

DESCRIPTION OF AN APPARENTLY NEW SPECIES OF GASTEROSTEUS (*G. ATKINSII*) FROM THE SCHOODIC LAKES, MAINE.

By TABLETON H. BEAN.

In a large collection of fishes sent to the United States National Museum, in 1878, by Mr. C. G. Atkins, an assistant of the United States Fish Commission, were six specimens of a stickleback which appears to be undescribed, and for which I propose the name given above, as a slight recognition of Mr. Atkins's services as a collector and as an original investigator into the reproductive habits of important fishes.

Gasterosteus Atkinsii resembles in form and coloration *G. pungitius* rather than the perhaps more closely related *G. aculeatus*. It may be at once distinguished from all the other eastern American species by (1) the presence of about fifteen lateral plates, which rapidly diminish in size after the fourth, and (2) its long ventral spines, which nearly or quite reach the vent. The plates are quite unlike those of *G. semiarmatus*, being so thin and posteriorly so small that they are inconspicuous.

For the purpose of description I have selected the individual whose catalogue-number is 22492 *a* (collector's number, 3013). The extreme length of this specimen is 35 millimetres, and its length to the origin of the middle caudal rays is 30 millimetres, which is the basis of comparison for all the other measurements.

The height of the body at the ventrals (.21) equals 3 times the length of the upper jaw (.07), and 3 times the distance between the eyes (.07). Its greatest width (.11) equals the long diameter of the orbit (.11). The least height of the tail (.04) equals the length of the antecedent anal spine (.04) and one-half the length of the snout (.08). The length of the caudal peduncle (.13) somewhat exceeds the width of the head (.12).

The length of the head (.31) equals 3 times the length of the mandible (.10). The length of the snout equals that of the operculum (.08). The length of the upper jaw (.07) equals the distance between the eyes and one-half the length of the post-pectoral plate (.14). The length of the mandible (.10) is contained 10 times in the total length and equals twice the length of the antecedent spine of the second dorsal (.05). The long diameter of the orbit is contained $2\frac{3}{4}$ times in the length of the head and 9 times in the total length.

The teeth are as in the other members of the family.

The spinous dorsal has two spines of equal length. Its distance from the snout (.37) equals slightly more than twice the length of the pectoral (.18). The length of the two spines (.12) equals that of the first and longest ray of the second dorsal (.12) and of the anal (.12). The spines are in a straight line, and with each is connected a delicate membrane.

The distance of the anal from the snout (.66) equals 6 times the long diameter of the orbit. Its length of base (.18) equals $2\frac{1}{4}$ times the length of the operculum. The length of the antecedent anal spine (.04) is contained 3 times in that of the first and longest ray (.12).

The length of the middle caudal rays (.16 $\frac{2}{3}$) is contained 6 times in the total length.

The caudal is slightly forked, almost truncate when expanded.

The pectoral is composed of ten rays. Its distance from the snout (.34) is a little less than twice its length (.18). It extends to the middle of the interval between the two dorsals. The length of the post-pectoral plate (.14) equals twice that of the upper jaw, and its width (.04) equals the length of the antecedent anal spine.

The ventral consists of one spine and one ray. Its distance from the snout (.45) equals 4 $\frac{1}{2}$ times the length of the lower jaw. The spine extends beyond the end of the pubic bones, reaching almost or quite to the vent. Its length (.19) exceeds that of the pectoral (.18). It is very strongly serrated on its outer and finely on its inner margin. The origin of the ventral is slightly in advance of the perpendicular let fall from the second dorsal spine.

Radial formula: B. III; D. II, I, 10-12; A. I, 8-9; C. + 12 +; P. 10; V. I, 1.

Color.—Dark bands cross the body just as in *G. pungitius*, which it strongly resembles. The ground-color of the body in the alcoholic specimens is almost flesh-color; the major part of the head is silvery, as are the breast and the belly.

Table of Measurements.

Current number of specimen.....		22,492 a.	
Locality		Schoolie Lakes, Me.	
		Millime- tres.	100ths of length.
Extreme length.....		35
Length to origin of middle caudal rays.....		30
Body:			
Greatest height.....			21
Greatest width.....			11
Height at ventrals.....			21
Least height of tail.....			4
Length of caudal peduncle.....			13
Head:			
Greatest length.....			31
Greatest width.....			12
Width of interorbital area.....			7
Length of snout.....			8
Length of operculum.....			8
Length of upper jaw.....			7
Length of mandible.....			10
Distance from snout to orbit.....			8
Diameter of orbit.....			11
Dorsal (spinous):			
Distance from snout.....			37
Length of first spine.....			12
Length of second spine.....			12
Dorsal (soft):			
Length of antecedent spine.....			5
Length of first ray.....			12
Anal:			
Distance from snout.....			66
Length of base.....			18
Length of first spine.....			4
Length of first ray.....			12
Length of longest ray.....			12
Caudal:			
Length of middle rays.....			16 $\frac{2}{3}$

Table of Measurements—Continued.

Current number of specimen	22,492 a.	
Locality	Schoolic Lakes, Me.	
	Millime- tres.	100ths of length.
Pectoral:		
Distance from snout		34
Length		18
Length of post-pectoral plate		14
Width of post-pectoral plate		4
Ventral:		
Distance from snout		45
Length		19
Branchiostegals	III	
Dorsal	II, I, 12	
Anal	I, 9	
Caudal	+ 12 +	
Pectoral	10	
Ventral	I, 1	
Number of plates in lateral line	15	

Additional Radial Formulae.

Current number of specimen	22,492 b.	22,492 c.	22,492 d.	22,492 e.	22,492 f.
Locality	Schoolic Lakes, Maine.				
	Millime- tres.	Millime- tres.	Millime- tres.	Millime- tres.	Millime- tres.
Extreme length	36	33	31	30	30
Length to origin of middle caudal rays	31½	28	27	26	26
Dorsal	II, I, 12	II, I, 12	II, I, 11	II, I, 10	II, I, 11
Anal	I, 9		I, 8	I, 8	I, 8
Caudal	12	12			
Pectoral	10	10			
Ventral	I, 1	I, 1	I, 1	I, 1	I, 1

WASHINGTON, May 14, 1879.

REVIEW OF THE PLEURONECTIDÆ OF SAN FRANCISCO.

By W. N. LOCKINGTON.

The *Pleuronectidæ* of the Pacific Coast have been described by Girard (Proc. Acad. Nat. Sci. Phil. VII, 1854; VIII, 1856; and Pac. Rail. Rep. Vol. X, 145-156), by Ayres (Proc. Cal. Acad. Sci. 1855, Vol. I, 40, and Vol. II, 1859, 29-30), by Günther (Cat. Fish. Brit. Mus. Vol. IV, 1862, pp. 399-457), and by Gill (Proc. Ac. Nat. Sci. Phil. 1862, 280-281; 1864, 194-199; and 1865, 177). The greater number of the species was characterized by the first of these authors; but as the materials at hand were insufficient for thorough description, consisting usually of single or immature examples, the descriptions were necessarily incomplete. Dr. W. O. Ayres, among the many valuable additions to our ichthyological knowledge made by him during his residence on this coast, added two valid species to the list of our flounders. Dr. A. Günther enumerates the species described by Girard and Ayres, but collocates some of them