

40^{mm}; the stem, 70^{mm}; the body, 110^{mm}; diameter of the stem, 10^{mm}; of the body, 20^{mm}; length of lateral processes, 25^{mm}; their diameter in middle, 3^{mm} to 4^{mm}. The smallest specimen seen has the stem 40^{mm} long; the body, 30^{mm} long; diameter of the stem, 5^{mm}; of the body, 15^{mm}; length of lateral processes, up to 20^{mm}.

Numerous specimens of this very remarkable sponge have been brought in by the halibut fishermen from the deep-water fishing grounds off Nova Scotia, during the past year, and presented to the U. S. Fish Commission. Two of the best were taken by Captain McCormick and crew, of the schooner "Wachusett," in 180 fathoms, N. lat. 43° 17', W. long. 60° 58'. Several specimens have been presented by Capt. J. W. Collins and crew, of the schooner "Marion," from Banquereau.

NEW HAVEN, CONN., October, 1879.

DESCRIPTION OF A NEW GENUS AND SPECIES OF FISH, *LOPHOLATILUS CHAMÆLEONTICEPS*, FROM THE SOUTH COAST OF NEW ENGLAND.

By G. BROWN GOODE and TABLETON H. BEAN.

A few days ago Captain William H. Kirby, of Gloucester, Massachusetts, took 500 pounds of a remarkable new fish on a cod-fish trawl in lat. 40° N., lon. 70° W., at a depth of 84 fathoms, 80 miles south by east of Noman's Land. One of these was forwarded by him to the United States National Museum, and forms the type of a new genus and species. The single individual secured (No. 22899, Earl 342) is 33 inches long. The largest one taken, according to Captain Kirby, weighed 50 pounds.

The species appears to be generically distinct from the already described species of the family *Latilidae* Gill. It is related by its few-rayed vertical fins and other characters to the genus *Latilus* as restricted by Gill, but is distinguished by the presence of a large adipose appendage upon the nape, resembling the adipose fin of the *Salmonidae*, and by a fleshy prolongation upon each side of the labial fold extending backward beyond the angle of the mouth. For this genus we propose the name *Lopholatilus*.

Lopholatilus chamæleonticeps sp. nov.

DESCRIPTION.—The greatest height of the body (.306), which is at the ventrals, is contained about 3½ times in the length to the origin of the middle caudal rays, and 4 times in the extreme length. Its greatest width (.144) equals the length of the caudal peduncle (.144); this latter being measured from the end of the soft dorsal to the origin of the middle caudal rays. The least height of the tail (.0867) is contained 4 times in the distance of the spinous dorsal from the snout.

The greatest length of the head (.33) is contained 3 times in the length to the origin of the middle caudal rays. Its greatest width (.165) is slightly more than twice the width of the interorbital area (.08). The length of the snout (.122) is contained twice in the length of the pectoral of the right side (.244). The length of the operculum to end of flap

(.11) is $\frac{1}{6}$ of total length. The length of the upper jaw (.15) equals $\frac{1}{2}$ the height of the body at the ventrals, and is contained $2\frac{1}{2}$ times in the length of the head. The maxilla extends to the perpendicular through the anterior margin of the orbit; the mandible does not quite reach the perpendicular through the middle of the orbit; the length of the labial appendage is slightly more than half the long diameter of the orbit and $\frac{1}{3}$ the length of the 1st pectoral ray. The length of the mandible (.156) slightly exceeds the distance from the snout to the orbit (.15), and equals 3 times the long diameter of the eye (.052), which is contained $6\frac{1}{2}$ times in the length of the head. The operculum and preoperculum are scaly; the latter is finely denticulated on its posterior margin. The distance of the posterior nostril from the eye equals the length of the first anal spine; the distance between the anterior nostril and the end of the snout is twice as great. The intermaxillaries are supplied with an outer series of about 19 canine teeth, and behind these a band of villiform teeth widest at the symphysis. The mandible has a few large canines and an inner series of small conical teeth continued from a patch of similar teeth at the symphysis; vomer and palatines toothless.

The distance of the adipose dorsal from the snout (.206) equals nearly 3 times its height (.07); its length of base (.123) equals the length of the snout. The height of the adipose dorsal equals the distance from the tip of the ventral to the vent.

The distance of the spinous dorsal from the snout (.347) equals the distance of the ventral from the snout (.347); its length of base (.144) equals the length of the caudal peduncle. The 1st spine is imperfect—what remains of it is $\frac{1}{3}$ as long as the 3d spine (.09). The 2d spine (.082) is about equal to the width of the interorbital area. The 4th and the 6th spine are equal in length (.097) and equal the distance from the end of the snout to the posterior nostril. The 5th spine (.095) is a little shorter than the 6th. The last spine (7th) is contained 10 times in the total length. The length of the first ray of the soft dorsal (.094) equals the distance between the anterior nostril and the end of the snout. The 13th, and longest ray (.147), about equals the length of the base of the spinous dorsal. The last ray (.07) is half as long as the 13th. The 13th ray of the soft dorsal extends to the origin of the external caudal rays.

The distance of the anal from the snout (.60) is about equal to twice the height of the body at the ventrals. The length of the anal base (.318) is slightly more than twice the length of the mandible. The 1st anal spine (.04) is half as long as the second dorsal spine. The 2d anal spine (.075) is half as long as the upper jaw. The 1st ray of the anal (.102) is as long as the last spine of the dorsal. The 11th, and longest anal ray (.134), is contained $7\frac{1}{2}$ times in the total length, and nearly equals the length of the middle caudal rays. The last anal ray (.078) is half as long as the mandible. The 11th ray of the anal extends almost to the perpendicular through the origin of the middle caudal rays.

The caudal is emarginate, the external rays being only $1\frac{1}{2}$ times as long as the middle rays. The length of the superior external rays (.216), measured from the origin of the middle rays, equals $1\frac{1}{2}$ times the length of the spinous dorsal base.

The distance of the pectoral from the snout (.32) very slightly exceeds the length of the anal base. The length of the pectoral of the right side (.244) equals twice that of the snout. The pectoral of the left side is probably imperfect; its length (.216) being equal to that of the superior external caudal rays. The right pectoral can be made to reach the vent; in its natural position it extends to the perpendicular let fall from the 4th ray of the 2d dorsal.

The distance of the ventral from the snout (.347) equals 4 times the least height of the tail. The length of the ventral (.183) equals twice that of the 3d dorsal spine, and it extends to a point under the third dorsal ray. The distance from the tip of the ventral to the vent equals half the length of the middle caudal rays. The vent is under the interval between the fourth and fifth dorsal rays.

Radial formula.—B. VI; D. VII, 15; A. III, 13; C. 18; P. II, 15; V. I, 5; L. Lat. 93; L. Trans. 8+30.

Color.—The operculum, preoperculum, upper surface of head, and major portion of the body, have numerous greenish-yellow spots, the largest of which are about $\frac{1}{3}$ as long as the eye. Upon the caudal rays are about eight stripes of the same color, some of them connected by cross blotches. The upper part of the body has a violaceous tint, and the lower parts are whitish, with some areas of yellow. The anal and ventral fins are whitish. The pectorals have the tint of the upper surface of the body, with some yellow upon their posterior surfaces. The soft dorsal has an upper broad band of violaceous, and a narrow basal portion of whitish. Many of the rays have upon them a yellow stripe; there are some spots of the same color, especially upon the anterior portion of the fin.

NOTE.—In the table of measurements, the unit of comparison is the length to the origin of the middle caudal rays.

Table of Measurements.

Current number of specimen	22,889.	
Locality	80 miles S. by E. of Noman's Land.	
	Millime- tres.	100ths of length.
Length to origin of middle caudal rays.....	692	
Length to end of middle caudal rays	788	
Body:		
Greatest height (at ventrals)	212	30.6
Greatest width	100	14.4
Least height of tail	60	8.67
Length of caudal peduncle.....	100	14.4
Head:		
Greatest length.....	230	33
Greatest width	114	16.5
Width of interorbital area	56	8
Length of snout	85	12.28
Length of operculum	77	11
Length of upper jaw.....	105	15
Length of mandible.....	108	15.6
Distance from snout to orbit.....	103	15
Long diameter of eye	36	5.2

Table of Measurements—Continued.

Current number of specimen	22,899.	
Locality	{ 80 miles S. by E. of Noman's Land.	
	Millime- tres.	100ths of length.
Dorsal (adipose):		
Distance from snout	143	20.66
Length of base	85	12.28
Greatest height	48	7
Dorsal (spinous):		
Distance from snout	240	34.68
Length of base	100	14.4
Length of first spine (possibly broken)	20	3
Length of second spine	57	8.24
Length of third spine	63	9.1
Length of fourth spine	67	9.68
Length of fifth spine (possibly broken)	66	9.54
Length of sixth spine	67	9.68
Length of seventh spine	70	10
Dorsal (soft):		
Length of base	300	43.35
Length of first ray	65	9.4
Length of longest ray (thirteenth)	102	14.74
Length of last ray	48	7
Anal:		
Distance from snout	416	60
Length of base	250	31.79
Length of first spine	29	4.2
Length of second spine	52	7.5
Length of first ray	71	10.26
Length of longest ray (eleventh)	93	13.44
Length of last ray	54	7.8
Caudal:		
Length of middle rays	96	13.87
Length of external rays	{ superior .. 150	21.67
	{ inferior .. 145	21
Pectoral:		
Distance from snout	223	32.22
Length	{ right side. 169	24.42
	{ left side .. 150	21.67
Ventral:		
Distance from snout	240	34.68
Length	127	18.35
Branchiostegals	VI	
Dorsal	VII, 15	
Anal	II, 13	
Caudal	18	
Pectoral	II, 15	
Ventral	I, 5	
Number of scales in lateral line	93	
Number of transverse rows above lateral line	8	
Number of transverse rows below lateral line	30	

Capt. William Dempsey, of Gloucester, has since furnished nine fresh specimens of this *Lopholatilus* and the following information:

"The fish were caught with Menhaden bait in July, 1879, while 'trying' for cod 50 miles south by east of Noman's Land, in lat. 40° 10' N., lon. 70° 55' W., 75 fathoms, on very hard clay bottom. Two miles inside of this bottom there is nothing but a green ooze, on which no fish will live.

"Two of the 9 fish were spent females. The few remaining eggs of these 2 were not so large as those of the herring, and resemble the eggs of the Norway Haddock. The other 7 had nothing to determine whether they were male or female.

"The liver is small, somewhat like that of the mackerel, and contains no oil. The flesh is oily and will soon rust after splitting and drying.

"The stomach and intestines are small, the latter resembling those of an eel.

"The swim-bladder is similar to that of a cod.

"Some of the fish 'blister' like eusk when taken on deck."

"They were very abundant and bit freely."

The largest of the individuals brought in by Captain Dempsey has a bifid nuchal crest.

SMITHSONIAN INSTITUTION, July 30, 1879.

ON THE OCCURRENCE OF *LYCODES VAHLII*, REINHARDT, ON LA HAVE AND GRAND BANKS.

By G. BROWN GOODE and TARLETON H. BEAN.

The United States Fish Commission has received from Captain Z. Hawkins and the crew of the schooner "Gwendolen," of Gloucester, Mass., a fine specimen of a species of *Lycodes*, obtained on La Have Bank in latitude 42° 43' north and between the meridians of 62° 20' and 63° 30' west, at the depth of 300 to 400 fathoms, the schooner having changed position while fishing. A second specimen, 632 millimetres in length, was presented by Captain Wm. H. Greenleaf and the crew of the schooner "Chester R. Lawrence," who secured it on the Grand Banks. After a careful comparison of this species with that described by Reinhardt under the name *Lycodes VahlII*,* and previously recorded only from Greenland, we are inclined to believe the two identical.

Reinhardt's description of *Lycodes VahlII* is very full, and is supplemented by a long table of measurements, which has been very serviceable in the study of the specimens before us.

The dentition of the La Have specimen agrees exactly with that of *L. Verrillii*. The lower jaw has the teeth in two series, with an imperfect series of smaller ones between. The upper jaw has a single series of teeth, with a few smaller ones behind the symphysis. There are about seven teeth on the vomer and a single row of about seven on each palatine. The teeth are obtuse-conic, not curved as in *L. Verrillii*. In the specimen of *L. VahlII* from La Have, the colors are somewhat less regular in distribution than those described and figured by Reinhardt; instead of showing six light bands, the arrangement of light color upon the dark ground of the body is as follows: one white spot on each side, above the posterior end of the opercular flap, the spots not meeting on the dorsal line. The first saddle-shaped marking begins on the back, under the 8th ray of the dorsal fin, and extends on either side nearly to the middle of the body. The second saddle-shaped marking begins under the 27th dorsal ray and extends nearly to the margin of the fin, involving the width of about two rays and the connecting membrane, and extends also downward nearly to the middle line of the body, increasing in width as it descends. The next begins under the 54th ray, and resembles the last in form and extent. The next begins under the 79th, and, though smaller, resembles the others. The individ-

* Ichthyologische Bidrag til den Groenlandske Fauna af Johannes Reinhardt, Professor. Vid. Selsk. Naturvidensk. og Mathem. Afh. vii, pp. 86-228. Eight plates (p. 153, pl. v).