

ALUTERA MONOCEROS (OSBECK)

ALUTERA MONOCEROS (OSBECK)

NOTICE OF A FILEFISH NEW TO THE FAUNA OF THE UNITED STATES.

By HUGH M. SMITH.

On August 22, 1898, there was taken at Woods Hole, Mass., a small filefish of the genus *Alutera*, which represents a species heretofore not recorded from the coast of the United States. The specimen was obtained by Mr. Vinal N. Edwards, a well-known collector of the United States Fish Commission, to whose activity a number of other additions to the fish fauna of the Atlantic seaboard of the United States have been due. The fish was undoubtedly a straggler from the West Indies, like so many others stranded at Woods Hole by the agency of the Gulf Stream. Active search was made for other specimens, but without success.

It was seen that the specimen was apparently referable to *Alutera monoceros*, a widely distributed filefish of the Indo-Pacific Ocean, but as none of the museums in the United States had examples of that fish, and as the published descriptions and plates did not strictly apply, the status of the Woods Hole fish could not at first be satisfactorily determined. Recently, however, through the courtesy of Dr. G. A. Boulenger, of the British Museum, the Fish Commission has been supplied with a specimen of *Alutera monoceros* from the East Indies, and it has been possible to establish the identity of the fish in question.

The following detailed description of the specimen under consideration is presented because it has features which have not been noted in other descriptions of the species. The form and life colors of the fish are accurately shown in the accompanying plate, which represents the natural size of the specimen and is based on a drawing made under the direction of Dr. H. C. Bumpus while it was still alive:

Total length of specimen, 145 millimeters; length to base of caudal, 120 millimeters. Body very much compressed, deeper than in the common filefish (*A. schoepfii*) of the same length, its greatest depth contained 2.4 times in length to base of caudal. Head, measured from anterior end of branchial opening, contained 4 times in body length. Snout short, somewhat produced, the lower jaw slightly projecting, the muzzle rounded. Eye 0.25 length of head and slightly less than supraorbital space. Posterior end of gill-opening under posterior edge of pupil; length of branchial slit 1.4 times diameter of eye. Profile from dorsal spine to a point on level with pupil convex, upper side of snout straight. Between dorsal spine and beginning of dorsal fin is a slight depression. The ventral surface, from a point near the mouth to a point slightly in advance of anal fin, presents a well-marked protuberance with an irregular wavy outline. Between this protuberance and the anal fin is a distinct notch.

Dorsal rays 50, anal rays 52; both fins very low, their height anteriorly but slightly greater than diameter of eye, gradually becoming lower posteriorly. Dorsal spine slender, slightly curved backward, inserted directly above pupil, twice diameter of eye, and contained 3.5 times in greatest body depth.

The dorsal spine is thickly beset with different-sized spinules in definite series; on each edge of a shallow groove on the posterior surface of the spine there is a series of stout retrorse curved spinules; on front of spine are similar spinules arranged alternately in two series; on each lateral surface of spine, between the anterior and posterior rows of spinules, is an irregular row of much smaller, more numerous sharp spinules having a tendency to turn upward; other minute spinules, irregularly disposed with small bare spaces between, roughen the sides of spine.

Distance from spine to soft dorsal is .85 distance to end of snout. The soft dorsal originates further back than the anal, and its first ray is nearer base of caudal than it is to end of snout. Pectoral rounded, very short, less than diameter of eye, its origin under pupil. Ventral spine absent. Caudal rather short, its length less than that of head; posterior margin evenly rounded when spread. Caudal peduncle slender, its width 1.5 times diameter of eye. Skin velvety to the touch.

Color dull bluish-gray above, becoming yellowish-white on sides and whitish below. Entire body and head covered by well-defined dull-blackish marks of various shapes, some being annular, some vermiculate, and some rounded, elongated, or curved blotches; these are, for the most part, larger than the eye. Dorsal and anal fins pale yellow, pectoral fins colorless. Dorsal spine blackish, with a white filamentous tip; the membrane connected with spine plumbeous. Caudal bluish-gray, with four black crossbars; posterior margin of fin whitish. Iris dark.

The species bears no striking resemblance to any other filefish recorded from American waters. Besides the characteristic markings, it presents morphological features which enable one to readily identify it. From the common long-tailed filefish (*A. schoepfi* of Walbaum) found along the entire Atlantic coast of the United States south of Cape Cod, it may be easily distinguished by its less elongated form, shorter caudal peduncle and fin, more prominent abdomen, more obtuse and thicker snout, fewer dorsal and anal rays (36 and 38, respectively, in *schoepfi*), etc. It differs in about the same particulars from the "long mingo" (*A. punctata* Agassiz), which ranges from the West Indies to Brazil, replacing *A. schoepfi* in those waters; and it may be separated from Catesby's "unicorn fish of the Bahamas" and Parra's "lija trompa" of Cuba (now identified with Osbeck's *Balistes scripta* from Asia) by its abdominal protuberance, shorter body and head, less pointed snout, much smaller dorsal spine, and shorter tail.

The specimen from the British Museum was collected at Manado, in the northern part of the island of Celebes. Its total length is 145 mm., the same as the Woods Hole specimen, and its general resemblance to the latter is close, but the Asiatic specimen has a more convex superior profile of head, a much less marked ventral convexity and dorsal depression, and stronger spinules on the dorsal spine. The colors are much faded, but the traces of markings which remain suggest the same pattern of coloration shown in the Massachusetts fish.

In 1757 Osbeck (in *Reise nach China*) described a filefish from Asiatic waters under the name *Balistes monoceros*, which name was reproduced in the tenth edition of Linnaeus' *Systema Natura* (1758). The synonymy of the fish has been quite varied; under different names it has been recorded from Asiatic and African waters* by Gronow, Gmelin, Walbaum, Freminville, Lesson, Temminck & Schlegel, Bleeker, Hollard, and others.

Recently Jordan & Evermann have put this fish in the genus *Alutera* and have given it a place in the American fauna on the assumption that a fish recorded from

*The known range of this species in the Eastern Hemisphere is from the northern coast of Asia to the middle of the east coast of Africa. It is recorded from Japan, China, Malaysia, India, and Zanzibar, and is perhaps most common in the East Indian archipelago.

Cuba by Parra in 1787, and technically described from that island by Poey in 1863, is the same as the Old World species. On this point these authors say:

The American species seems to be identical with the East Indian *Alutera monoceros*. Should differences appear on comparison of specimens, the former should apparently stand as *Alutera guntheriana*, Poey.—(Fishes of North and Middle America, Bulletin 47, U. S. National Museum, 1898.)

Unfortunately, no specimens of this fish from West Indian waters are known to be preserved, and it is doubtful if any examples are now extant, either in America or Europe, Poey's description being based primarily on a drawing and the whereabouts of his type being unknown. As will subsequently appear, the description of Poey fails in some respects to accurately fit the Old World fish, and quite possibly applies to a distinct species. Should it hereafter be shown that the two are identical, the Woods Hole specimen will be interesting in that it is the only known example taken in the Atlantic since Poey's time, and possibly the only one extant in collections.

It will be observed that the following original description of this fish, as contained in the English translation of Osbeck's work, is based on specimens of the same size as the Woods Hole fish. The only clue to the general form of this species is given indirectly under the head of *Balistes scriptus*, which is said to be "a fish equal in size and appearance to the *Balistes monoceros*, but marked over the whole body, as it were, with blue letters of an Eastern language."

Balistes monoceros is a species of fish which looks like a flounder at a distance and has almost the same taste, but is not so fat. The fish was half a foot long and its body covered with a dark-gray rough skin. We caught several with a hook, and this afforded me an opportunity of describing them.

On each side is a spiracle, and next to it, within the skin, two transversal bones; the first dorsal fin, near the eyes, consists of a reversed brittle bone, which is armed with little hooks; it is the length of a finger's breadth and a little longer than the other fins; the second dorsal fin has 47 rays; the pectoral fins are the least; each has 13 rays; the ventral fins are wanting; in their stead a long bone under the skin; the anal fin is opposite to the second dorsal fin and has 51 rays; the tail has 12 ramose rays; the mouth is oblong and narrow; the lower jaw is somewhat longer than the upper; on each side of it stand three pointed, broad teeth, connected together below, of which the middlemost is split; the lips are movable.—(A voyage to China and the East Indies. By Peter Osbeck. Translated from the German by John Reinhold Forster. London, 1771.)

Later authors, in writing of *A. monoceros* or of the various fishes which have been referred to the synonymy of that species, have so modified and extended the original description that the characters of the species are now much involved. Even conceding to *A. monoceros* a wide range of variation in form and color, it seems possible that several oriental species are included under that name, if differences shown in published descriptions and plates can be relied on. Quotations might be made from numerous works to show the discrepancies in the descriptions of this species, assuming them to apply to the same fish, but a few references will suffice.

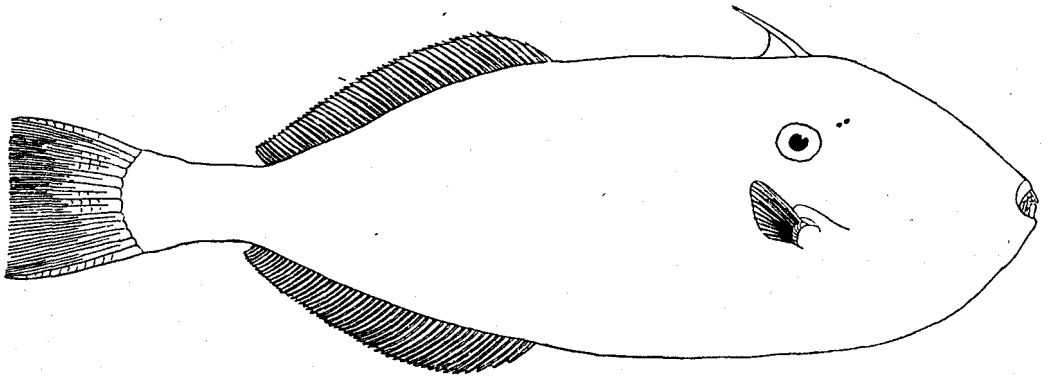
In the ichthyological part of "Voyage of the Sulphur," Richardson describes this fish from China and New Guinea under the name *Aleuterus berardi* Lesson, as follows:

Dorsal 1, 48; anal, 50. The skin of this species looks delicate to the eye, and is softish to the touch, but when viewed through a lens it is seen to be crowded by little bluntish points finer than in the other species [*Aleuterus lavis*]. The dorsal spine is long, and being slender, is easily mutilated, as was the case with the individual from which our figure was taken. Mr. Reeves's drawing does not show the pale roundish marks exhibited in Lesson's figure, and no traces of this can be detected in Sir Edward Belcher's specimen, which also agrees with the Chinese painting, showing a greater prominence of the pelvic bone near the chin. The ground color of the painting is brownish-purple red, with some crimson and purple touches on the temples and face. Length, 15½ inches.

Bleeker ("Atlas Ichthyologique des Indes Orientales Néerlandaises") describes and figures *Aluteres monoceros* with a long, curved, slender, serrated dorsal spine, about half as long as body is deep; the body uniformly pale yellow, dark green, or greenish yellow, occasionally with irregular, diffuse brown spots; the fins yellow. A species of similar form and color, but with a short, smooth dorsal spine, is shown by Temminck & Schlegel in their "Fauna Japonica"; this fish, which they call *Aluteria cinerea*, is very generally referred to the synonymy of *A. monoceros*.

Following is Dr. Günther's description of this species (under the name *Monacanthus monoceros*), based on nine specimens in the British Museum from Asia and Africa:

D. 48, A. 50. Vertebrae 7-13. Skin finely velvety. Body oblong, its depth being two-fifths or less than two-fifths of the total length (without caudal). Snout produced, with the upper profile convex. Dorsal spine feeble, above the middle of the orbit. Part of the gill-opening in advance of, pectoral fin below, the orbit. Caudal fin subtruncate, much shorter than the head; dorsal and anal fins low. Ventral spine, none. Uniform brownish.—(Catalogue Fishes British Museum, VIII, p. 251.)



Alutera monoceros, from India. After Day.

Day, in his "Fishes of India," figures a specimen of this species 15 inches long from the Andaman Islands; an outline copy of this plate is herewith shown, and the description of the species is as follows:

Dorsal, $1\frac{1}{2}$. Anal, $\frac{1}{2}$. Length of head about 4, height of body from $2\frac{1}{4}$ to $3\frac{1}{2}$ in the total body length. Eyes rather small, situated between the upper end of gill-opening and first dorsal fin. Body oblong, snout moderately produced with its upper profile convex. Vertical fins low; dorsal spine weak, rough but barbless. Colors brownish or blackish, the fins yellow.

The most recent description of this species is that of Jordan & Evermann, who embody Günther's description and amplify as follows (loc. cit.):

Depth $2\frac{1}{2}$ to $2\frac{3}{4}$. D. 1, 48; A. 50; vertebrae 7 + 13. Body oblong; snout produced, with upper profile convex. Dorsal spine slender, short, not one-half longer than eye, above middle of orbit. Lower part of gill-opening in advance of eye; pectoral fin below posterior part of orbit. Caudal fin subtruncate, or double concave, with acute angles; much shorter than head, and shorter than its own peduncle; dorsal and anal fins low; ventral spine, none. Skin finely velvety. Color uniform brownish-olive, or grayish, finely mottled with darker, the region below dorsal with faint dusky spots amid paler reticulations.

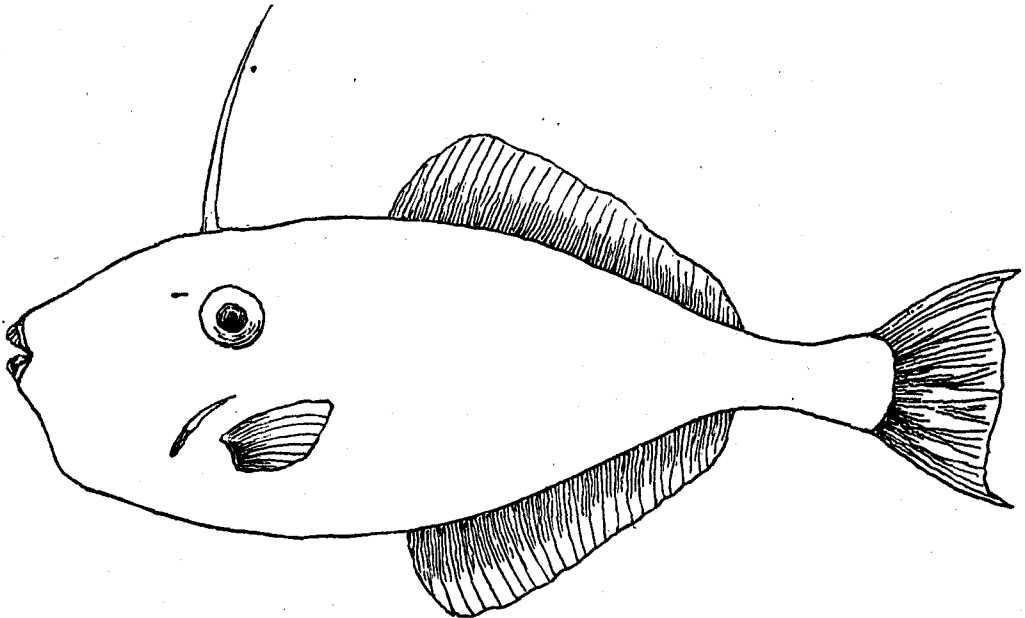
It may not be without interest now to refer to Parra's and Poey's accounts of the Cuban fish that has been supposed to be identical with the East Indian form. Parra describes and figures the species in his rare and interesting work entitled "Description de Diferentes Piezas de Historia Natural" (1787), which had the distinction of being one of the earliest books published in Havana and of containing the first copper-

plates engraved in Cuba. After describing the long-snouted species of filefish locally known as "lija trompa," or trumpet-fish, which Poey in 1863 described as *Alutera picturata* and which has by other writers been identified with *Alutera scripta* (Osbeck), Parra gives the following description of "lija barbuda":

There is only this difference from the foregoing, that in place of the trumpet it has below the mouth an enlargement in the shape of a beard, and that the head for its whole length is much larger; that the spine located between the eyes is much longer, and that throughout its length it is thinner. The tail is much shorter, as if cut vertically. The color is generally ashy, without any marking.

A facsimile of Parra's figure is herewith presented.

In reviewing the ichthyological part of Parra's work, Poey has accorded high praise to that author in a paper entitled "Enumeration of the fish described and



Parra's "*lija barbuda*," from Havana.

figured by Parra, scientifically named by Felipe Poey," from which the following extract is made:

The work cites no authors, contains no classification, no scientific terms, and the names are all popular ones. It is easily seen that Parra has studied no books except the great book of nature; by his own natural gifts he has succeeded in describing and figuring objects as correctly as his cotemporaries, and even surpasses Bloch in the exactness of his figures. Cuvier says: "It is one of the most useful works in the study of the fishes of the Gulf of Mexico, not only on account of the text, but also on account of the very exact figures representing them." Parra does not omit describing the teeth of the jaws, the asperities of the scales, nor even the spinous rays of the dorsal fin and the furrow in which they can be hidden. He dwells more especially on the number and peculiarities of the fins, and he can not be reproached for omitting in his descriptions details that are shown in his figures. He observes, very properly, that the colors are less important than the rest of the organism, for he only treats of them last. To be sure, he neglects the palatine teeth, the spines of the operculum, the denticulations of the preoperculum, the exact number of the spinous and soft rays; but this is not surprising in one who preceded Cuvier & Valenciennes, and who probably was not acquainted with the works of Artedi, Linnæus, or Gronovius.—(Proc. Acad. Sciences Phil., vol. xv, pp. 174-180, 1863.)

After referring to the writings of Bloch, Cuvier, Valenciennes, Guichenot, Hollard, and others who had cited Parra's work, Poey says:

As for myself, it will be seen on examination how much I have added to and corrected all that has hitherto been done. The opinion of authors has not been given without care. I have compared their descriptions with those of Parra, and with actual specimens, having the advantage of working in Havana and of knowing the fish by their popular names.

In considering the fish now in question, Poey refers to previous attempts to assign Parra's "lija barbuda" to some one of the known species, and cites Bloch,* who doubtfully identified it as "*Balistes monoceros* L.," and Hollard,† who referred it to his (Hollard's) *Aluterus anginosus* from the East Indies (now also placed in the synonymy of *A. monoceros*). Poey himself, however, regarded the fish as belonging to his species, *Alutera guntheriana*, which he described as follows in the same journal:

Individual described, 510 millimeters. It is remarkable at first glance for a protuberance which belongs rather to the throat than the chin. Its pelvic region forms a curve, which follows regularly the skin of the abdomen. The body is very compressed. The mouth is small, the snout obtuse. Its depth is one-third its total length; the head, taken from the inferior angle of the branchial opening, is comprised in it a little more than 5 times. The eye is separated 3 times its diameter from the median dorsal line and 6 times from the extremity of the snout. The branchial slit is very oblique, and its anterior half projects beyond the orbit. The nostrils have two apertures close together, placed one before the other, rather near the eye. From what my drawing, by the profile, permits one to believe, the teeth would be as in the preceding species. The dorsal spine is slender, not toothed, terminating in a fine point, almost straight, turned backwards; its groove is short; its height is two-thirds the height of the body underneath—that is, almost two-thirds of the greatest height of the body; its point of attachment is above or a little in advance of the anterior side of the eye. The line of the back rises somewhat in a straight line from this point. The second dorsal is as much distant from the spine as the spine is from the snout. The anal is almost as much advanced, very little more extended. These two fins are a little elevated in front ($1\frac{1}{2}$ the diameter of the eye) and decrease gradually behind, where they present only a third or a fourth of the anterior height. The pectoral is rounded. The caudal is at least twice as high as long; it is divided vertically in such a manner as to have its posterior edge sinuous—that is, convex in the middle and ending in two sharp points, which advance a little less than the convexity. D. 1+48; A. 51; P. 14; C. 12. I have not the skin under my observation, but my drawing represents the scales formed of several microscopic grains which have not yet been viewed under the magnifying glass; they are soft to the touch. The color is plumbeous, but the throat and underneath the belly are whitish. There are on the nape and along the back little brown spots. The sides are adorned with very different markings, sometimes circular, sometimes elongated. These marks disappear very soon; that is why Parra has not represented them in his lija barbuda, which is the actual species. The eye is golden, with some dark waves. The fins are orange, except the caudal, which is a very deep lead color.

This could not be the *Aluterus anginosus* of M. Hollard, who has seen many specimens of it in the Museum of Paris, all from the East Indies. I do not find it cited in the *Enumeratio Piscium* of Dr. Bleeker. The individuals described by M. Hollard (Ann. des Sc. Nat., 4th series, vol. 4, p. 11) have the dorsal spine short and the caudal rounded. D. 49; A. 53.—(Descriptions des poissons nouvelles ou peu connues. Loc. cit., pp. 184, 185. Translation.)

The accompanying illustrations and foregoing descriptions indicate the marked differences between the Cuban fish and the Woods Hole specimen. Furthermore, Poey's account applies to a fish that seems to differ from the variously described Old World examples of *monoceros*. Therefore *A. guntheriana* Poey should perhaps be recognized as a valid species until an examination of specimens from the type locality warrants a different course.

*Systema Ichthyologiæ, 1801.

†Annales des Sciences Naturelles, 1855.