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THE

# FRESH-WATER FISHES

AND THOSE ASCENDING THE STREAMS FROM THE SEA



of

## NEW ENGLAND

by E. KNOBEL.

BRADLEE WHIDDEN, PUBLISHER · 18 ARCH ST. BOSTON.



*Henry A. Sherwin.*

THE SPORTING GALLERY  
AND BOOKSHOP, INC.  
No. 38, East 52nd St., New York 22

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# THE FRESH WATER FISHES

OF NEW ENGLAND

(AND THOSE ASCENDING THE STREAMS FROM THE SEA)

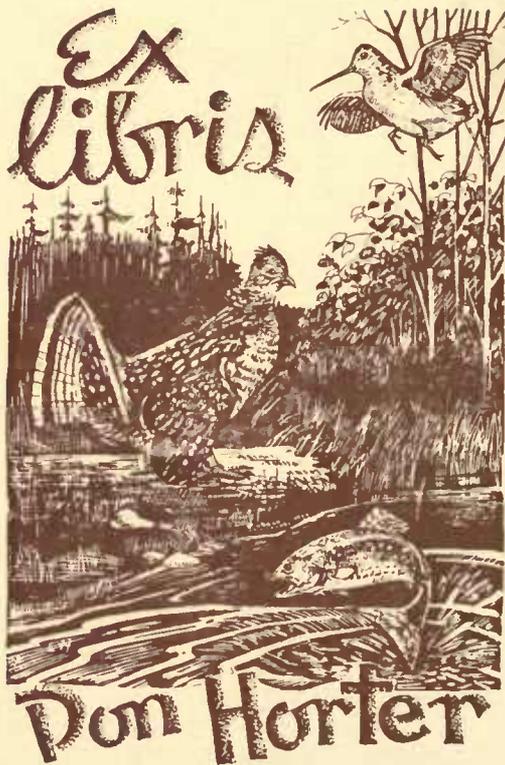
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By EDWARD KNOBEL.

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## INTRODUCTION.

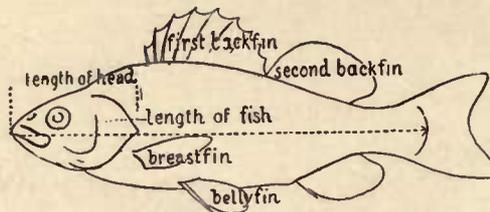
Full-grown fishes have generally some distinct marks by which they can be recognized with certainty. It is not so easy with the young, which often differ greatly from the old ones in shape as well as in color and markings. Their eyes are proportionately larger, their bodies slimmer (see drawing of silvery shiners). Young salmon have black crossbars like yellow perch, etc., etc. Males and females often differ greatly, particularly in the spring.

In examining a young fish, compare the fins with the description in the key. This will lead to a certain group of fishes; and if the specimen is not readily found among them, examine the shape and position of the mouth, the shape of the gill covers, and the size of the scales; find by measurement how many times the length of the head and the depth of the body are contained in the length of the fish; then compare the specimen in these respects with the drawing of the fish most like it in other particulars.

The Latin names of fishes have often been changed. The names here used are taken from Prof. D. S. Jordan's Manual of Vertebrate Animals, 1894.

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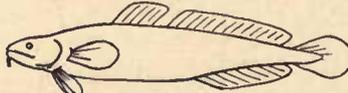
# Key to the Fishes.

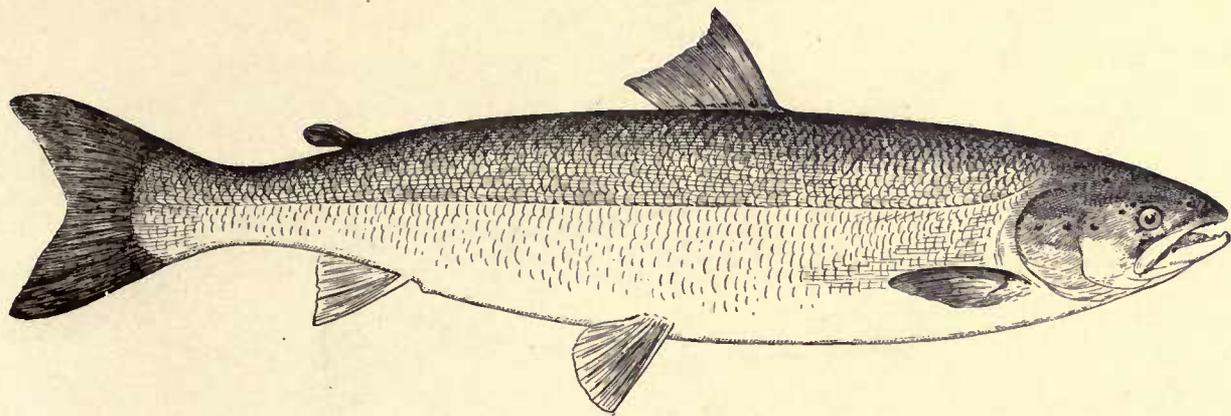


## Belly fins inserted behind breast fins :

	Back fins all soft rayed.		
	Two back fins, the last in fleshy hump; having teeth . . . . .		Nos. 1 to 7
		no visible teeth . . . . .	Nos. 8 to 10
	One back fin only (the second); large mouth . . . . .		Nos. 11 to 14
		small mouth . . . . .	Nos. 15 to 18
	One back fin only (the first) sucking mouth . . . . .		Nos. 20 and 21
		body cylindrical . . . . .	Nos. 22 to 28
		body flat . . . . .	Nos. 19, 29 to 34
	Back fins spinous rayed; two free fins . . . . .		Nos. 35 to 44
		two connected fins . . . . .	Nos. 45 to 48
	One sharp stinging spine in each forward fin . . . . .		Nos. 49 and 50
	Several sharp stinging spines instead of first back fin . . . . .		Nos. 51 to 56

## Belly fins inserted in front of breast fin on the throat:

	With soft rays . . . . .	No. 57
	With spinous rays . . . . .	No. 58
	With no belly fins :	
	With biting mouth . . . . .	No. 59
	With sucking mouth . . . . .	Nos. 60, 61



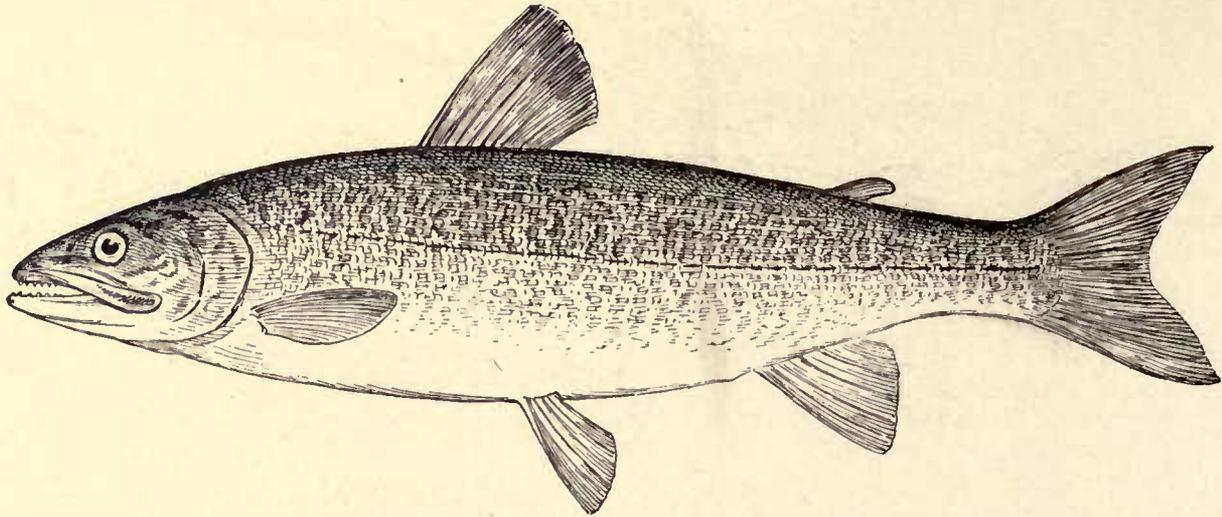
**1. The Salmon.** GRILSE. *Salmo salar*.

Length, two to four feet; weight, fifteen to fifty pounds. Dark bluish or black on the back; sides, silvery; belly, white. (The young have black crossbars.)

Formerly entered all rivers of New England, but is now caught only from Maine northwards.

It is an esteemed foodfish, and its capture is considered the highest type of sport.

The Salmon takes live bait and artificial fly.

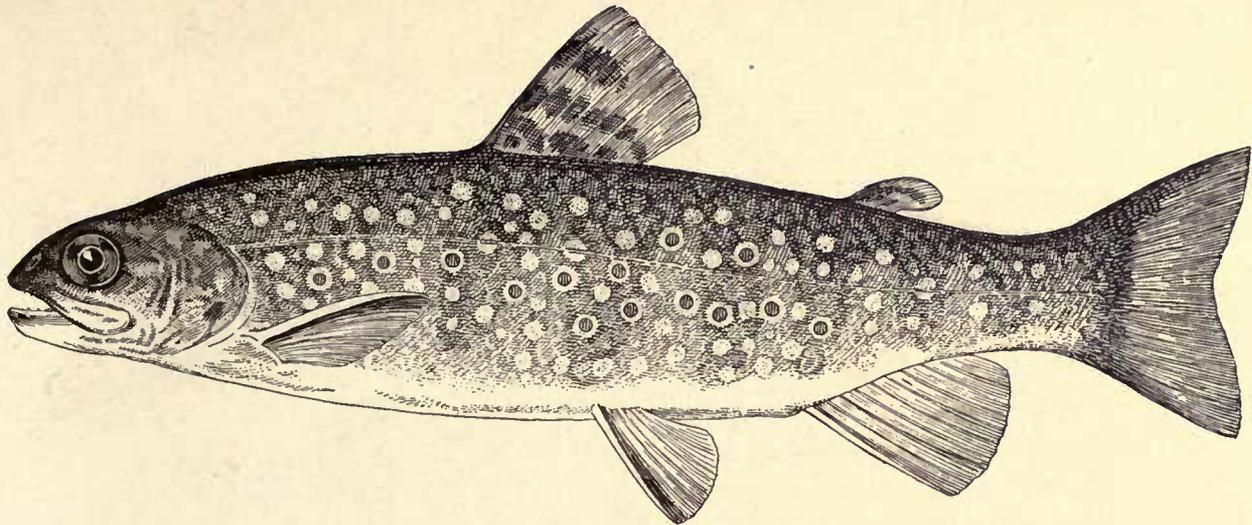


**2. The Great Lake Trout.** LAKE TROUT, TOGUE, SISCOWET, TULADI, MACKINAW TROUT, NAMAYCUSH, SALMON TROUT, LAKE SALMON, WINNIPISSOGEE TROUT, LUNGE. *Salvelinus namaycush.*

Length, up to three feet ; weight, two to twenty pounds. Dark gray ; sides, mottled ; belly, white.

The Great Lake Trout lives in the northern and western lakes. It is a great favorite as a foodfish, but its capture is not highly considered as sport.

The Great Lake Trout is caught by spoonhook or bottom fishing with live bait.



**3. The Brook or Speckled Trout.** *Salvelinus fontinalis.*

Length, five to twenty inches; weight, up to eleven pounds. Back, black, marbled with golden gray; side, golden mottled, barred with grayish brown and covered with round golden yellow and red spots; belly, white with rosy tints. Lower fins red, with first ray white. The color of the brook trout varies considerably according to locality.

The Brook Trout is found in almost all cool and rapid-flowing spring brooks, from the highest mountain to the low shore, where it enters the sea. The sea-going trout is silvery gray in color.

The Trout is the choicest of foodfishes, and trout fishing is considered the finest sport.

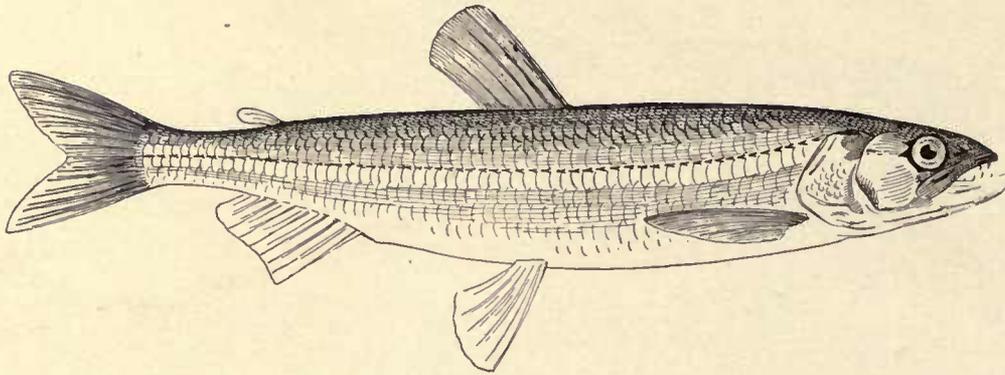
The Trout is caught with worms, grasshoppers, live bait, and artificial flies.

**4. The Sunapee Lake Trout.** *Salvelinus aureolus.*

Length, twelve inches. Color, brown; sides, silvery gray with small orange spots. Similar in shape to *S. fontinalis*.

**5. The Blueback or Rangeley Lake Trout.** *Salvelinus oquassa.*

Length, twelve inches. Color, dark blue with red spots. Body narrower and longer than *S. fontinalis*.



**6. The Smelt.** *Osmerus mordax.*

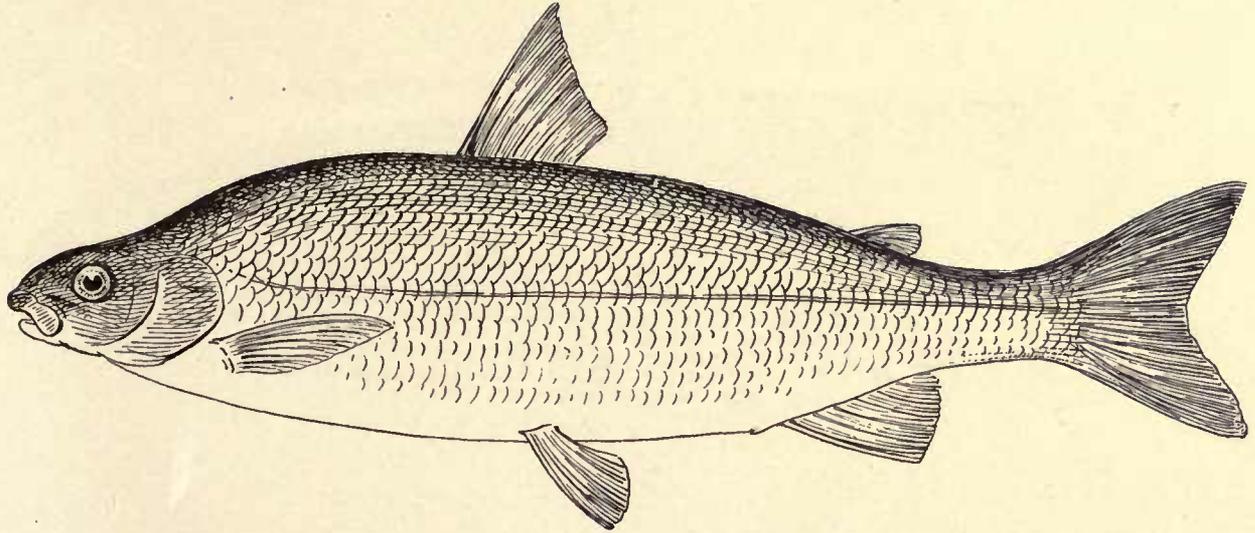
Length, six to twelve inches. Back, dark greenish black; sides, bright silvery; eye, large and of orange color; fins, transparent; teeth, strong.

The Smelt is found at the mouth of rivers. It is a favorite foodfish, and bites at shrimps.

**7. The Capelin.** *Mallotus villosus.*

Length, twelve inches. The Capelin is like the smelt, but has very small scales. The second back fin is longer than that of the smelt, while the teeth are small.

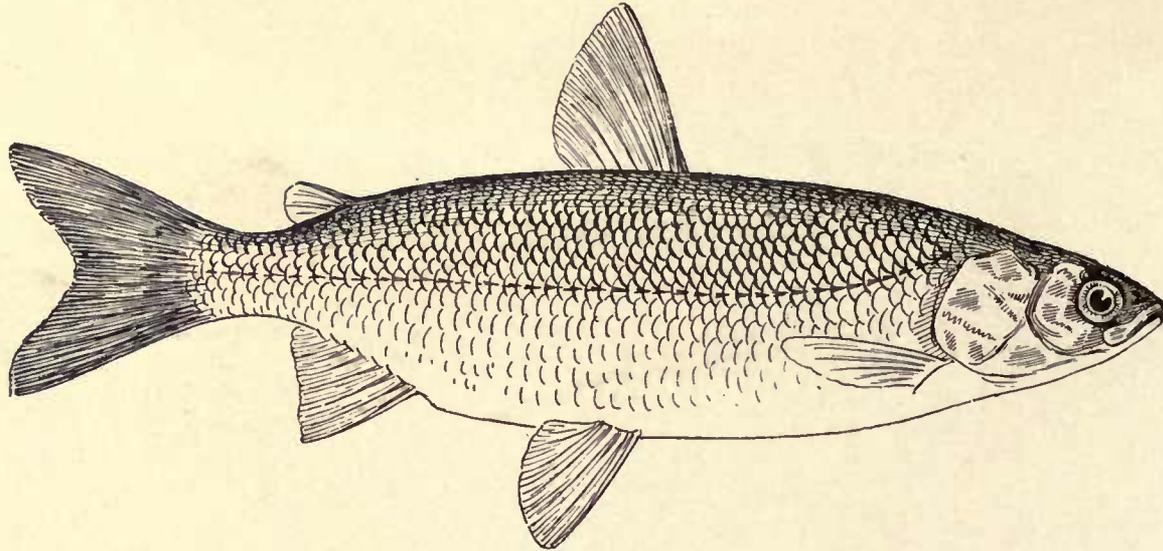
The Capelin is found from Maine northwards.



8. **The Menomonee Whitefish.** ROUND FISH, SHAD-WAITER. *Coregonus quadrilateralis.*

Length, twenty inches. Color, dark bluish, with the sides paler in shade.

The Menomonee Whitefish lives in deep lakes, mostly at the bottom, and is found in New Hampshire, north and west. An excellent foodfish.



**9. The Whiting.** SAULT OR MUSQUA RIVER WHITEFISH. *Coregonus labradorius.*

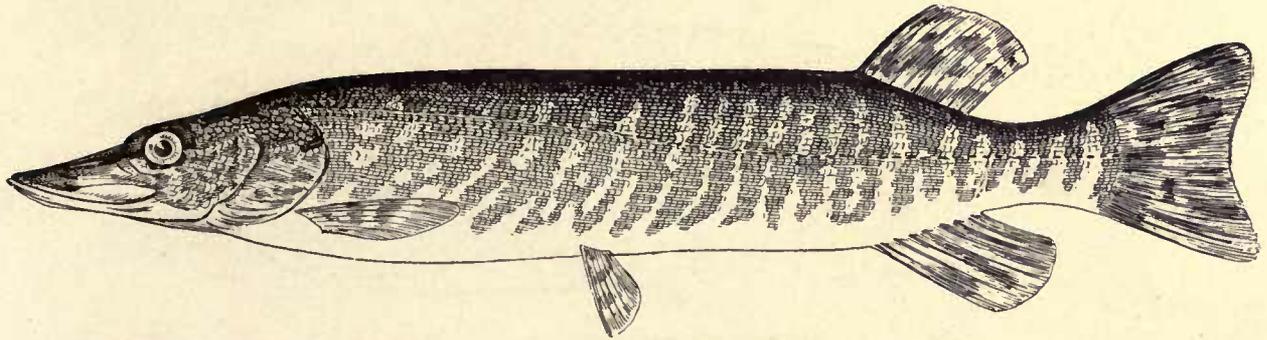
Length, twenty inches. Color, bluish, the sides silvery.

The Whiting lives north and west from the White Mountains, and like the Menomonee is an excellent foodfish

**10. The Common Whitefish.** *Coregonus clupeiformis.*

Length, thirty inches. Color, bluish black on back ; the sides silvery.

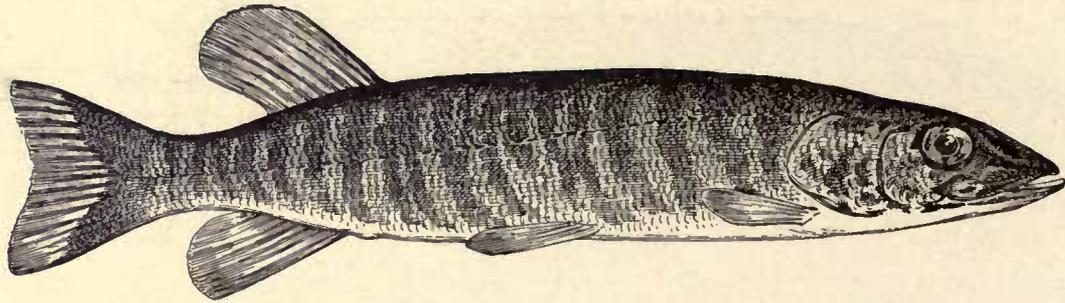
The Common Whitefish lives in the great western lakes.



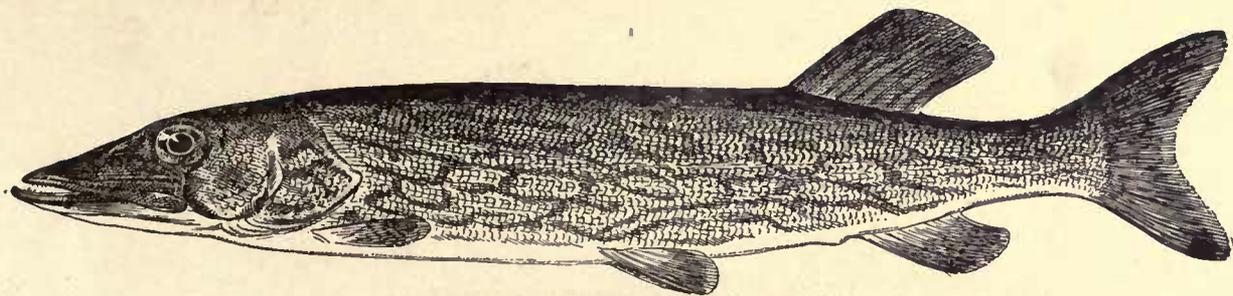
**11. The Northern Pike.** *Esox lucius.*

Length, thirty to fifty inches. Color, back, dark gray; sides, light lead gray in confluent bands forming light spots; belly, white; blotchy black spots on fins and tail. Snout, long.

The Northern Pike is generally caught with spoonhooks or live bait. An excellent foodfish.



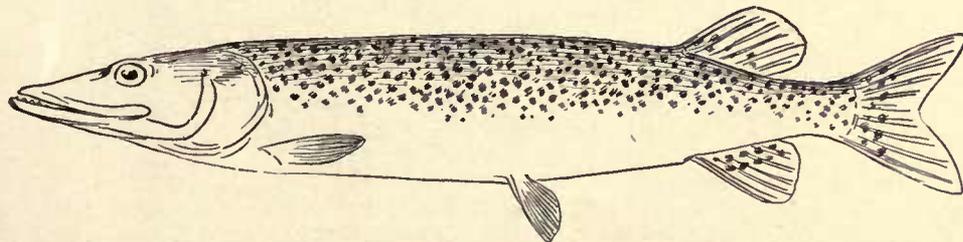
**12. The Brook Pike.** BANDED OR LONG ISLAND TROUT, PICKEREL, POND PIKE. *Esox americanus*.  
Length, twelve inches. Color, back, black; sides, goldish, crossed by dusky blackish bars; fins, red tipped and not spotted like the Northern Pike. Snout, short.  
Lives in brooks, ditches, and shallow muddy ponds. A good foodfish. Caught with worms.



**13. The Pickerel.** CHAIN PICKEREL, JACK, FEDERAL PIKE. *Esox reticulatus.*

Length, thirty inches. Color, back, black or green; sides, rich gold or silvery with net or chain-like marks; belly, white.

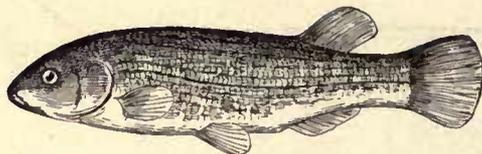
The Pickerel lives in all waters. An excellent foodfish, and is caught with frogs' legs, live and dead bait, and the spoonhook. Pickerel fishing is the favorite sport of many fishermen.



**14. The Muskalunge.** MUSCALONGE, MUSKELLUNGE, MASKINONGE. *Esox masquinongy.*

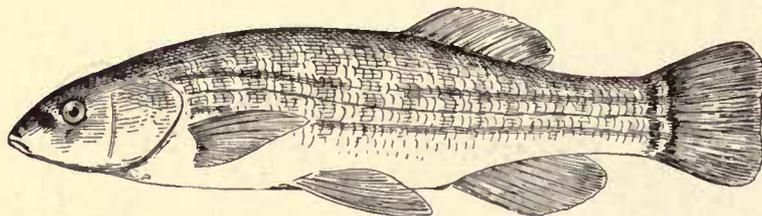
Length, eight feet. Color, gray with black spots. Snout, long.

Lives in the Great Lakes and St. Lawrence River.



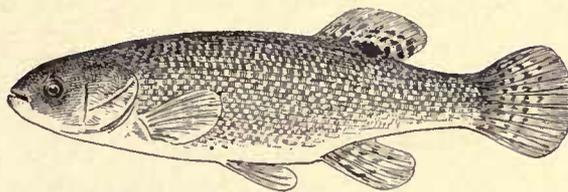
**15. The Mud Minnow.** *Umbra limi.*

Length, four inches. Color, back, dark olive green, with lighter lengthwise stripes on sides.  
Lives in mudholes.



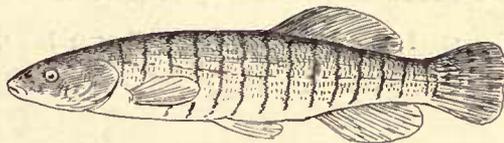
**16. The Killifish.** *Fundulus majalis.*

Length, six inches. Color, back, olive brown ; sides, brassy with dark crossbars.  
The Killifish lives along the shore in shallow water.



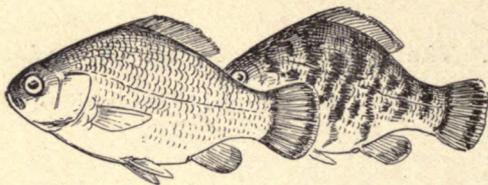
**17. The Mumichog.** *Fundulus heteroclitus.*

Length, two to five inches. Color, dark olive green with yellowish spots, and a little silvery on sides. Lives in shallow water along the shore.



**18. The Fresh Water Killifish.** *Fundulus diaphanus.*

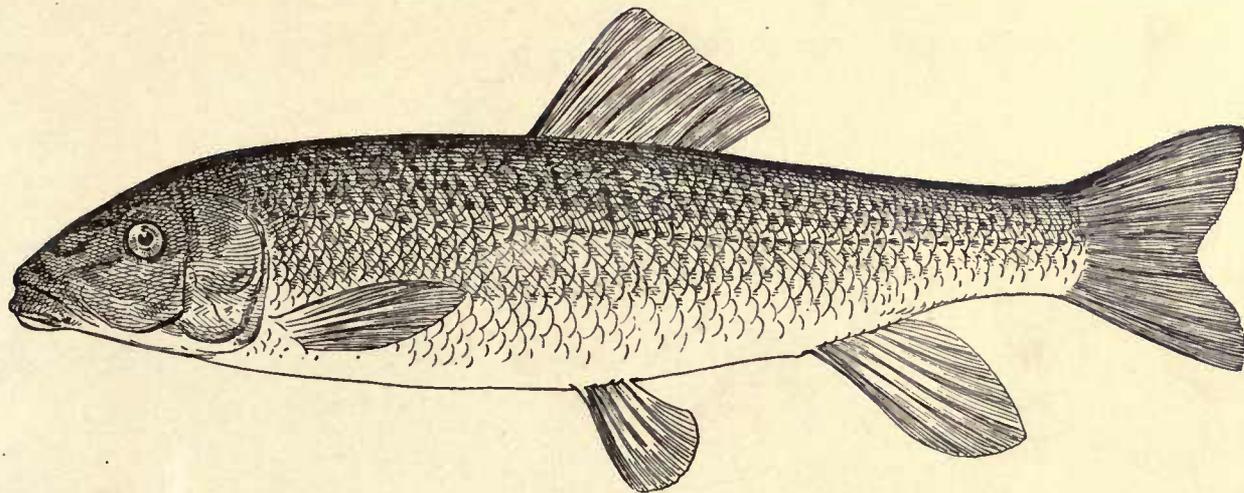
Length, four inches. Color, olive brown; sides, silvery with narrow crossbars. Lives in clear streams and ponds.



**19. The Broad Killifish.** *Cyprinodon variegatus.*

Length, two to four inches. Color, steel blue or green ; sides, silvery ; belly, coppery ; the female is marked with black crossbars.

Lives along the South Shore.

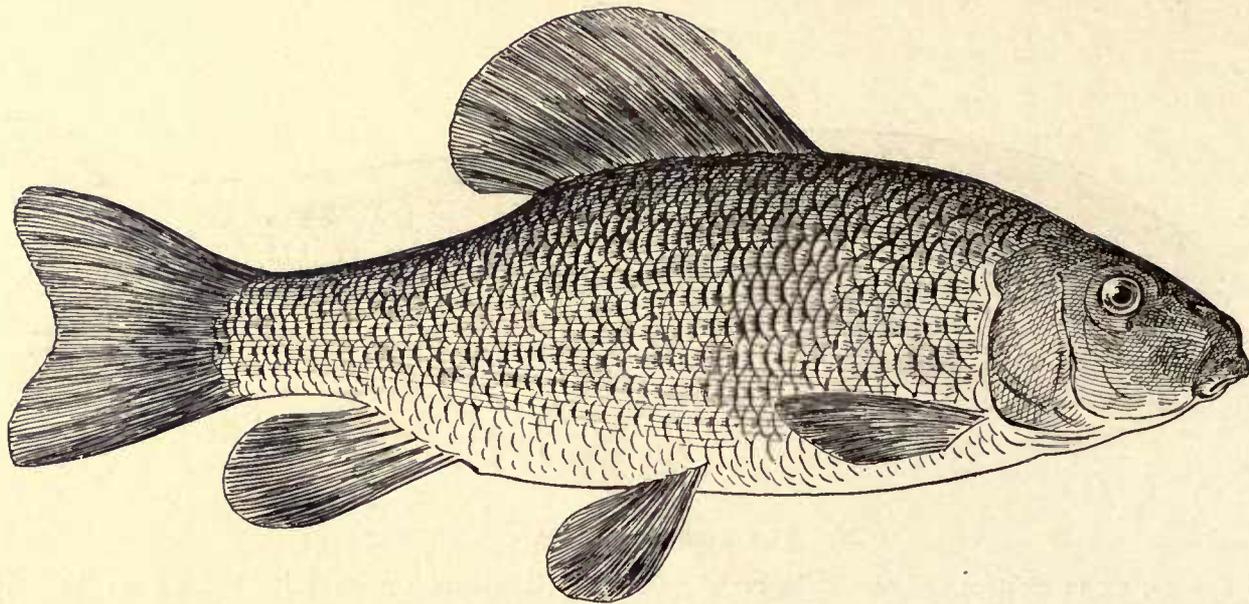


**20. The Common Sucker. *Catostomus teres.***

Length, six to eighteen inches. Body, round. Color, back, brownish gray; sides, bluish gray; belly, pink. The Common Sucker has a toothless, sucking mouth, its food being chiefly vegetable.

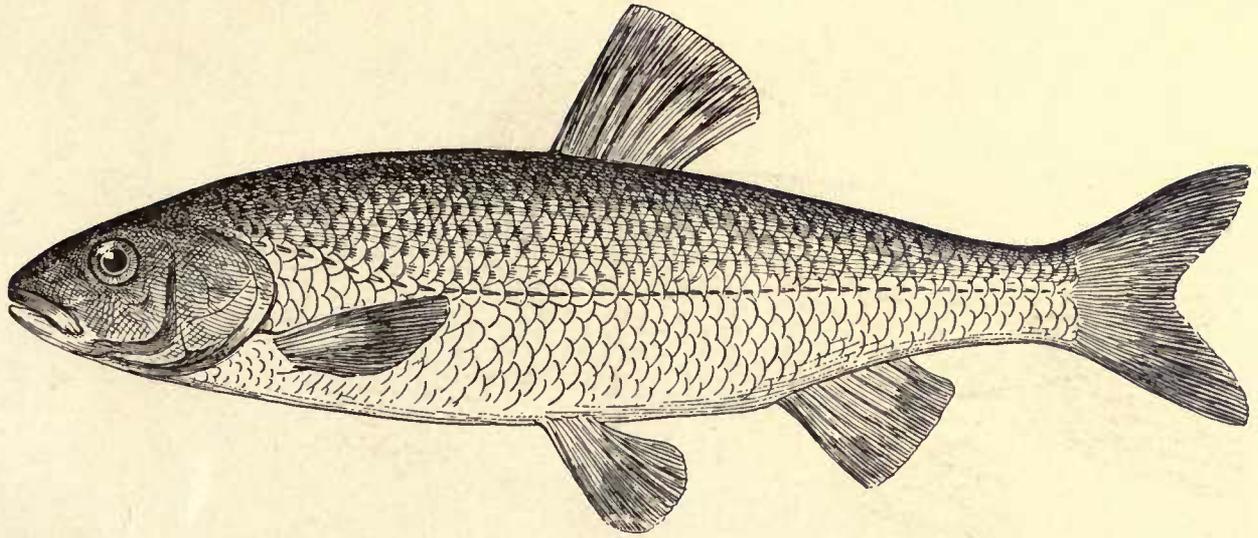
In springtime the Sucker ascends the brooks to spawn, but lives generally in schools at the bottom of rivers and ponds. It rarely takes the hook.

When taken from a fresh brook the meat is good if soon cooked. It quickly becomes soft and often of a muddy taste.



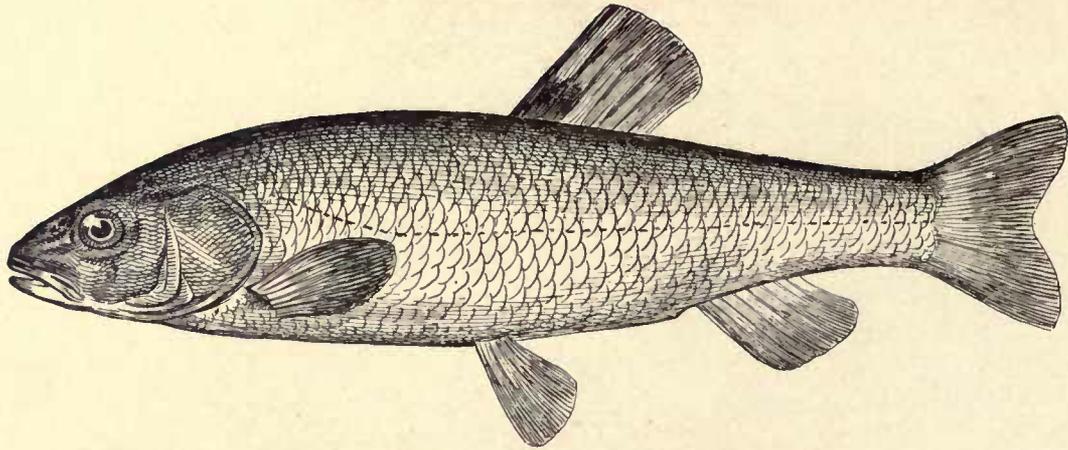
**21. The Chub Sucker.** *Erimyson sucetta.*

Length, ten inches. Body, compressed. Color, back, bluish gray; sides, reddish and brassy; no middle line on sides; otherwise like *Catostomus teres*.



**22. The Chub.** ROACH. *Semotilus bullaris.*

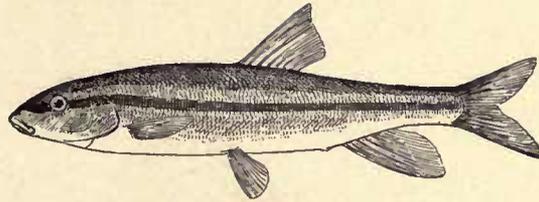
Length, eighteen inches. Color, back, bluish brown ; sides, bright silver ; fins, plain.  
The flesh of the Chub is white, soft, and bony.  
Lives in all rivers and bites at worms.



**23. The Dace.** COUSIN TROUT. REDFIN. *Semotilus atromaculatus.*

Length, twelve inches. Color, back, dusky brown; sides, a little silvery; a squarish black spot at beginning of back fin.

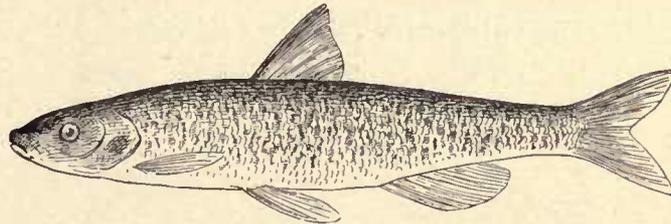
The Dace lives in clear, cool brooks, and takes worms like a trout.



**24. The Black-Nosed Minnow.** *Rhinichthys atronasus.*

Length, three inches. Color, back, greenish black ; sides and belly, light with a black band lengthwise ; fins, red or orange.

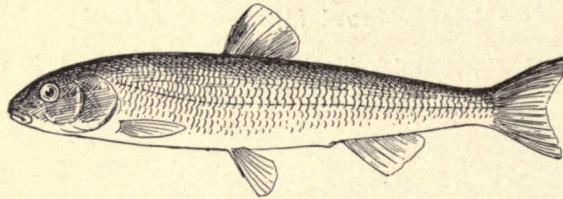
Lives in clear streams.



**25. The Long-Nosed Minnow.** *Rhinichthys cataracte.*

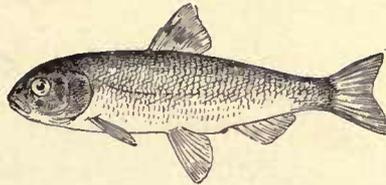
Length, six inches. Color, dark olive, mottled, with no band on sides.

Lives in clear streams.



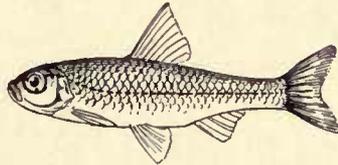
**26. The Fat-Headed Minnow.** *Pimephales notatus.*

Length, four inches. Color, back, olive ; sides, bluish, and somewhat silvery.  
Lives in sluggish rivers.



**27. The Black-Headed Minnow.** *Pimephales promelas.*

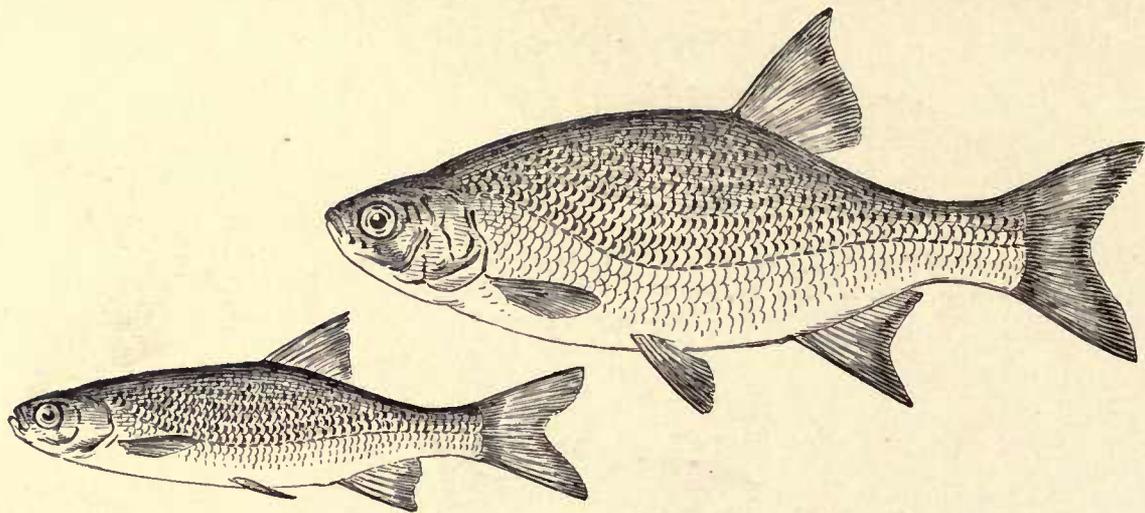
Length, two and one-half inches. Color, back, olive ; head, black.  
Lives in sluggish brooks, from Lake Champlain west.



**28. The Bridled Minnow.** *Notropis bifrenatus.*

Length, two inches. Color, buff, with black lengthwise stripe on side ; snout, orange.

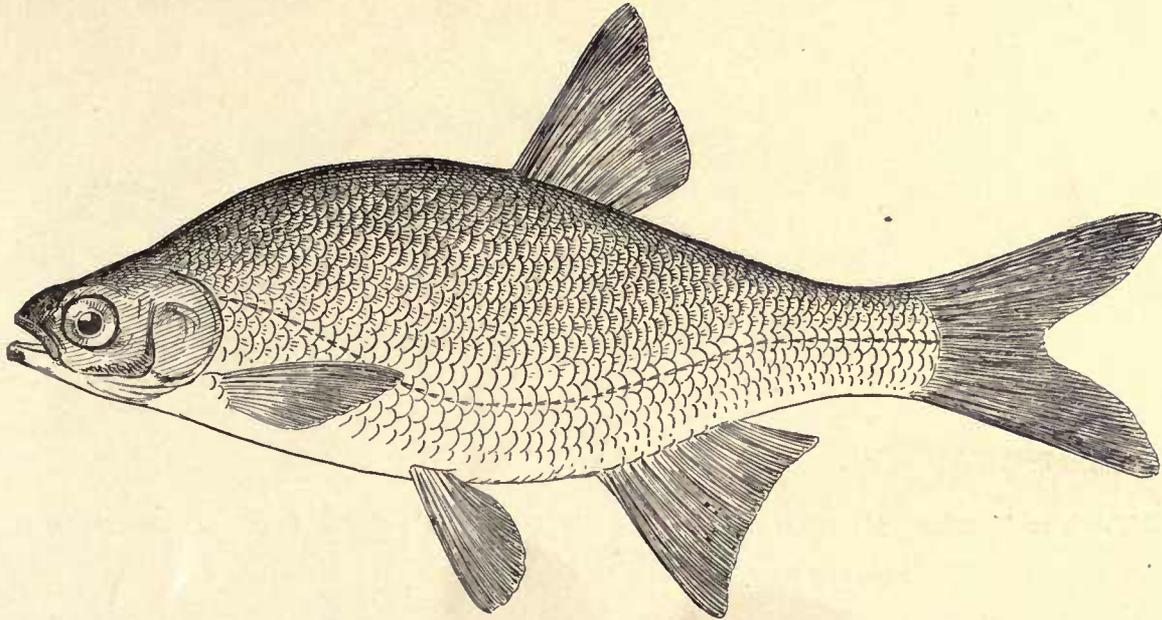
The introduced ASIATIC CARP, *Cyprinus carpio*, and CHINESE GOLD FISH, *Carassnis auratus*, belong to this group.



**29. The Common Shiner.** REDFIN. DACE. *Notropis cornutus.*

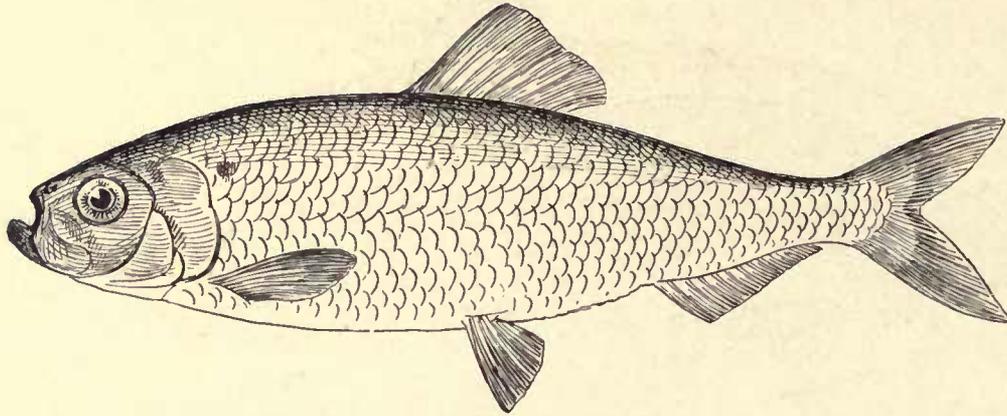
Length, eight inches. Color, back, black or steel blue ; sides, bright silver ; cheeks, goldish ; belly, white, and rounded on lower edge ; scales on back, blackish at root ; fins, reddish.

Lives everywhere in fresh water, and is caught with worms or flies.



30. **The Golden Shiner.** BREAM. *Notemigonus chrysoleucus.*

Length, twelve inches. Color, back, blackish; sides, bright golden; fins, yellowish. Lower edge of belly sharp. The body is deeper and the back more round than that of the *Notropis cornutus*. Lives in slow, weedy streams, and bites at worms.



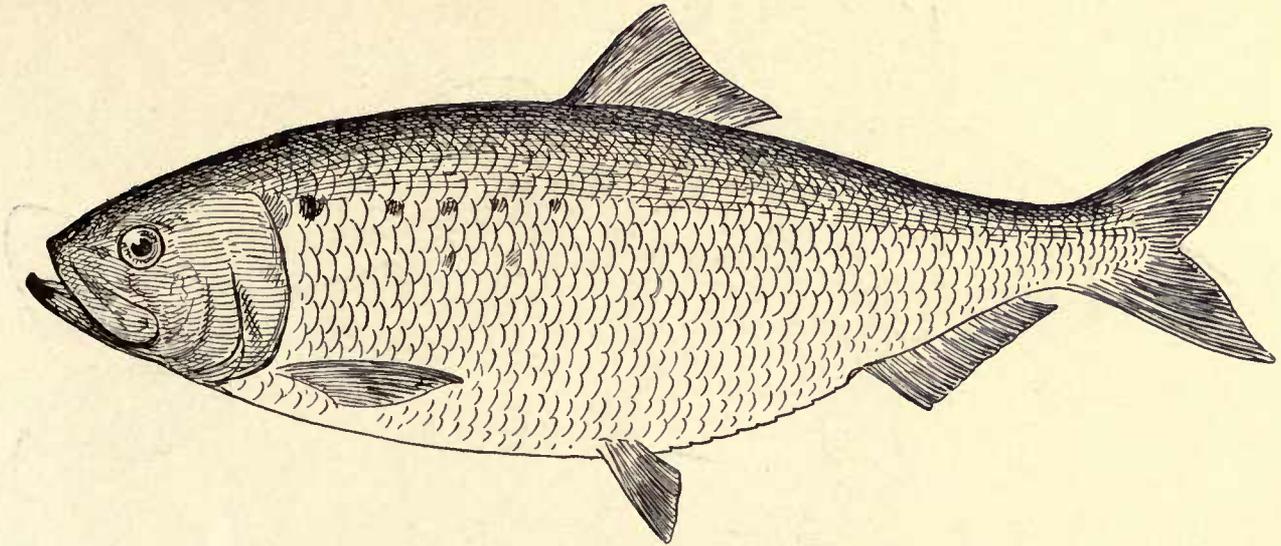
**31. The Alewife.** GASPÉREAU, BRANCH, OR WALL-EYED HERRING. *Clupea pseudoharengus*.

Length, fifteen inches. Color, bluish with silvery sides.

Ascends the rivers to spawn.

**32. The Blueback.** GLUT HERRING. *Clupea aestivalis*.

Like *Clupea pseudoharengus*, except that the back is darker in color, and the body longer.



**33. The Shad.** *Clupea sapidissima.*

Length, thirty inches. Color, back, blue; sides, silvery.

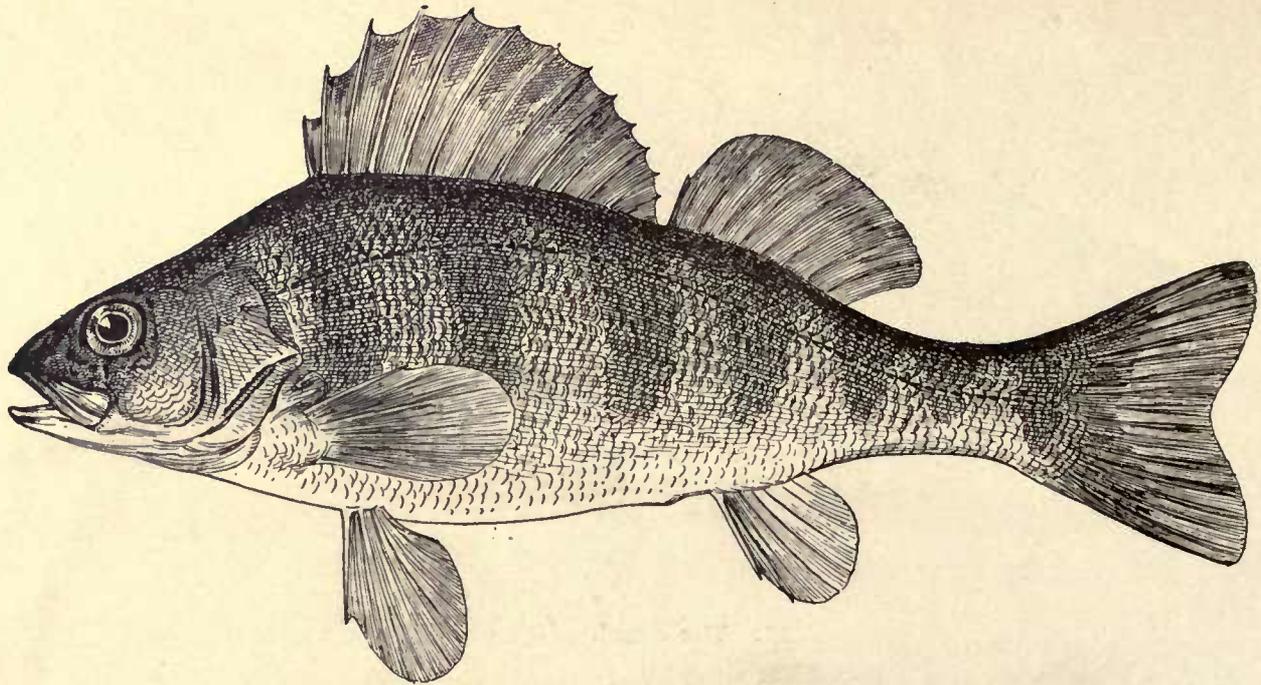
The body of the Shad is deeper and the mouth larger than that of the Alewife.

All of the *Clupea* species are excellent foodfishes.

**34. The Hickory or Mud Shad.** *Dorosoma cepedianum.*

Length, fifteen inches. Color, back, bluish; sides, silvery.

With the exception of a long appendix from the last ray of the back fin, the Hickory or Mud Shad is similar to the Shad.

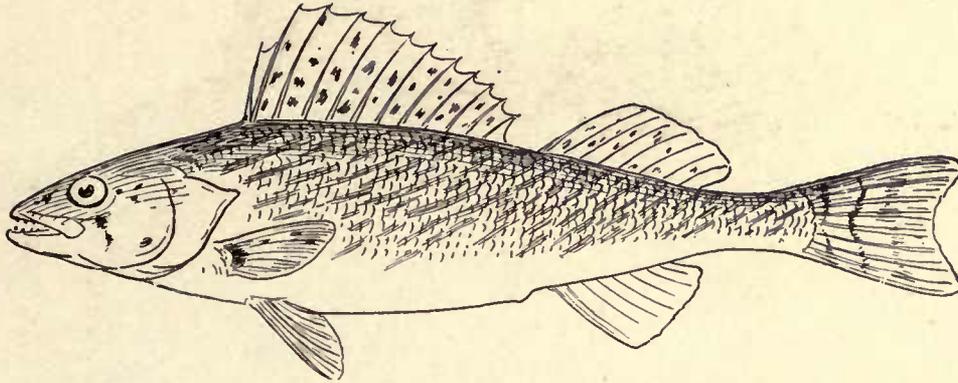


**35. The Yellow Perch.** *Perca (flavescens) (americana) fluviatilis.*

The Yellow Perch grows to twelve inches in length and to one pound in weight, although some weighing as high as four pounds have been caught. Color, back, black; sides, greenish yellow with black stripes; belly, white; belly fins and lower hind fins, red; breast fins and tail, black and reddish; back fin, black. When the Yellow Perch is found in clear water or sandy bottoms, the colors are much paler.

The Yellow Perch is found in all lakes, ponds, and slow-flowing streams, and when taken from springy water is an excellent foodfish, but often has a muddy taste when found in swampy ponds.

Bites readily, even on hot days, taking worms, grasshoppers, and live bait, and sometimes rising to the artificial fly.



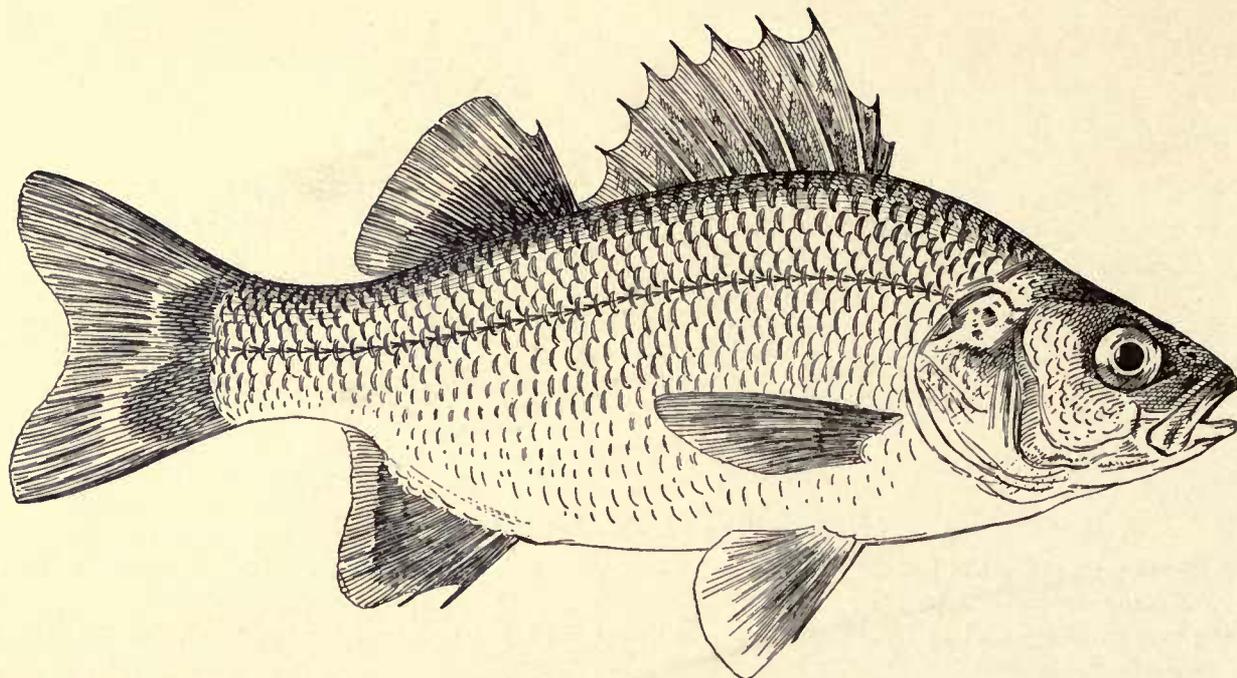
**36. The Pike Perch.** *Stizostedion canadense.*

Grows to twelve inches in length. Color, grayish sand color with blackish dots and dotted stripes, and some irregular, spattered dots on fins.

The Pike Perch is found in Lake Champlain and waters north and west, and is caught with live bait and by bottom fishing.

**37. The Wall-Eye.** *Stizostedion vitreum.*

Length, from one to three feet. Similar to *Stizostedion canadense* except for five or six regular rows of dots on fins. Lives in the waters farther west. Both the Pike Perch and the Wall-Eye are highly esteemed as foodfishes.

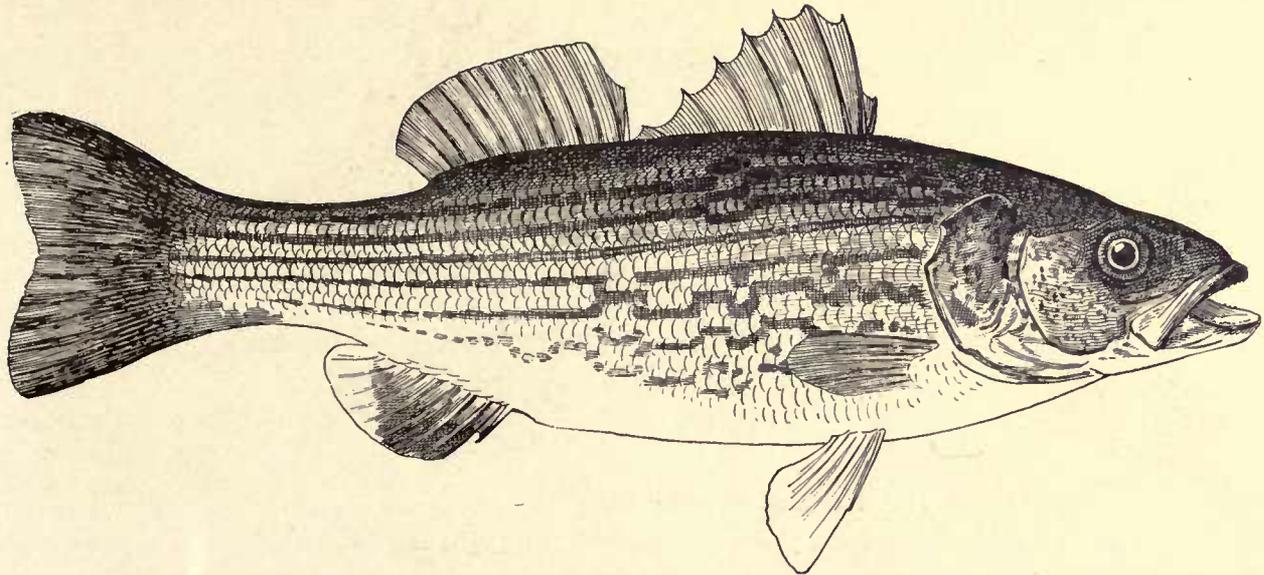


**38. The White Perch.** *Morone americana.*

Rarely exceeds twelve inches in length and one and one-half pounds in weight. Our handsomest fish. Color, back, brown or black; sides, white silvery with bluish and pinkish reflections; belly, white; fins, blackish, light reddish on outer edge.

The White Perch lives mostly in brackish water, from which it retires in winter to the sea. In summer it ascends fresh-water rivers, and thrives in many fresh-water ponds, from which it cannot return.

Bites readily at worms and live bait, and is extremely gamy, much more so than the Yellow Perch.

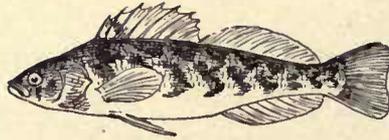


**39. The Striped Bass.** ROCKFISH. *Roccus lineatus*.

Length, three to five feet. Color, back, black; sides, silvery with black lengthwise stripes. Enters the mouth of rivers to spawn. A favorite foodfish, and celebrated among fishermen for its gamy qualities. For Striped Bass fishing, shrimps, clams, fishbait, pork, and artificial flies are used.

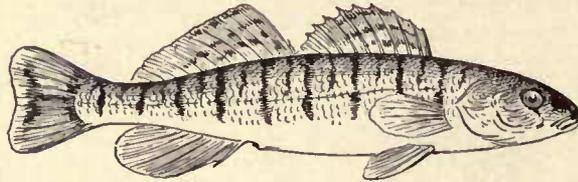
**40. The White Bass.** *Roccus chrysops*.

Length, fifteen inches. Color, like *Roccus lineatus*; the black stripes on sides being somewhat narrower, however, and, while quite similar in shape also, is broader, like *Morone americana*. Lives from Lake Champlain westward, in quiet water. The White Bass is a good foodfish, and is caught with minnows in deep water.



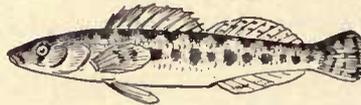
**41. The Olmsted Darter.** *Etheostoma olmstedi.*

Length, three and one-half inches. Color, olive brown with blotches and zigzag marks on sides; fins, speckled. Lives in small brooks.



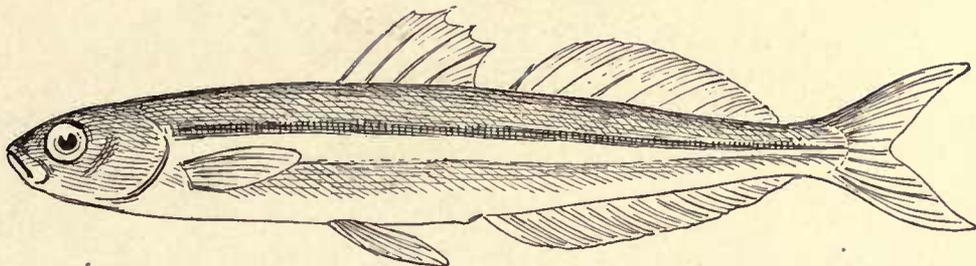
**42. The Log Perch.** HOGFISH. *Etheostoma caprodes.*

Length, six to eight inches. Color, yellowish green with many light and dark crossbars; fins, barred.



**43. The Spindle-Shaped Darter.** *Etheostoma fusiforme.*

Length, two inches. Color, olive, mottled with brown; sides, dusky crossbars and red spots. Lives in slow-running brooks and mudholes.



**44. The Silversides. *Menidia notata.***

Length, five inches. Color, transparent green, a broad, silvery, lengthwise stripe, and each scale marked on the edge by a dark spot.

Lives along the seacoast.

**45. The Small-Mouthed Black Bass. *Micropterus dolomieu.***

*(See cut on next page.)*

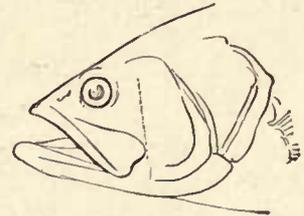
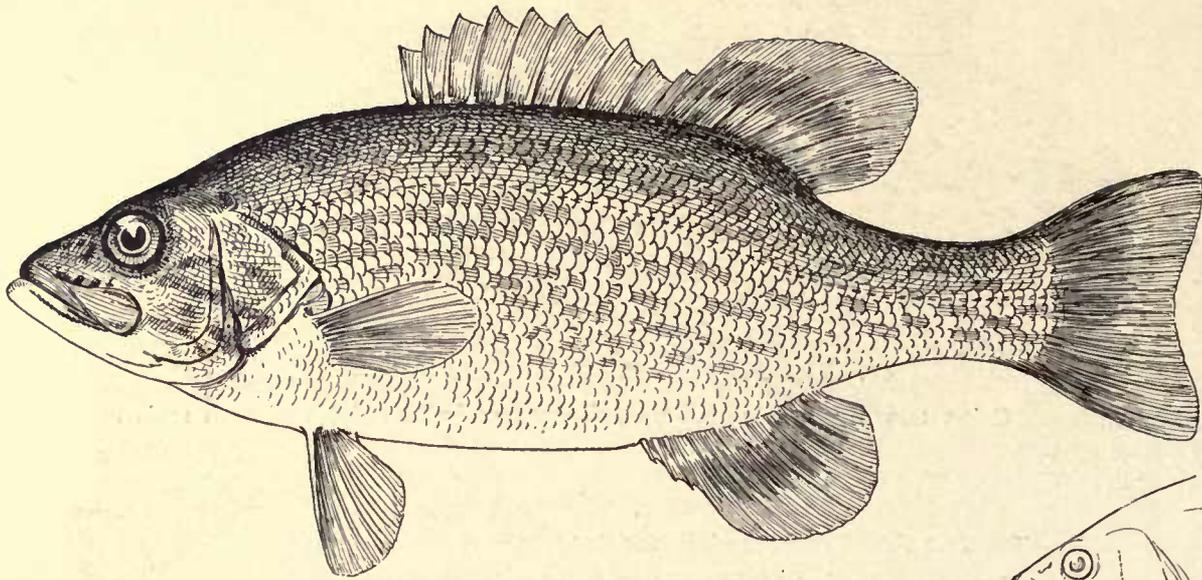
Length, one to two feet. Weight, two to seven pounds. Color, olive green with black dots and brownish markings.

**46. The Large-Mouthed Black Bass. GREEN BASS. OSWEGO BASS. BAYOU BASS. *Micropterus salmoides.***

*(See cut of head on next page.)*

Length, one to two and one-half feet. Weight, two to eight pounds. Color, dark green, silvery below.

Differs from *Micropterus dolomieu* chiefly on account of its large mouth.



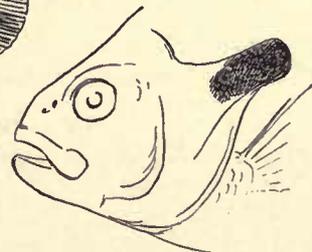
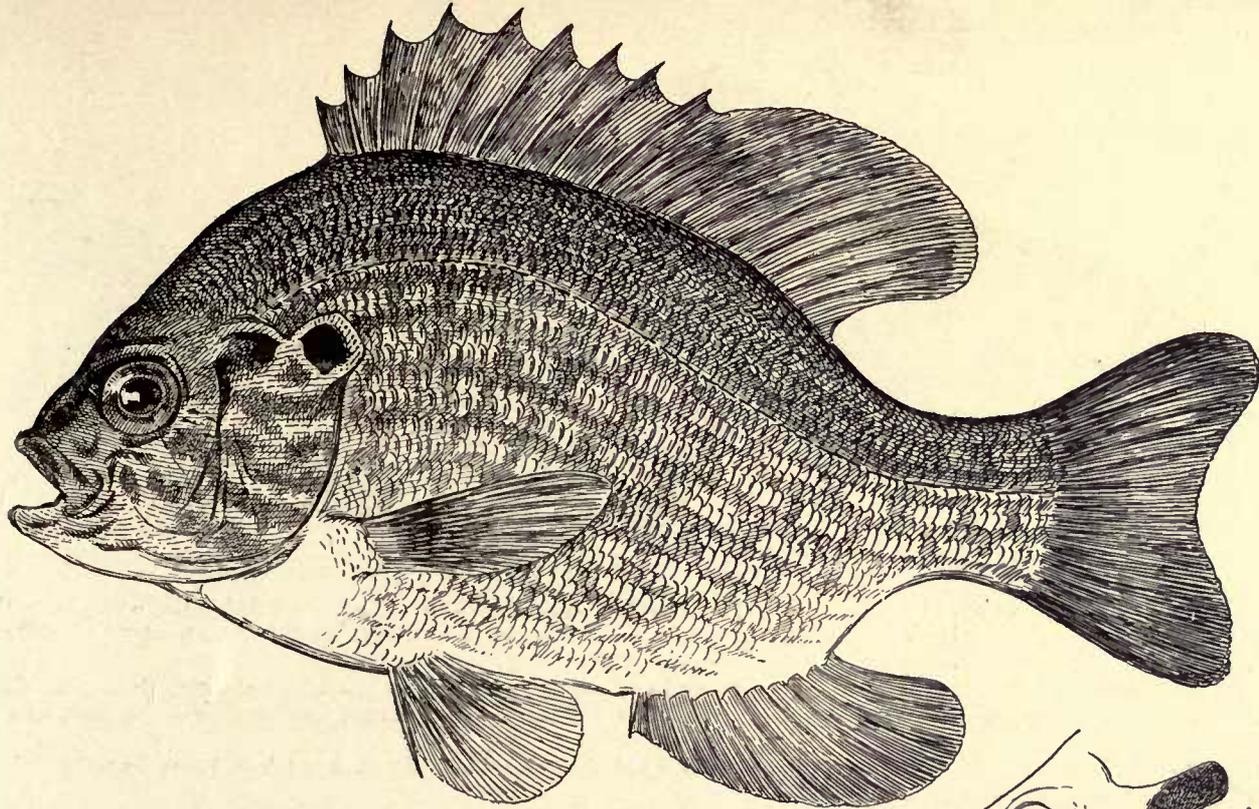
The Black Bass are southern fishes transplanted into New England waters on account of their gamy qualities, but opinions differ in regard to their value as foodfishes.

Both bite voraciously at worms, live bait, hellgramites and spoonhooks, and show gallant fight when hooked.

**47. The Sunfish.** BREAM. PUMPKIN SEED. *Lepomis gibbosus*. (See cut opposite.)

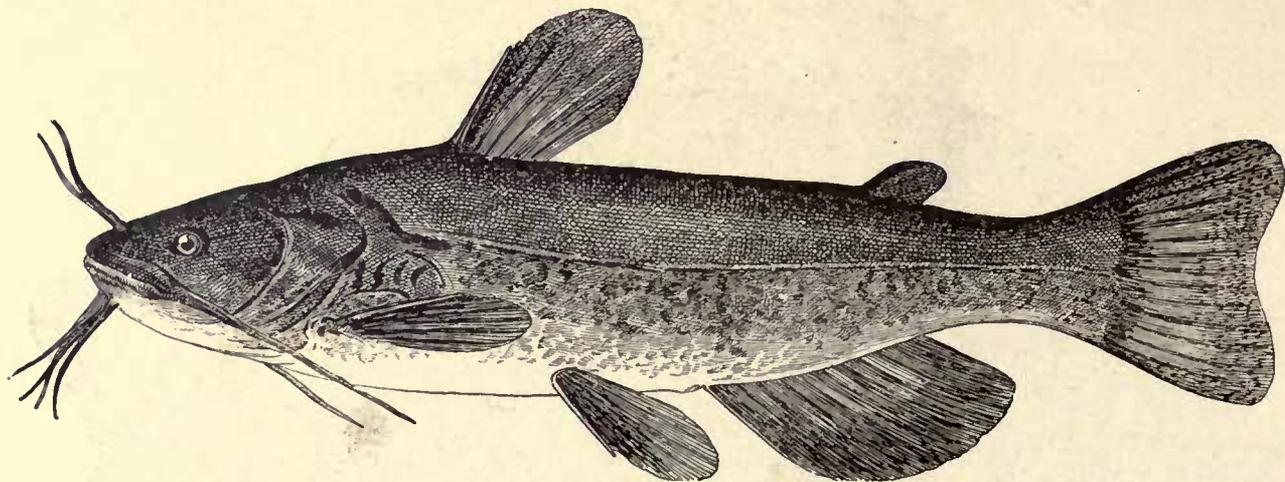
Length, eight inches. Color, back, olive green; sides, bluish; belly, yellow.

Common in quiet, shallow waters, where it occupies certain spots as a regular dwelling-place. Being very bony, it is of little account as a foodfish. The Sunfish bites readily at worms.



48. The Long-Eared Sunfish. *Lepomis auritus*.

Length, eight inches. Resembles *L. gibbosus*, but narrower and reddish below. Easily identified by the long ear flaps.



**49. The Hornpout.** CATFISH. BULLHEAD. MINISTER. *Amiurus nebulosus.*

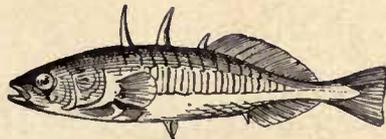
Grows to eighteen inches in length. Color, yellowish, greenish brown or black; mottled sides, white beneath. Armed with a sharp spine in back and breast fins, which often produces a painful wound when brought in contact with the hand of the fisherman.

Abounds everywhere in muddy ponds or quiet nooks of rivers, shunning the sunlight and biting during the day-time only in dark, shady places, feeding at night. The Hornpout takes worms, live and dead fish bait, or any meat.

The value of the Hornpout as a foodfish depends upon the water from which it is taken, being excellent when found in clear water, but is often muddy in taste.

**50. The White, Silver, or Channel-Cat.** *Ictalurus punctatus.*

Grows to three feet in length. Color, olive gray with brown spots and silvery sides, otherwise like the Hornpout. Lives in rivers.



**51. The Common Stickleback.** *Gasterosteus aculeatus.*

Length, four inches. Color, back, olive, dotted; sides, silvery. Three spines on back, two of them being before the fin; also one spine in hind belly fin.

Lives along the shore at the mouth of brooks and rivers.

**52. The Black Stickleback.** *Gasterosteus wheatlandi.*

Three spines connected with the back fin.

**53. The Slender Stickleback.** *Gasterosteus atkinsii.*

Length, one and one-half inches. Three spines connected with the back fin.

Lives on the Maine coast.

**54. The Four-Spined Stickleback.** *Apeltes quadracus.*

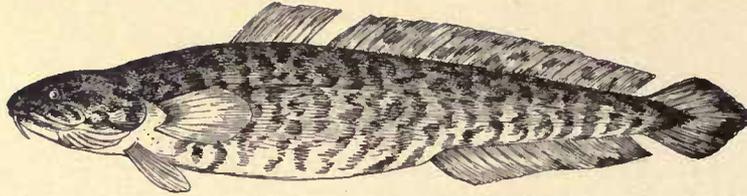
Length, two inches. Color, dark olive, mottled; belly fins, red. Four spines in back fin and one in hind belly fin.

**55. The Brook Stickleback.** *Eucalia inconstans.*

Length, two and one-half inches. Color, black with red tints. Five spines on back and one in lower hind fin.

**56. The Nine-Spined Stickleback.** *Pygosteus pungitius.*

Length, two and one-half inches. Color, olive, spotted and striped with black. Ten spines on back and one in lower hind fin.

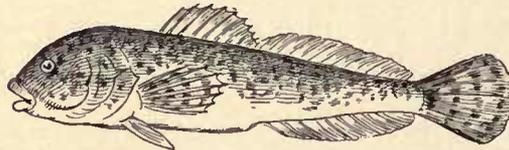


**57. The Burbot.** LAWVER, LING, CUSK. *Lota lota (maculosa)*.

Length, thirty inches. Color, dark olive, thickly marbled and streaked with black.

Lives in swampy lakes.

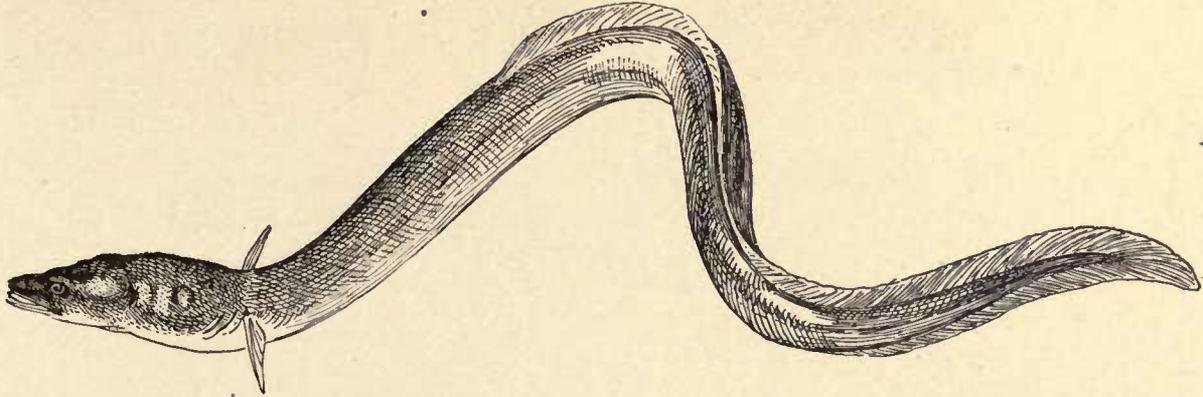
The Burbot is in very little favor in this country as a foodfish, but is highly esteemed as such in Europe.



**58. The Millerstumb.** FRESH-WATER SCULPIN. *Cottus g. acilis*.

Length, four inches. Color, olive, mottled ; edge of back fin, red.

Lives in mountain brooks.



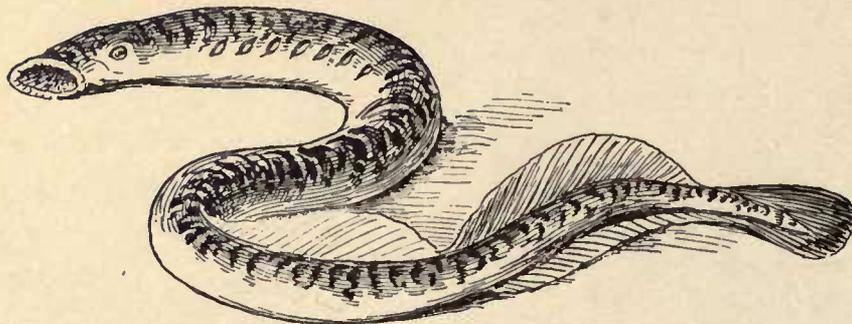
**59. The Eel.** *Anquilla anquilla.*

Grows to three feet in length. Color, greenish brown ; belly, lighter yellowish.

The Eel ascends the rivers and brooks in the spring, returning in the fall to the seashore, where it winters, sometimes in great numbers cuddled together in the deep holes of the river beds.

During the day the Eel hides in the mud, but at night is found in all waters, a voracious and destructive animal feeder. Bites readily at worms, dead or live fish, or meat.

As a food the flesh of the Eel is considered very fine, although rich.



60. **The Lamprey or Lamper.** EEL. *Petromyzon marinus.*

Grows to three feet in length. Color, dark brown, mottled or spotted on greenish white ground.

The Lamprey has a sucking mouth and seven holes on each side of the neck instead of gills, otherwise it is like the Eel.

Retires to the sea to hibernate.

61. **The Lampern.** *Petromyzon fluviatilis.*

Length, ten inches. Color, back, bluish or brown, lighter beneath. Shaped like a diminutive Lamprey.

Both the Lamprey and the Lampern are highly esteemed in Europe as foodfishes.



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