

blood-red particles or scale-like forms characteristic of red hematite. When the light is shut off from below the stage of the microscope the quartz appears as a black opaque mass traversed by an irregular network of anastomosing red lines. The included scales are, apparently, sufficiently abundant and evenly disseminated to fully account for the red color of the pebbles. Besides the hematite the quartz grains contain numerous minute cavities, some of which are empty, while others contain a liquid and bubble. Numerous very small colorless needle-like crystals are also present, penetrating the quartz in every direction.

DESCRIPTION OF A NEW SPECIES OF ALEPIDOSAURUS (A. ESCULAPIUS) FROM ALASKA.

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The fish here to be described as the type of a new species was at first referred by me to *A. ferox*.* It is number 27705 of the National Museum Register. Another example of the same species was previously taken at Unalashka by Mr. W. H. Dall. The type of the species was obtained at Iliuliuk, Unalashka, October 7, 1880, by Mr. Robert King, at his wharf. Mr. King first saw the dorsal fin of the fish emerging from the water, and this attracted his attention. The animal came up into shoal water, and acted as if it meant to go on the beach. Mr. King thrust a spear into it and thus secured it. In the stomach I found twenty-one individuals of *Eumicrotremus spinosus*, most of them adult, and one small squid. A cod-like fish was said to have been in the stomach also, but I did not see this. It is probable that the fish was driven ashore from the adjacent deep water by the torture of a parasite found in its flesh; this parasite has been identified with the genus *Tetrarhynchus* by Mr. F. W. True. It is said to be not an uncommon thing for the "wolf-fish," as this *Alepidosaurus* is styled, to throw itself on the beach at Iliuliuk.

It should be stated that the first notice of my species is published in Bulletin 16, U. S. National Museum, pages 888 and 889; this volume appeared early in April, 1883, but the original description was prepared much earlier than that date and the printing of it was delayed longer than was anticipated.

Alepidosaurus Esculapius differs from *A. ferox* chiefly in the much shorter pectorals and ventrals and in the smaller number of ventral rays. Owing to the somewhat mutilated condition of the specimen, only the skin was preserved in alcohol after full measurements had been recorded.

DESCRIPTION.—The length to the origin of the middle caudal rays was 1,298 millimeters. The greatest height of the body (123 millimeters) is contained $10\frac{1}{2}$ times in the standard length. The depth at the ven-

* Proc. U. S. Nat. Mus. IV, p. 259, Dec. 24, 1881 (name only).

trals (105 millimeters) is contained $12\frac{1}{3}$ times in the length. The least height of the tail is about equal to the length of the middle caudal rays. The species is much stouter in the second half of the body than our numerous examples of *A. ferox*. There is a well-marked fleshy keel along the median line, beginning a little in front of the ventrals and extending to the caudal.

The greatest length of the head (208 millimeters) is contained $6\frac{1}{4}$ times in the standard length. The width of the interorbital area (40 millimeters) is nearly equal to the diameter of the eye. The length of the snout is about twice that of the eye, which is contained nearly 5 times in the length of the head. The length of the intermaxillary (150 millimeters) is nearly $\frac{3}{4}$ that of the head; the bone extends behind the eye a distance equal to about $\frac{1}{3}$ of the diameter of the eye. The length of the mandible is about 3 times the greatest width of the head. The nostril is nearly equally distant from tip of snout and the anterior margin of the eye.

The first dorsal was more or less broken, so that the lengths of its rays are not fully made out. The longest ray measured 235 millimeters. The distance of the first dorsal from the snout is about the same as the length of the head. The beginning of the dorsal, the posterior margin of the operculum, and the origin of the pectoral are in nearly the same vertical. The anterior edge of the first dorsal ray is very finely serrated.

The distance of the adipose dorsal from the snout is $5\frac{1}{4}$ times the length of the head. The length of the base of this fin is $\frac{5}{7}$ of its width at the top.

The distance of the anal from the snout is somewhat more than 7 times the length of its base. The fifth, and longest, anal ray is $\frac{1}{2}$ as long as the intermaxillary, and 3 times as long as the last anal ray.

The upper caudal lobe is imperfect, so that it cannot be known whether or not it was prolonged into a filament. The middle rays are equal to the least height of the tail.

The outer edge of the first pectoral ray is finely serrated. The distance of the pectoral from the snout (223 millimeters) is 3 times the length of the longest anal ray and 4 times the greatest width of the head. The length of the pectoral is less than that of the head by a distance equal to half the interorbital width.

The distance of the ventral from the snout (565 millimeters) equals 4 times the distance from snout to nape. The length of the ventral is a little more than twice that of the middle caudal rays. The first ventral ray is perfectly smooth (serrate in *A. ferox*).

Radial formula: B. 7; D. 39; A. 16; P. I, 12; V. I, 7.

Vertebrae, 50 (as in *A. ferox*).

Color.—General color dark gray, on the lower parts mingled with silvery; everywhere iridescent. Dorsal membrane black with steel-blue reflections. Adipose dorsal, pectorals and caudal black. Ventrals and anal silvery and gray. A row of small translucent spots on each side of the lateral line and keel.

MEASUREMENTS.

	Millimeters.
Length to origin of middle caudal rays	1,298
Body:	
Greatest height	123
Greatest width (near anal)	70
Distance of vent behind origin of ventrals	56
Height at ventrals	105
Least height of tail	36
Length of caudal peduncle*	130
Head:	
Greatest length	208
Distance from snout to nape	140
Greatest width.....	56
Width of interorbital area	40
Length of snout.....	85
Length of operculum.....	56
Length of intermaxillary.....	150
Length of longest palatine tooth	30
Length of mandible	165
Length of longest mandibular tooth	16
Distance from snout to orbit.....	90
Diameter of eye	43
Diameter of iris	32
Dorsal (<i>first</i>):	
Distance from snout.....	210
Length of base.....	825
Length of longest ray †.....	235
Adipose dorsal:	
Distance from snout.....	1,098
Length of base	25
Length along anterior edge.....	45
Length along posterior edge.....	35
Width at top	35
Anal:	
Distance from snout.....	1,014
Length of base	142
Length of longest ray (5th).....	75
Length of last ray.....	26
Caudal:	
Length of middle rays.....	37
Length of lower lobe.....	190
Pectoral:	
Distance from snout	223
Length	188
Ventral:	
Distance from snout	565
Length	77
Branchiostegals	7
Dorsal	39
Anal.....	16
Pectoral	I, 12
Ventral	I, 7
Number of vertebræ.....	50

* From end of adipose dorsal to origin of upper caudal lobe.

† Nearly all the rays are more or less broken.