

DESCRIPTIONS OF SEVEN NEW SPECIES OF FISHES FROM DEEP SOUNDINGS ON THE SOUTHERN NEW ENGLAND COAST, WITH DIAGNOSES OF TWO UNDESCRIBED GENERA OF FLOUNDERS AND A GENUS RELATED TO MERLUCIUS.

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On the 4th of September, 1880, the Fish Commission steamer "Fish Hawk" made a two days' trip from the summer station at Newport, R. I., to the edge of the Gulf Stream. Several hauls of the trawl-net were made at the following stations: Nos. 865, 866, 867; lat. $40^{\circ} 5'$; long. $70^{\circ} 23' W.$; depth, 65 fathoms. No. 868; lat. $40^{\circ} 1' 42'' N.$; long. $70^{\circ} 22' 30'' W.$; depth, 162 fathoms. No. 869; lat. $40^{\circ} 2' 18'' N.$; long. $70^{\circ} 23' 6'' W.$; depth, 192 fathoms. No. 870; lat. $40^{\circ} 2' 36'' N.$; long. $70^{\circ} 22' 58'' W.$; depth, 155 fathoms. No. 871; lat. $40^{\circ} 2' 54'' N.$; long. $70^{\circ} 23' 40'' W.$; depth, 115 fathoms. No. 872; lat. $40^{\circ} 5' 39'' N.$; long. $70^{\circ} 23' 52'' W.$; depth, 86 fathoms.

The results of this day's work are unparalleled in the history of the Commission. Over 120 species of invertebrates and fishes were added to the fauna of Southern New England. The list of fishes never before seen south of Cape Cod is as follows. The other fishes taken in the same hauls are also mentioned, inclosed in brackets:

1. *Glyptocephalus cynoglossus*, (Linn.) Gill; young; 869, 870.
2. *Monolene sessilicauda*, n. s., n. g.; 870, 871.
3. *Citharichthys arcifrons*, n. s.; 871, 872.
4. *Citharichthys unicornis*, n. s.; 870, 871.
5. *Thyris pellucidus*, n. s., n. g.; 871, 872.
6. *Macrurus Bairdii*, Goode & Bean; adult and young; 870.
7. *Macrurus carminatus*, n. s.; 870.
8. *Hypticometes gobioides*, n. s.; 871.
[*Phycis chuss*, (Walb.) Gill]? (No. 25925); 866.
[*Merluccius bilinearis*, (Mitch.) Gill]; adult and young; 870, 871, 872.
9. *Phycis Chesteri* Goode & Bean; adult and young; 868, 869, 870.
[*Phycis regius*, (Mitch.) Gill]; 870.
10. *Lycodes Verrillii*, Goode & Bean; 870.
11. *Anarrhichas lupus*, Linn.; young; 866.
12. *Peristedium miniatum*, n. s.; 865, 872.
13. *Sebastes marinus*, (Linn.) Lütken, 870, 871.
14. *Raia*, unkn. spec. (with numerous closely studded spines); 871.
15. *Raia*, unkn. spec. (in egg, with very long tail); 869.
16. *Myxine glutinosa*, Linn.; 869, 870.

On this same ground Gloucester fishermen, in 1879, obtained numerous specimens of *Lopholatilus chamaeleonticeps* never elsewhere taken.

The occurrence of *Phycis regius* and *Merluccius bilinearis* at such great depths is worthy of mention.

In the following paper are described the following genera and species, apparently never before observed :

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| <i>Monolene</i> , n. g. | } <i>Pleuronectidæ</i> . |
| <i>Thyris</i> , n. g. | |
| <i>Hypsicometes</i> , n. g. <i>Merlucciidæ</i> ? | |
| <i>Monolene sessilicauda</i> , n. s. | |
| <i>Citharichthys arctifrons</i> , n. s. | |
| <i>Citharichthys unicornis</i> , n. s. | |
| <i>Thyris pellucidus</i> , n. s. | |
| <i>Macrurus carminatus</i> , n. s. | |
| <i>Hypsicometes gobioides</i> , n. s. | |
| <i>Peristedium miniatum</i> , n. s. | |

I am greatly indebted to Mr. Frederick Gardner, jr., who has assisted in the preparation of this paper.

Monolene,* new genus.

A genus of pleuronectoid fishes with thin elongate body and sessile caudal fin. Eyes upon left side very close together, and near to profile. Mouth moderate; the length of the maxillary less than one-third that of the head. Teeth minute in the jaws, in single series, nearly equal on both sides, though perhaps a trifle stronger on the blind side; absent on vomer and palatines. Pectoral fin upon blind side totally absent. Dorsal fin commences in advance of the eye upon the snout. Dorsal and anal rays simple. Caudal fin sessile, almost confluent with dorsal and anal. Ventrals normal. Scales rather large, ctenoid upon colored side, cycloid upon blind side. Lateral line marked; on colored side strongly and angularly curved above the anterior two-thirds of the pectoral; on the blind side straight, rising slightly as it approaches the region of the gill-opening. Gill-rakers few, feeble. Vertebrae 43.

Monolene sessilicauda, new species.

Extreme length of specimen described 0.156^m.†

The height of the body (38) is about three-eighths of the total length (without caudal), and is equal to twice the distance of the origin of the ventral from the snout (19); its height over the ventrals (25) is about five times the longitudinal diameter of the lower eye (5), the least height (8.5), at the base of the tail, slightly greater than the length of the lower jaw (8). The body is thin its greatest width (5) not exceeding the longitudinal diameter of the orbit.

Scales subcircular, with irregular outline, about 2 millimeters in diameter, or in diameter about one-fourth (1.25) the diameter of the eye. The posterior edge of each scale upon the colored side is pectinate with about fifteen denticulations. The scales of the blind side are oval, non-pec-

* Etymology: *μόνος* = single; *ὠλένη* = an arm.

† No. 26004.

minate, about as large as those of the colored side. The head is everywhere closely thatched with scales, even to the edges of the lips, and small scales occur on the bases of the caudal, pectoral, and ventral fins, and upon the rays of the vertical fins nearly out to their tips. There are about 23 rows above and 25 below the lateral lines on the colored side, behind the curve of the line.

Lateral line of colored side strongly bent in its anterior part over the base and anterior two-thirds of the pectoral fin. There are about 92 scales in the lateral line, 72 of them in its straight portion. The arc of the curved portion of the lateral line (12) is slightly more than double the distance of its highest portion above the line of the straight portion of the line were it continued (5). The curve of the line is very peculiar, having two angles; that nearest the head being most obtuse. The lateral line on the blind side is nearly straight, slightly ascending above the abdominal cavity.

The length of the head (20) equals one-fifth of the standard length, and four times diameter of eye, or length of perculum (5). Distance from snout to margin of upper eye (5) much greater than distance to lower eye (3), and less than length of the maxillary (5.5), the posterior margin of which passes the perpendicular from the anterior margin of the lower eye. The width of the interorbital area is very small, less than one-sixth of the diameter of the eye. The length of the mandible (8) is two-fifths of the head.

The dorsal fin begins upon the snout in the perpendicular from the anterior margin of the lower eye. It is composed of from 99 to 104 simple rays (in five specimens), the longest of which in the posterior fourth of the fin; their length (9) nearly half that of the head. The anal fin begins between the tips of the ventral, close to the vent, and under the insertion of the pectoral. It is composed of 79 to 84 simple rays, the longest in the posterior fourth; their length (7) slightly more than one-third the length of the head.

The caudal is sessile, rounded, the middle rays in length (17) nearly double the longest dorsal rays.

The pectoral, present only on the colored side, is inserted close to the branched opening, its length (15) three-fourth that of the head.

The ventrals are upon the medium ventral line, even in length (6), slightly shorter or nearly equal to the longest rays of the anal.

Color on the left side ashy brown, with numerous more or less distinct darker brown spots. On the blind side white. Pectoral blackish, with traces of lighter transverse bands.

Radial formula: D. 99-103; A. 79-84. Lateral line (92).

Eleven specimens, ranging in length from .094 to .156 millimeter, were taken, September 4, in hauls 870 and 871.

Current number of specimen	26,004.		26,004b.		26,004c.		26,004c.	
Locality	870.							
	Milli- meters.	100ths of length.	Milli- meters.	100ths of length.	Milli- meters.	100ths of length.	Milli- meters.	100ths of length.
Extreme length.....	156							
Length to end of middle caudal rays.	133	100						
Body:								
Greatest height.....		38						
Greatest width.....		5						
Greatest circumference.....		25						
Height at ventrals.....		25						
Least height of tail.....		8.5						
Head:								
Greatest length.....		20						
Distance from snout to upper eye.....		5						
Width of interorbital area.....		7.5						
Distance from snout to lower eye.....		2						
Length of operculum.....		5						
Length of maxillary.....		5.5						
Length of mandible.....		8						
Diameter of orbit, longitudinal.		5						
Dorsal (spinous):								
Distance from snout.....		3						
Greatest height.....		9						
Anal:								
Distance from snout.....		22						
Height at longest ray.....		7						
Caudal:								
Length of middle rays.....		17						
Pectoral:								
Distance from snout.....		21						
Length.....		15						
Ventral:								
Distance from snout.....		19						
Length.....		6						
Dorsal.....	103		102	99			103	103
Anal.....	84		81	81				79
Number of scales in lateral line.....		*92						
Number of transverse rows above lateral line.....		(23)						
Number of transverse rows below lateral line.....		(25)						
Number of vertebrae.....		5						

*20 in curve.

Citharichthys, Bleeker.

A genus of pleuronectoid fishes. Mouth rather wide, the length of the maxillary almost one-third that of the head. Eyes upon left side, the upper one very near to profile. Teeth quite minute, on a single series in each jaw, rather more prominent upon the blind side. Vomerine and palatine teeth none. Pectoral fin upon blind side much shorter and with fewer rays than upon colored side. Ventrals also asymmetrical, the sinistral one upon the median ventral line, the dextral one slightly in advance and crowded up upon the blind side. Dorsal fin commences in front of the eye upon the snout. Dorsal and anal rays simple. Caudal fin subsessile, its peduncle not much developed. Scales large, flexible, cycloid, very deciduous. Lateral line strongly defined, straight or very slightly curved anteriorly. Gill-rakers short, rather stout, flexible. Vertebrae 34 (in *C. arctifrons*). Gill membranes broadly united below the throat; gill rakers lanceolate. Branchiostegals 5.

Citharichthys arctifrons, new species.

Extreme length of specimen described 137 millimeters.*

The height of the body (37) is about three-eighths of its total length (without caudal), and is equal to about four times the height of the tail (9) and about five times its thickness (7).

The scales are irregularly polygonal, cycloid; the largest about 6 millimeters in diameter; the diameter (5) nearly equal to that of the eye. The scales are flexible, loosely arranged, and very easily detached, so that it is difficult to secure a specimen in good order. Small scales on the rays of the ventral fins. There are forty scales in the lateral line (on the colored side), which is sharply defined and straight, and seven or eight above and the same number below the lateral line at the broadest part of the body.

The length of the head (24-24½) is about one-fourth that of the body, and four times the diameter of the eye (6). The interorbital space (1) is very narrow, equal to the difference in the distances from snout to lower eye (4) and snout to upper eye (5). The length of mandible (10-10½) is about double the latter distance; the length of the maxillary (7-7½) slightly more than the greatest width of the body.

The dorsal fin begins upon the snout, above the anterior margin of the upper eye. Its greatest height (13-15) is about three times the distance of its anterior ray from the snout. It is composed of 82 to 83 simple rays. The anal begins under the axil of the pectoral, its greatest height (14-15) equal to or slightly exceeding half the distance of its anterior ray from the snout. It is composed of 67 simple rays.

The caudal is subsessile, triangular, of 16 rays; its length about equal to that of the head. In dorsal, anal, and caudal the rays appear to project beyond the connecting membrane half or two-thirds of their own length.

The pectorals are inserted far below the lateral line and close to the gill-opening. The pectoral on the colored side is composed of more rays (9-10) than that of the blind side (7), its length (17-19) being about double that of its mate (7-9). The ventrals are composed of 4 rays.

Color dirty light brown.

Radial formula: D. 82-3; A. 67; C. 16; P. 9-10-7; V. 5; L. lat. 40.

Numerous specimens, ranging in length from 90 to 140 millimeters, were taken, September 4, in hauls 870-871. The females were full of ripe spawn. It is not probable, therefore, that the average size of the species is much greater than that of the specimens described.

* No. 25908, Nat. Mus.

Current number of specimen	25,908.		.....
Locality	871.		871.	
	Milli- meters.	100ths of length.	Milli- meters.	100ths of length.
Extreme length	137	.....	122	.....
Length to end of middle caudal rays	111	100	102	100
Body:				
Greatest height of middle dorsal		38.5		37
Greatest width		7		.....
Least height of tail		9		9
Head:				
Greatest length		24.25		24
Width of interorbital area		1		1
Length of snout to upper eye		5		5
Length of maxillary		7.25		7
Length of mandible		10.25		10
Distance from snout to lower eye		4		4
Diameter of orbit, longitudinal		6		6
Dorsal (spinous):				
Distance from snout		4.75		5
Length of base		96		.....
Greatest height, posterior $\frac{1}{2}$		15		13
Anal:				
Distance from snout		28.75		27
Length of base		71		.....
Height at longest ray, posterior $\frac{1}{2}$		14		15
Caudal:				
Length of middle rays		25.50		23
Pectoral:				
Distance from snout		25		25
Length		19-7		17-9
Ventral:				
Distance from snout		22		21
Length		11		10
Dorsal		83		82
Anal		67		67
Caudal		16		.....
Pectoral		10-7		9-7
Ventral		5		5
Number of scales in lateral line, from root of ventral obliquely back		40		40
Number of transverse rows above lateral line .....		.....		1

Citharichthys unicornis, new species.

Extreme length of the specimen described (No. 26003) 69 millimeters.

The greatest height of the body (47) is slightly less than its length, and is about $4\frac{1}{4}$ times its least height at the tail (11). The body is much higher than in *C. arctifrons*, its greatest height over the pectorals, the contours then descending in almost straight lines to the base of the tail. The thickness of the body (6) is less than in *C. arctifrons*, being contained nearly seventeen times in the standard length.

The scales are thin, deciduous, smaller than in *C. arctifrons*. There are about forty scales in the lateral line, which is slightly curved over the pectoral, and, as nearly as can be determined in the denuded specimens before me, about twelve rows above and twelve below the lateral line at the broadest part of the body.

The length of the head (25) is one-fourth of the standard length and about three times the diameter of the eye (9), or the distance from the snout to the upper eye (9). The interorbital space is wide (4), equal to the length of the snout, and diagonally crossed by a strong ridge, a continuation of two ridges which form the upper boundary of the lower and the lower boundary of the upper orbit.

The length of the maxillary (11) is less than half, that of the mandible

(13) more than half, that of the head. The teeth are minute, in single rows, closely set in the jaws, somewhat stronger upon the blind side. A strong short spine above the snout, at the anterior termination of the ridge at the lower margin of the upper eye. Hence the specific name *unicornis*.

The dorsal fin begins at the side of the preorbital spine, its anterior rays being slightly crowded over upon the blind side. It is composed of 73 to 75 simple rays. Its greatest height (13) is half the length of the head.

The distance of the anal from the snout (33) is one-third of the standard length. The number of rays is 60; their longest (13) equal in length to the longest dorsal rays.

The caudal is pointed, triangular, sessile; its length (22) twice that of the maxillary (11) and two-thirds the distance from the snout to the anal (33). The pectorals are inserted far below the lateral line. The pectoral of the colored side is twice as long (18) as the diameter of the eye, that of the blind side as long (13) as the longest dorsal rays. The former is composed of 10 rays, the latter of 4.

The length of the ventrals (11) is half that of the caudal. They are asymmetrically placed, as is described under the generic diagnosis.

Radial formula: D. 73-75; A. 60; P. 4 right, 10 left; L. lat. 40.

Color ashy gray, with dark lateral line. Eyes black.

Current number of specimen.....	26,003.	
Locality.....	870 and 871.	
	Milli- meters.	100ths of length.
Extreme length.....	69	.....
Length to origin of middle caudal rays.....	57	100
Body:		
Greatest height.....		47
Least height of tail.....		11
Head:		
Greatest length.....		25
Distance from snout to upper eye.....		9
Distance from snout to lower eye.....		5
Width of interorbital area.....		4
Length of snout.....		4
Length of maxillary.....		11
Length of mandible.....		13
Diameter of orbit, longitudinal.....		9
Dorsal (spinous):		
Distance from snout.....		5
Greatest height.....		13
Anal:		
Distance from snout.....		33
Height at longest ray.....		13
Caudal:		
Length of middle rays.....		22
Pectoral:		
Distance from snout.....		28
Length.....		18-13
Ventral:		
Distance from snout on colored side.....		26
Length.....		11
Dorsal.....		75-73
Anal.....		60
Pectoral.....		4 R., 10 L.
Number of scales in lateral line.....		40

Thyris,* new genus.

I feel much hesitation in describing as a member of a new genus this little heterosome fish, which has all the appearance of being the larval form of some larger species. Since, however, it has attained almost the size at which one of the associated species begins breeding, and since I am unable to assign it to any genus already described, it seems desirable to give it a name which may serve to designate it, at least for the time being.

DIAGNOSIS.—A genus of heterosome fishes, with soft, transparent, elongate body. Head very short (in the single species contained about $5\frac{1}{2}$ times in total length of body). Mouth small, toothless. Eyes upon left side, close together, the lower slightly in advance of the upper. Pectoral fin upon blind side shorter and with fewer rays than upon colored side. Ventrals crowded together upon median keel of body, their bases prolonged upon this keel. Dorsal fin commences in front of the eye upon the snout. Dorsal and anal rays simple. Caudal fin sessile, almost confluent with dorsal and anal. Scales very small, thin, easily detached. Dorsal line marked, straight. Body translucent, colorless (except for three longitudinal stripes in the single species). The vertebræ can almost be counted through the flesh when the fish is held up to the light, and the arrangement of the gills is clearly visible through the opercular bones.

Thyris pellucidus, new species.

The length of the specimen described (No. 26005) is 72 millimeters.

The height of the body (32) is about one-third of its length (without caudal), the least height of the tail (7) one-fourteenth. The body is thin, pellucid, larval-like, divided into three longitudinal tracts by depressions at the bases of the rows of interspinous processes, as in *Glyptocephalus*.

The scales are small, thin, easily detached (none remain upon the specimen except a few in the lateral line). The number of transverse rows is estimated at one hundred and twenty, the number of rows above and below the lateral line at the widest portion of the body seventeen or eighteen. The scales in the lateral line are provided with a large central canal. The lateral line is straight on both sides.

The head is very small; its length (18) contained about five and one-half times in the total length of the body. The eyes are small, protruding, the upper almost perpendicularly above, though perhaps slightly posterior to the lower. The diameter of the eye (2) equals the width of the interorbital space (2) and is double the distance (4) from the snout to the upper eye, that from the snout to the lower eye (3) being intermediate. The mouth is small, the shape of the opening being somewhat like that in *Solea*, the upper jaw being somewhat hook-shaped. The length of the upper jaw (4) is two-thirds that of the mandible (6).

The dorsal commences on the snout in advance of the eye, and is com-

* Etymology: *θύρίς* = a window.

posed of 96 to 102 long, flexible, simple rays, their tips apparently extending far beyond the connecting membrane. The length of the longest rays (14) is double the least height of the body at the base of the tail (7).

The anal fin originates at a distance (22) from the snout contained four times and one-half in the length of the body. It is composed of 76 to 81 rays, the longest of which are as long as the head.

The pectoral is inserted close to the gill-opening and far below the lateral line (midway from the black stripe upon the lateral line to the black stripe at the base of the interspinous processes of the anal fin). The pectoral upon the blind side is short, its length (2) equal to the diameter of the orbit, composed of about four or five rays; that upon the colored side longer, its length (3) equal to that of the snout, and composed of about twelve rays. The ventrals are both crowded upon the ventral keel, their bases prolonged upon the keel, their tips embracing the origin of the anal.

Radial formula: D. 96-102; A. 76-81; P. 12 left, 4-5 right.

Color: In life colorless, translucent. In alcohol yellowish white. Three prominent blackish longitudinal stripes or lines upon the left side. The stripe running from the branchial cleft to the base of the tail is less prominent than the two at the bases of the interspinous processes. On the lateral line of the right side there is no stripe, though the two lateral stripes are as prominent as upon the other side. Eyes black.

Current number of specimen'		26,005.	
Locality		870, 871, and 872.	
		Milli- meters.	100ths of length.
Extreme length		72	.....
Length to end of middle caudal rays		60	100
Body:			
Greatest height			32
Least height of tail			7
Head:			
Greatest height			18
Distance from snout to upper eye			4
Distance from snout to lower eye			3
Width of interorbital area			2
Length of maxillary			4
Length of mandible			6
Diameter of orbit			2
Dorsal (spinous):			
Distance from snout			2.5
Greatest height			14
Anal:			
Distance from snout			22
Height at longest ray			18
Caudal:			
Length of middle rays			19
Pectoral:			
Distance from snout			18
Length			3-2
Ventral:			
Distance from snout			16
Dorsal			96-102
Anal			76-81
Pectoral			12 L., 4-5 R.
Number of scales in lateral line			*120

* Estimated from partial count.

Macrurus carminatus, new species.

A single specimen, 248 millimeters in length, was obtained, September 4, at station 871. It is most closely related to *M. calorhynchus* (Risso) Bonap. and to *M. atlanticus* Lowe, but differs in the number of fin-rays and in other characters.

The body is less elongate and stouter than in *M. Bairdii*, Goode & Bean, though its greatest height (12.5) is, as in *M. Bairdii*, one-eighth of total length. The difference in general appearance is due to the fact that in *M. carminatus* the ventral contour retreats less rapidly.

The scales are large, heavy, the free portions covered with long vitreous spines arranged in nine or ten rows. These scales resemble the old-fashioned wool cards. Hence the specific name, from *carmen*, a wool-card. The spines are thicker and more closely set than in *M. Bairdii*, and there is no specialization of the central row. The number of scales in the lateral line cannot be determined, though it probably does not exceed 100, but there are about five transverse rows above it and twelve below it, counting from the vent obliquely backward. In *M. Bairdii* there are 152 in the lateral line, six above and nineteen or twenty below.

Length of head (21) contained a little less than five times in total length. Width of interorbital area (4) about equal to vertical diameter of orbit, and about one-fifth of the length of the head. Length of snout, horizontal diameter of eye, length of postorbital portion of head about equal (7). Length of operculum (35) half that of snout.

Snout long, sharp, depressed, triangular, the lower surface more nearly parallel with the axis of the body than in *M. Bairdii*. The lateral ridges are pronounced and are contained in a straight line under the eyes and upon the preopercula. Strong horizontal ridges continue from the supra-orbital margins to the gill-openings, parallel with the subocular ridges. Nostrils immediately in front of the orbit. Barbel very short.

Teeth small, conical, somewhat recurved, arranged in villiform bands.

Distance of first dorsal from snout (23.5) about four and one-half times the length of its base (5), its distance from anterior margin of orbit much less than the length of the head. First spine very short, hardly perceptible above the skin. Second spine about half as long (11) as the head, slender, unarmed. When laid back, its tip reaches the origin of the second dorsal (the filament is destroyed). The decrease in the length of the spines is very gradual, the sixth being nearly as long as the second, so that the fin is not so triangular in shape as in *M. Bairdii*.

The second dorsal begins in the perpendicular from the seventh ray of the anal. The anal is much higher than in *M. Bairdii*, the length of the longest rays (2) nearly equal to half the width of the interorbital area.

Anal fin inserted under the eighteenth scale of the lateral line (as nearly as can be judged from the distorted specimen). Its longest rays are as long as the width of the interorbital area.

Distance of pectoral from snout equal to twice its own length (11),

which is about equal to the length of the dorsal spine. Its insertion is below the middle of the depth of the body and below the level of the center of the orbit. Its tip does not reach to the perpendicular from the origin of the anal.

Insertion of ventral behind pectoral and slightly in advance of the insertion of the dorsal. Its distance from the snout (22) is greater than twice its length (9). Its long filament does not reach to the origin of the anal fin.

Radial formula: D. I, IX, 80 +; A. 76 +; P. 13; V. 7.

Color silvery gray. The thick, closely-set spines are matted with oozy mud which cannot be removed. This is doubtless the result of the hard usage experienced in the trawl-net.

Current number of specimen.....	26,007.	
Locality.....	871.	
	Milli- meters.	100ths of length.
Extreme length.....	248	100
Body:		
Greatest height under dorsal.....		12.5
Head:		
Greatest length.....		21
Width of interorbital area.....		4
Length of snout.....		7
Length of operculum.....		3.5
Length of mandible.....		7.25
Diameter of orbit.....		7
Dorsal (spinous):		
Distance from snout.....		23.5
Length of base.....		5
Height at first spine.....		11
Dorsal (soft):		
Distance from snout.....		35
Anal:		
Distance from snout.....		27
Pectoral:		
Distance from snout.....		21
Length.....		11
Ventral:		
Distance from snout.....		22
Length.....		10
Dorsal.....		I, IX, 80+
Anal.....		76+
Pectoral.....		13
Ventral.....		7
Number of scales in lateral line.....		[100]
Number of transverse rows above lateral line.....		(6)
Number of transverse rows below lateral line.....		(18)

Hypsicometes,* new genus.

A small specimen, much contracted and distorted from immersion in strong alcohol, is the only material upon which to base this description. Although not quite satisfied that the relations of this fish are most nearly with *Merlucciidae*, I venture to assign it temporarily to a position in this family, hoping that additional material may confirm my present belief. In some respects it resembles the *Blenioids*, but pseudobranchiae are absent.

DIAGNOSIS.—A genus of fishes in general form closely resembling *Merluccius*, but with the elongate body covered with large scales (not

* Etymology: *ὑψι* = in deep water; *κωμῖτης* = an inhabitant, a dweller.

much more than half as many in lateral line as in *M. bilinearis* nor one-third as many as in *M. vulgaris*). Mouth rather small. A separate caudal. Two dorsal fins, the first composed of a few long rays, the second with longer base. One elongate anal. Ventrals well developed, with broad base composed of six rays. Teeth on the vomer and in the jaws in two or three rows, rather feeble. The eyes large, near together, looking upward. No barbel.

Hypsicometes gobioides, new species.

The general appearance of the fish is suggestive of a species of *Gobius*.

Head rather broad and somewhat depressed; its greatest width (13) about equal to the greatest height of the body (12), and less than one-half its length (30), which is contained three times and one-third in the standard length. The cleft of the mouth is horizontal, extending to the perpendicular from the anterior margin of the orbit. The snout is broad, rounded, as long (10) as the longitudinal diameter of the eye. The interorbital space is narrow (2), one-fifth the length of the snout, the eyes large, very close together, looking upward. The length of the maxillary (13) is equal to the greatest width of the head. The mandible is much longer. Teeth minute, in two or three rows on jaws and on vomer. Gill-opening wide, the membranes united over the isthmus near the snout.

Body shaped much as in young of *Merluceius*, the least height of the tail (5) about half of the greatest width of the body (11). The scales are large, about 58 transverse rows from gill-opening to base of caudal. The character of the scales and the position of the lateral line cannot be decided from the specimen described.

The dorsal originates above the base of the pectoral, and consists of six or seven flexible rays as long (10) as the snout. The second dorsal has a base four times as long (10) as the snout, and extends nearly to the base of the caudal. It is composed of about seventeen rays, the longest slightly longer (11) than the longest in the first dorsal.

The origin of the anal is under that of the second dorsal; its base length (48) is equal to the distance of its anterior ray from the snout (48). It is composed of about sixteen rays, the longest of which (10) is equal to the longest in the first dorsal.

The caudal is truncate, its length (18) three-eighths of that of the base of the anal.

The insertion of the pectoral is distant from the snout (33) one-third of the distance from snout to base of caudal. Its length (10) equal to the height of the first dorsal.

The ventrals are far apart, with broad bases lying flat upon the ventral surface, composed of six rays. They are situated far in advance of the pectorals and their length (14) equals two-fifths of the distance from snout to first dorsal.

Radial formula: D. VI (or VII), 17; A. 16; V. 6; L. lat. 158.

Color grayish, with obscure cloudings. Belly lighter. A large black blotch upon the base of the upper caudal rays.

	Milli- meters.	100ths of length.
Extremo length.....	51	.....
Length to end of middle caudal rays.....	46	100
Body:		
Greatest height.....		12
Greatest width.....		11
Least height of tail.....		5
Head:		
Greatest length.....		30
Greatest width.....		13
Width of interorbital area.....		2
Length of snout.....		10
Length of maxillary.....		13
Diameter of orbit, longitudinal.....		10
Dorsal (spinous):		
Distance from snout.....		35
Length of base.....		8
Greatest height.....		10
Dorsal (soft):		
Length of base.....		40
Height at longest ray.....		11
Anal:		
Distance from snout.....		48
Length of base.....		48
Height at longest ray.....		10
Caudal:		
Length of middle rays.....		18
Pectoral:		
Distance from snout.....		33
Length.....		10
Ventral:		
Distance from snout.....		23
Length.....		14
Dorsal.....		VI-[VII], 17
Anal.....		16
Ventral.....		6
Number of scales in lateral line.....		[58]

Peristedium miniatum, new species.

Total length of type (No. 26023) 300 millimeters.

The greatest width of the body (20) is equal to its greatest height (19.5), being one-fifth of its total length without caudal. The general armature of the body is much like that described by Günther under *Peristethus brevirostre*.* The number of plates between the gill-opening and the base of the tail is from twenty-seven to twenty-nine. There are four series of spiny plates on each side, the spines of the abdominal series becoming very weak and obsolete towards the tip of the tail.

The length of the head (40.15) is two-fifths of the total length without caudal. The length of the preorbital processes (7) is contained about three times and one-half in the distance from their extremities to the anterior margin of the orbit. The interorbital space is deeply concave, its width (6.75) contained between six and seven times in the length of the head. Protuberance on the forehead very slight. The length of the snout (22.5) is more than half that of the head (in young less). The diameter of the eye (6.5) is contained between six and seven times in the length of the head. There is one pair of spines upon the upper surface of the snout behind the base of the preorbital processes, and another larger pair upon the preorbital processes, one upon each. The ridge of the preoperculum terminates in a depressed, short, sharp-pointed spine. The number of small tentacles upon either side of the lower jaw is about

* Cat. Fish. Brit. Mus. ii, 1860, p. 218.

ten, the smallest nearest to the symphysis. The long tentacles at the angles of the mouth are fringed and extend to the base of the pectorals. In other respects Günther's description of *P. brevirostre* is ample for this species.

Color bright crimson.

Radial formula: D. VII, 18; A. 17; C. 16; P. 2 + 10; V. 6. L. lat. 27 on one side, 28 on the other.

Three other specimens had the following: D. VIII, 18; A. 17. D. VII, 18; A. 18. D. VII, 18; A. 18.

The measurements of adult and young specimens are given. The fish when taken seemed to be in the height of the spawning season.

Current number of specimen Locality	26,023. 869.		26,030. 871 (young).	
	Milli- meters.	100ths of length.	Milli- meters.	100ths of length.
Extreme length	300		53	
Length to end of middle caudal rays	272	100	45	100
Body:				
Greatest height at origin of dorsal		19.50		19
Greatest width under pectorals				15
Height at ventrals		19.50		18
Least height of tail		2.75		3
Head:				
Greatest length		40.50		39
Distance from snout to nape		32.75		36
Greatest width		29		30
Width of interorbital area		6.75		12
Length of snout		22.50		18
Length of operculum		10		7
Length of maxillary		12		14.50
Length of mandible		12.50		13
Distance from snout to orbit		21		19
Diameter of orbit, longitudinal		6.50		10
Width of mouth-opening		12		13
End of frontal spine to symphysis of maxillaries		7		6
Length of barbels		29		10
Dorsal (spinous):				
Distance from snout		38.25		40
Length of base		53.50		53.50
Greatest height, second spine		10.75		10.75
Height at first spine		10		10
Height at last spine		3		6
Width of upper surface of occipital plate		7		12.50
Length of upper surface of occipital plate		4.75		8
Width of upper surface of nexal plate		6.50		6.25
Length of upper surface of nexal plate		5		3
Anal:				
Distance from snout		53.50		51
Length of base		36		40
Height at first spine		3.50		3
Height at second spine		6.50		7
Height at third spine		8		8
Height at last spine		4		4
Caudal:				
Length of middle rays		9.50		14
Length of external rays		5		
Pectoral:				
Distance from snout		33		34
Length		18.25		14
Ventral:				
Distance from snout		31		30
Distance from symphysis of mandibles		37.25		40
Length		17.50		20
Isthmus		15.50		15
Dorsal		VII, 18		VII, 18
Anal		18		18
Caudal		16		
Pectoral		2+10		
Ventral		6		
Number of plates in lateral line		28		
From anterior edge of frontal plate to end of frontal spine		9.50		8