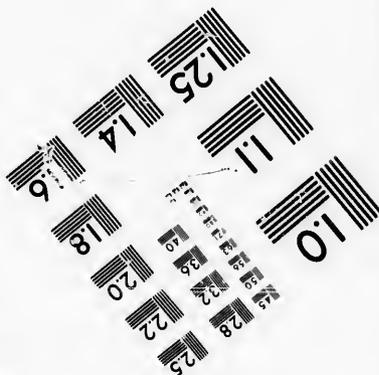
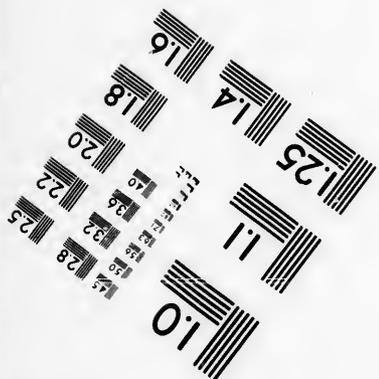
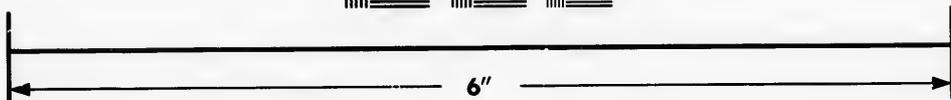
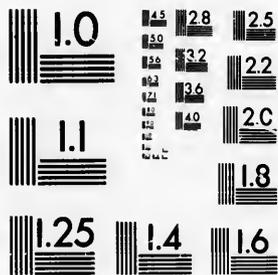


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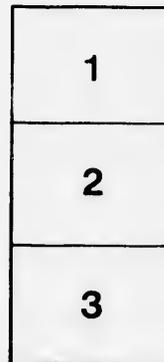
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(From the Canadian Naturalist, for April, 1865.)

NOTES ON CERTAIN SPECIES OF NOVA-SCOTIAN
FISHES.

BY J. MATTHEW JONES, F.L.S.

THE YELLOW PERCH.—*Perca flavescens*.

- Perca flavescens*.....Cuv. et Val., ii, p. 46.
 " "Rich., Faun. Bor. Amer., p. 1, pl. 74.
 " "Storer, Fishes of Mass., p. 5.
 " "DeKay, N. Y. Faun., p. 3, pl. 1, fig. 1.
 " "Helb., Ich. S. C., p. 2, pl. 1, fig. 1.
 " "Gunth., Cat. Fishes, i, p. 59.
Bodianus flavescens.....Mitch., Ph. Trans. N. Y., i, p. 421.

This fish is very common in the fresh waters of this province, and is similar in habit to the common perch of Europe. It is sold in the Halifax market during winter in small bunches of a dozen each at the rate of sixpence sterling per bunch, but it is not much esteemed as food.

Gunther, in his catalogue of the acanthopterygian fishes in the British Museum collection, states his belief, after an examination of the skeletons of this and the European *P. fluviatilis*, that they are merely varieties of one and the same species.

Its geographical distribution is extensive,—being found in nearly every part of North America.

SCULPIN.—*Cottus Grœnlandicus*.

- Cottus Grœnlandicus*Cuv. et Val., iv, p. 156.
 " "Rich. iii, pp. 46, 297, pl. 95, fig. 2.
 " "Storer, Fishes of Mass., p. 16.
 " "De Kay, p. 54, pl. 4, fig. 10.
 " "Gunth., Cat. Fishes, ii, p. 161.
 " *Scorpius*.....Fabr., Faun. Grœnl., p. 156.

This daring and voracious fish is very abundant on our shores. It cares but little for the presence of man, and will not leave its

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position in the shallow water even when roughly touched with a boat-hook. It acts as a perfect scavenger at the fish-curing stations, gorging itself with the refuse thrown into the sea. Although somewhat repulsive in appearance and mode of life, it is remarkable for the beauty of its colors, which, in some specimens, are highly brilliant. The Rev. J. Ambrose informs me that a deep red-colored variety is found at St. Margaret's Bay, and is known to the fishermen under the name of 'deep-water sculpin.' The sculpin is very tenacious of life, existing for some time after removal from its native element.

NORWAY HADDOCK.—*Sebastes Norvegicus*.

<i>Sebastes Norvegicus</i>	Cuv. et Val., iv, p. 327, pl. 87.
" "	Yarrell, Brit. Fishes, i, p. 87.
" "	Rich., Faun. Bor. Amer., p. 52.
" "	Storer, Fishes of Mass., p. 26.
" "	De Kay, p. 60, pl. 4, fig. 2.
" "	Gunth., Cat. Fishes, ii, p. 95.
<i>Perca marina</i>	Pennant, Brit. Zool., iii, p. 226.
<i>Holocentrus Norvegicus</i>	Lacep., iv, p. 390.

This beautiful fish, which vies in brilliancy of color with the gaudy-coated denizens of the tropical seas, is by no means uncommon on our coast during winter and summer. It occurs more frequently, perhaps, during the winter season. As the minute young has been procured from the stomach of a cod caught in the vicinity of Halifax, it is more than probable that it breeds with us. When fishing for cod, it is taken on the banks several miles from shore, and is known in the Halifax market as the 'John-a-Dory,' where it sells at the rate of two pence sterling each, but is never exhibited for sale in any quantity. The Greenland and Arctic seas appear to be the proper habitat of this species. I have procured the opercular spines from the Kjoekkenmoedding on our Atlantic coast.

SPOTTED WRYMOUTH.—*Cryptacanthodes maculatus*.

<i>Cryptacanthodes maculatus</i>	Storer, Fishes of Mass., p. 28.
" "	Gunth., Cat. Fishes, iii, p. 291.

A fine example of this rare fish was taken while swimming with its head out of water near the Commercial Wharf, Halifax, on the 14th of June 1860, and was presented to me by Andrew Downs, Esq. It was perfectly white in color, and had the exact appearance of a cast in plaster of Paris. This white color changed—after it had been some time in spirits—to a light brown about the body,

but the head still retains its original plaster hue. Dr. Storer appears to have been the original discoverer of this curious fish on the Atlantic coast of America.

The following is a brief description of the dimensions, &c. of the specimen in my collection :

Extent, 33 inches. Depth at the deepest part across vent $2\frac{1}{2}$ inches ; at caudal extreme, 9 lines. Diameter of body at base of pectorals, 3 inches. Extent of head, $4\frac{1}{2}$ inches ; breadth at broadest part, the juncture with the neck, $4\frac{1}{2}$ inches ; depth, from summit to extended bony point beneath, $3\frac{1}{2}$ inches ; circumference over expanded gill-covers, $11\frac{1}{2}$ inches. Horizontal gap of mouth, $2\frac{3}{4}$ inches. Lower jaw 4 lines in advance of upper. Teeth conical, two rows in lower jaw curved inwards and extending outwards at chin ; four rows in upper jaw, the third and fourth of which are incomplete. Palatines, armed with small teeth posteriorly. Lips, wide, protruding from either side of divisional ridge to posterior corner. Snout abrupt, indented at extreme. Two triangular fleshy processes occur on either side of the nasal bone. Eyes, $9\frac{1}{2}$ lines distant from each other, diameter $4\frac{1}{2}$ lines. An elevated bony ridge commences immediately above the eyes, and runs back for 4 lines, then rising gradually to the summit of the caput 3 inches from chin-point, and descending again to post extreme of head. A deepened pit-like depression of the form of the eye occurs behind each eye and a smaller pit between them in advance, situate in the groove formed by the bony ridge above the eyes. The bony ridges are distant from each other at widest part, 8 lines. A bony elevated ridge also occurs in front of the eyes. Anus about 3 lines in advance of anal fin. The branchiostegous rays are much inflated, causing the gill-covers to appear as if severed from the head. The dorsal and anal fins are higher at posterior extreme close to the caudal, the former having rays an inch long near its termination, and its commencement partially hid in a groove. The pectorals are 5 lines in extent, having a basal width of $8\frac{1}{2}$ lines ; they are rounded, and the eight primal rays (with the exception of the first) jointed about 2 or 3 lines from their tips. The caudal is 2 inches 8 lines in extent, having a spread of 2 inches.

MACKAREL.—*Scomber vernalis*.

- Scomber vernalis*.....DeKay, p. 101, pl. 12, fig. 34.
 " "Cuv. et. Val., viii, p. 48.
 " "Storer, Fishes of Mass., p. 41.

- Scomber scomber..... Yarrell, Brit. Fishes, ed. 2, i, p. 137.
 " "Owen, Osteol. Cat., i, p. 61.
 " "Gunth., Cat. Fishes, vol. ii, p. 357.

As with the common herring of this coast, I have every reason to believe that this fish is identical with the European species, and must adhere to such opinion until satisfactory evidence is shown to prove the contrary. Gunther in his catalogue even includes *S. grex* under the same head; but as I have not had an opportunity of examining one of this latter species, I am unable to speak as to the similarity which exists between them. The shores, harbors, and inlets of this province, particularly on the eastern and northern coasts, are annually visited by vast multitudes of the common mackarel, some of which are smaller and others larger than the medium-sized individuals. They are classed by merchants and fishermen as of three kinds:—No. 1, the largest and fattest; No. 2, the medium sized; and No. 3, the smallest. The habits of the mackarel are very capricious: some seasons it visits us in such vast abundance that the waters literally swarm with them; while in others, loud complaints are heard of their scarcity. Many are the reasons given to account for this singular habit; but no satisfactory conclusion can be reached until accurate observers on different parts of the coast take cognizance of the abundance or scarcity of their usual food during the time of their visit, and also of the temperature of the water, whether influenced by the warm current of the Gulf stream, or the colder waters of the Arctic current. Much remains for the investigation of the naturalist ere a true solution can be given to the mystery which hangs around the periodical appearance of marine fishes on our shores; and it must ever be a source of regret that some of our better-educated fishermen do not put their knowledge of the habits of fish to advantage by communicating any facts which would tend to throw light upon so interesting a subject.

From the middle of September to the end of October appears to be the season of the best mackarel-fishing on our eastern coast, the larger kind being generally more abundant towards the close of the latter month. About the middle of June the spawn is generally ripe for depositing. Along the coast it is said that mackarel prove poisonous to pigs, but I have no facts to verify such an assertion. This fish is also supposed to be free from disease of any kind. Some years ago a fisherman at Prospect near Halifax was spearing for eels in mid-winter through the ice near shore, in the sandy mud,

and to his surprise caught a mackarel which appeared half torpid, and had its eyes covered with a filmy substance. Was this fish hibernating in the mud, or what could have brought it into such position at a time of year when its fellows were supposed to be away at some distance in the deep?

To show the extent to which the mackarel-fishery is carried on in our Province, I may state that in the year 1860, 49,748 barrels of mackarel were cured by our fishermen. But this is nothing in comparison to the total amount taken off the coast by United States fishermen and others who resort to these grounds in the season in their large and well-appointed craft, with more tackle than our fishermen possess. Specimens of No. 1 mackarel often attain large dimensions: one taken in the harbor of Port Mulgrave in September 1861, weighed two lbs., and measured 17 inches in length.

TUNNY.—*Thynnus vulgaris*.

Thynnus vulgaris.....	Cuv. et Val., viii, p. 58, pl. 210.
“ “	Yarrell, Brit. Fishes, i, p. 150.
“ “	Storer, Fishes of Mass., p. 47.
“ thynnus.....	Gunth., Cat., ii, p. 362.
Scomber thynnus.....	Don., Brit. Fishes, i, pl. 5.
“ “	Risso., Ich. Nice, p. 163.

The tunny is very common on our eastern coast during the summer months, and is known to the fishermen as the ‘albicore.’ The Rev. John Ambrose informs me that it visits St. Margaret’s Bay regularly every summer, several specimens being taken and rendered down for oil. They have been especially abundant this autumn (1864) in that locality.

SWORD-FISH.—*Xiphias gladius*.

Xiphias gladius.....	Risso., Ich. Nice, p. 99.
“ “	Cuv. et. Val., viii, p. 255, pl. 225, 226.
“ “	Storer, Fishes of Mass., p. 51.
“ “	DeKay, p. 111, pl. xxvi, fig. 79.
“ “	Yarrell, Brit. Fishes, i, p. 164.

The sword-fish is by no means common on our coast, and only makes its appearance at intervals in our harbors and bays. One was taken last year in Bedford Basin, at the head of Halifax Harbor.

BUTTERFISH.—*Gunnellus vulgaris*.

- Gunnellus vulgaris*..... Nilss., Skand. Faun., iv, p. 200.
 " *mucronatus*..... DeKay, p. 153, pl. 12, fig. 36.
 " " Cuv. et Val., xi, p. 427.
Blennius gunnellus..... Rich., Faun. Bor. Amer., p. 91.
 " " Lacep., ii, p. 503.
Centronotus gunnellus..... Gunth., Cat. Fishes, iii, p. 285.
 " " Bloch., Schn., p. 167.
Murcænoïdes guttata..... Storer, Fishes of Mass., p. 65.

In the transactions of the Nova Scotian Institute of Natural Science (Part i, p. 50) I described this species from specimens forwarded to me by the Rev. J. Ambrose, who procured them with the dredge, in twelve to fourteen fathoms water, at the entrance of St. Margaret's Bay, in August 1860. I find that they are common on the coast, and afford food for the more voracious ground-feeders. DeKay's *G. mucronatus* does not coincide in color with the present species; but as it particularly corresponds in all other respects, I scarcely consider this variation a sufficient reason for disputing its identity, as all ichthyologists are aware how many familiar forms vary in the color of their markings, although beyond all doubt belonging to the same species.

WOLF-FISH.—*Anarrhicas lupus*.

- Anarrhicas lupus*..... Linn., Syst., i, p. 430.
 " " Fabr., Faun. Grœnl., p. 138, n. 97.
 " " Lacep., ii, pp. 299, 300, pl. 9, fig. 2.
 " " Rich., Faun. Bor. Amer., p. 95.
 " " Yarrell, Brit. Fishes, ed. 3, ii., p. 384.
 " " Gunth., Brit. Mus. Cat., iii, p. 208.
 " " DeKay, p. 158, pl. 16, fig. 43.
 " " Nilss., Skand. Faun., iv, p. 208.
 " *maculatus* Bloch., Schn., p. 496.

A very common fish in our waters, and perhaps the most voracious of all. When taken from the water it is covered with a thick coating of slime, which renders it difficult to be taken hold of. In February 1863, when examining the Greenland shark (*Scymnus borealis*) which had been taken by some of our fishermen, I observed two of these wolf-fish, of good size, protruding from its mouth, the shark having disgorged them after its capture.

ANGLER.—*Lophius piscatorius*.

- Lophius piscatorius*..... Linn., Syst., i, p. 402.
 " " Cuv. et Val., xii, p. 344, pl. 362.

- Lophius piscatorius Nilss., Skand. Faun., p. 245.
 " " Gunth., Cat. Fishes, iii, p. 179.
 " " Rich., Faun. Bor. Amer., p. 103.
 " " Storer, Fishes of Mass., pp. 71, 404.
 " Americanus..... DeKay, p. 162, pl. 28, fig. 87.

This is not an uncommon fish, although I have only had an opportunity of examining one specimen, which was forwarded by the Rev. J. Ambrose from St. Margaret's Bay.

BERGALL.—*Ctenolabrus burgall*.

- Ctenolabrus burgall*..... Gunth., Cat. Fishes, iv, p. 90.
 " *cœruleus*..... DeKay, p. 172, pl. 29, fig. 93:
Crenilabrus burgall..... Storer, Fishes of Mass., p. 78.
Labrus burgall..... Bloch., Schn., p. 251.

This species is known to the fishermen as the 'conner.' It is abundant in Halifax Harbor during the summer months, and is readily taken with hook and line by boys at the wharves. In the summer of 1862, when the French fleet anchored here, the sailors used to catch them in great numbers for cooking, but the inhabitants rarely touch them. At St. Margaret's Bay, according to Mr. Ambrose, they are given as food to pigs; but as the pork of these fish-fed pigs always tastes oily in consequence, they are generally fed upon other food, and well dosed with sulphur, for a short time prior to being killed.

Gunther gives as a variety of this species *C. uninotatus*, which is taken in our harbor in company with the former. It differs in having a black spot on the base of the two anterior soft dorsal rays. DeKay makes it a distinct species.

PIPE-FISH.—*Fistularia* — ?

A very fine specimen of this genus was taken on the 16th of September 1863, at Portuguese Cove, near Halifax. As I had only an opportunity of examining it for a few minutes after its purchase by a tradesman, the following very deficient description was all I could draw up at the time. It did not resemble very closely the *F. verrata* of Storer and DeKay, nor could I identify it with the *F. tabacaria* of the latter author, although the orbital processes corresponded. It was of greater size than either of the specimens mentioned by DeKay and Storer, and may possibly prove new to the Nova-Scotian fauna.

DESCRIPTION.—Extent from frontal extreme to caudal termination, 31 inches; from frontal extreme to base of snout immediately

anterior to eye cup, 7 inches; from frontal extreme to commencement of dorsal, 24 inches 2 lines; from frontal extreme to posterior edge of opercle, 10 inches; from pectorals to ventrals, 4 inches 7 lines; from ventrals to anal, 8 inches 8 lines; from anal to caudal, 4 inches 1 line; breadth at fifteen inches from frontal extreme, 1 inch $7\frac{1}{2}$ lines; over pectorals, 1 inch; over dorsal, 1 inch 2 lines; over caudal base, 4 lines; vertical base of caudal extreme, $3\frac{1}{2}$ lines; width of mouth over base of snout, 5 lines.

Head:—Width over eyes, 8 lines; vertical depth over eyes, 9 lines. Two bony processes at anterior occipital angle of eye cup.

Mouth:—Vertical gape, 1 inch; horizontal gape, $7\frac{1}{2}$ lines; armed with small teeth on vomer and jaws; lower jaw 2 lines in advance of upper.

Eyes:—Lateral diameter, 10 lines; vertical diameter, 5 lines.

Fins:—Pectoral; diameter at base, $7\frac{1}{2}$ lines. Dorsal; diameter at base, 1 inch $2\frac{1}{2}$ lines. Ventrals; extent, 9 lines; diameter at base, 3 lines. Anal; diameter at base, 1 inch $2\frac{1}{2}$ lines. Caudal; extent, 1 inch $7\frac{1}{2}$ lines; caudal filament broken off 1 inch $7\frac{1}{2}$ lines from base.

Color:—Above, reddish brown; beneath, cupreous, longitudinally lined with white.—*Communicated by the Natural History Society of [St. John] New Brunswick.*

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