), and so it is possible for the deep-reaching waves of storms to stir the bottom in water at least 25 feet deep. This is one of the reasons why the cribs where Chicago's drinking water is gathered are located two to five miles offshore in depths of 32 to 37 feet. The sand may remain close to the bottom, but the turbulence of the waves draws the silt up where it remains in suspension, making the water cloudy for several days after storms and waves subside.

Such a habitat of shifting sand is an extremely difficult place to live. The smothering effect of sand plus poor light resulting from the frequently turbid waters are very unfavorable conditions for both plants and animals and few can maintain themselves here. So, generally speaking, the vast areas of sandy beaches extending considerable distances offshore are barren "deserts." A careful search has revealed *nothing* large enough to be seen living on beaches in depths of less than 5 feet. Occasionally schools of small fishes (perch) may visit during periods of calm, and occasional snails or plants such as *Elodea* or *Myriophyllum* are drifted in, but there exists no permanent flora or fauna.

The majority of kinds of plants and animals live a pelagic existence in the upper open lake-waters well off the bottom, in the quieter waters of the lagoons, or on the rocky reefs where they are raised above the constantly shifting sands. There are several natural rocky outcrops along the shores of the Chicago area. Bottom-living plants and animals are the most abundant where the rocky substrate permits attachment of algae and the holdfast organs

of animals. Snails (*Goniobasis*) may live here after being washed in from deeper waters but they are probably not permanent residents. Lake trout formerly spawned on rocky reefs off Lincoln Park.

MAN-MADE REEFS

Jetties, breakwaters, and sea-walls with their extensive protective foundations of large rocks have created a vast series of artificial reefs along the city waterfront and greatly increased the living space for many reef-dwelling forms, of which the most conspicuous are crayfish and log perch.

Almost no investigations have been made of the biology of either the natural or artificial reefs here, probably because they are rather inaccessible, relatively barren, and not very interesting.

One day last summer when I was swimming off the sea-wall near the Planetarium the water was unusually calm and clear. Although it was late afternoon, visibility was good to 15 feet. By diving with face mask and swim fins I made observations of the pilings and rocks on the bottom. On the surface a school of whirligig beetles swam aimlessly, as they might on any quiet pond, scattering with every nearby disturbance. The wooden pilings were covered with short golden-green threads of algae that moved with the slight motion of the water. Among the pilings and algae were hundreds of small yearling perch, 2 or 3 inches long, too small to be interested in the shiners baiting the hooks of the fishermen lining the promontory. Although none of these perch were seen feeding, they probably ate occasional sidekickers (amphipods) and other small invertebrates that live in the tangle of filamentous algae.

Several medium-sized rock bass, probably 6 or 7 inches long, were hiding in the spaces between the pilings. Around them was an area clear of small perch. Neither perch nor rock bass appeared to be frightened by me; but if they were approached, they quickly swam just out of reach and returned as soon as I passed.

CRAYFISH ON GUARD

The bottom here close to the wall is about 12 feet below the surface and consists mostly of angular rocks 1 to 2 feet in diameter. The exposed surfaces of the rocks were clean, probably kept this way by the strong currents of waves deflected by the wall. Between the angular rocks were crevices of various widths and lengths. In many were wedged bottles, bottle caps, and beer cans, and among them, living here in great abundance, were large crayfish. They did not retreat as did the other animals, but when my hand passed above one it would rear up in its most threatening manner with its pincers spread, ready to do battle.

On the smooth rock surfaces were a few

large (3 to 5 inches) log perch. These beautifully shaped, zebra-patterned fish skipped rapidly from one to another rocky prominence with a smooth darting motion. The light yellow of their backs and sides matched the color of the rocks, and their narrow black bands actually made them inconspicuous until they settled on the rocks. Log perch are members of the sub-family of darters in the perch family. These darters are small (1 to 3 inches over-all length with the exception of the log perch). They have a fusiform body and enlarged pectoral fins, but they do not have a swim bladder and are thus heavier than water. As soon as they stop swimming, they quickly sink to the bottom where they brace themselves by their pectoral fins. Most kinds of darters are stream fishes living in the swift waters in the rapids of streams of our area. Log perch, although adapted to large swift streams, are also at home in the strong currents that may move along the face of a promontory sea-wall. They are quite



LOG PERCH

One of the most common of the darters, and the largest, attaining a length of 8 inches, this fish has the appearance of an elongated perch.

active during the winter and not torpid as many fishes are. Their food is small crustaceans and insect larvae.

Diving in other places along the lake front or at other times of the year would certainly add to these sketchy observations, but so far I have not had the opportunity to repeat the experience under such favorable conditions.

Museum Auditor Elected

Miss Marion K. Hoffmann was elected Auditor of the Museum at a meeting of the Board of Trustees on May 22. Miss Hoffmann joined the staff as Bookkeeper in 1952, and since early 1956 has been Acting Auditor.

It's So Simple in Philippines

The marriage ceremony is conducted with little fuss or bother by the Batak tribe of the Philippines. The groom makes a small gift and presents it to the parents of his intended bride. Then the betrothed couple sit down with a married couple and eat from the same dish, smoke the same cigar, and thus become Mr. and Mrs.—it's as simple as that. Other facts about the Philippine Islanders are illustrated in Hall A (Peoples of Melanesia and the Philippines).



Woods, Loren P. 1957. "Observations on Lake Michigan Fishes at Chicago." *Bulletin* 28(6), 5-5.

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