

investigation of these species has been started, and it is no doubt worth while that it should be extended.

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SHUFELDT'S NEW MUD MINNOW.

In the July number of *Aquatic Life* Dr. R. W. Shufeldt boldly adds another synonym to *Umbra pygmæa*. One is obliged to read his entire article, which is unnecessarily voluminous, to the end, where the new name *Umbra pygmæa bilineata* is found. As Shufeldt neglects to select a type, a custom almost universal in these days among naturalists, we shall be obliged to help him out by indicating No. 16, 896, U. S. N. M. from "Trib. of Chesapeake Bay" as such. Apparently this new form is suggested chiefly on its supposed color characters. It is alleged to differ in having but 2 wide dark lengthwise broad bands, while in *U. pygmæa* there are ten, a dozen, or more, narrow dark lengthwise lines. On a previous page, however, Shufeldt admits that "the fish changes its coloration to a wonderful degree when placed in alcohol and other preservative fluids," and also that the living fishes vary widely in color. I found that our living mud minnow exhibits great extremes in variety of color, not only such patterns as Shufeldt mentions, but all sorts of intermediate designs. Also some examples may appear nearly uniform blackish, and others grayish or whitish, though I have not yet found an albino. Now these varieties may even occur in the same stream, pool or mud-hole. Some of these forms are doubtless affected by the condition of the water, as in the cedar-stained streams of our coastal regions fishes are always darker, or even nearly black.

Besides the type Dr. Shufeldt mentioned he examined many examples in the United States National Museum from Eastern Maryland, Laurel (Md.), Chain Bridge (D. C.), and Long Island (Lake Pat-

chogue), N. Y. From this one is inclined to consider these as the localities for his new form, though such are not so stated. I have examined and largely collected a very large series of examples from: New Jersey (Batsto R., Wading R., Mantua Creek, Cedar Swamp Creek, Trenton, New Lisbon, Grenloch, Friendship, Sumner, Cape May Court House, Great Sound Creek, Porchtown, Repaupo, Coopers, Millville Lake, Sluice Creek, Burlington Island, Fishing Creek, Elmer, Lake Hopatcong, Upper Goshen Creek, Pancoast Run, Pitman, McPherson's Branch, Brookdale, Alloway, Cedarville, Shepard's Mill, Clementon, Green Creek); Pennsylvania (Bristol, Scott's Creek, Penn Valley, Guinea Creek, Tullytown Brook, Common Creek, Tinicum Island, Moores, Chester, Bridgewater, Torresdale, Holmesburg, Laurel Bend, David's Well, Rocky Woods, Emilie, Oxford Valley, Langhorne, Glen Lake, Woodbourne, Philadelphia, Schuylkill R.); Delaware (Rehoboth, Bellevue Creek, Bombay Hook, Newcastle, Delaware City, Brown's Branch, Laurel, Lewes); Maryland (Bacon Hill, Big Bohemia Creek, Elk Neck, Aydelotte Branch, Dike Creek); Virginia (Locustville Branch and lower James River). My examples show the 2 or 3 simple dorsal rays and 12 or 13 branched, rarely 14, and the anal with 4 simple rays and 6 or 7 branched, rarely 5 or 8. The scales vary 28 to 35 in a median lateral series to the caudal base, with 3 to 5 more on the latter. Transversely are 12 to 15 scales between the dorsal and ventral origins, and before the dorsal 23 to 30. The proportions of the head, body-depth, etc., vary greatly, but chiefly with age. The eye was found contained $3\frac{2}{5}$ to 5 times in the head, and the young of course with it larger than the adult. There is absolutely nothing in Shufeldt's exposition of the structural characters not covered by my series.

My copied figure, from Jordan and Evermann, is 7 inches long "which is much larger than the fish

ever grows to be" according to Shufeldt. Now this statement needs further verification, as I have seen and examined an occasional example 6 inches long, and it is quite possible one may even exceed 7 inches. In my experience the average size is from 3 to 4 inches. Further Shufeldt says of the figure, "it gives 38 scales instead of 35, and 12 dorsal rays instead of 13; it has too many anal rays." This is entirely misleading, and the artist who made the figure was probably accurate. In truth the figure shows 3 simple and 10 branched dorsal rays and 2 simple and 6 branched anal rays. One also gathers a false impression that the scales would be 35, but I find variants with 40, and do not doubt they may even exceed this.

These notes were made with the idea of placing before ichthyologists an obscure account of a supposed new form of one of our well-known fishes, as it appears upon comparison with some of the facts as brought out with adequate material.

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SYSTEMATIC NOTE ON LOWER CALIFORNIA LIZARDS.

A collection of reptiles, made in Lower California in 1911 by an expedition under the auspices of the American Museum of Natural History and the United States Bureau of Fisheries (Charles H. Townsend, leader, on the U. S. S. Albatross), reveals some interesting records for this peninsula. Among these *Crotaphytus copeii* Yarrow, 1882 (*Proc. U. S. Nat. Mus.* Vol. 5, p. 441), has not been considered valid, Cope, Van Denburgh and Ruthven all relegating it to the synonymy of *Crotaphytus wislizenii* Baird and Gerard. Stejneger has not expressed an opinion regarding its status, the only mention being a noncommittal sentence in his differentiation of the new short-headed species of the Pacific Region, *Crotaphytus silus* (*N. A. Fauna*, No. 3, p.



Fowler, Henry W. 1917. "Shufeldt's New Mud Minnow." *Copeia* 50, 94–96.

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