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Translations of the Original Descriptions
of *Sebastes* by Georges Cuvier

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Translations of the original descriptions of *Sebastes* by Georges Cuvier

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Introduction

The speciose scorpaenid genus *Sebastes* has a long history of taxonomic confusion, the initial stages of which are dealt with in Fernholm and Wheeler (1983). Cuvier (1829) recognized that Linnaeus (1761) had combined two quite different species of fish in his description of *Serranus marina*. Partly as a result of this recognition, Cuvier (1829) erected a new genus, *Sebastes*, for the more northerly occurring of the two Linnaean species. He realized that this new genus was more closely related to the scorpaeniforms than to the perciforms, which included *Serranus*. Cuvier's initial description of *Sebastes* was quite brief (Cuvier, 1829), but later in the same year, he co-authored a much more extensive description of the genus, and included species from the North Atlantic Ocean, the Mediterranean Sea, the South Atlantic Ocean, the western and northern Pacific Ocean, and the Indian Ocean (Cuvier and Valenciennes, 1829). Some of these have proven to be representatives of other genera. Included here are translations from the French of both Cuvier's initial (1829) and more extensive (Cuvier and Valenciennes, 1829) descriptions of *Sebastes*.

In the translations, translator's notes are in brackets and the use of italics for scientific names and capitalization of generic names follow modern convention. Footnote numbers increment throughout the translations; they were numbered for each page in the originals. The figure of *Sebastes* from the original description (Cuvier and Valenciennes, 1829: Plate 87) is reproduced by permission of Asher Rare Books, the Netherlands.

Cuvier, 1829

The *Sebastes*

(*Sebastes*. Nob.)

(Plate 23, fig. 3.)

Have all the characters of the *Scorpaena* except that they lack cutaneous filaments, and that their head, less covered with bristles, is scaly.

There is a large species of them in the North Sea, called "marulke," and in some places "carp" (*Sebastes norvegicus*, Nob., *Perca marina*, Pennt., *Perca norvegica*, Müll.), Bonnat. Encycl. Meth., plate on ichthyology, fig. 210 [Bonnat. J. P. 1788. Tableau encyclopédique et méthodique des trois règnes de la nature... Ichthyologie. Paris. Tabl. Encyclop. Méthod. Ichthyol., p. i-lvi + 1-215.]. It is red, and is often more than two feet long. It is dried to make food provisions. Its dorsal spines are used as needles by Eskimos.

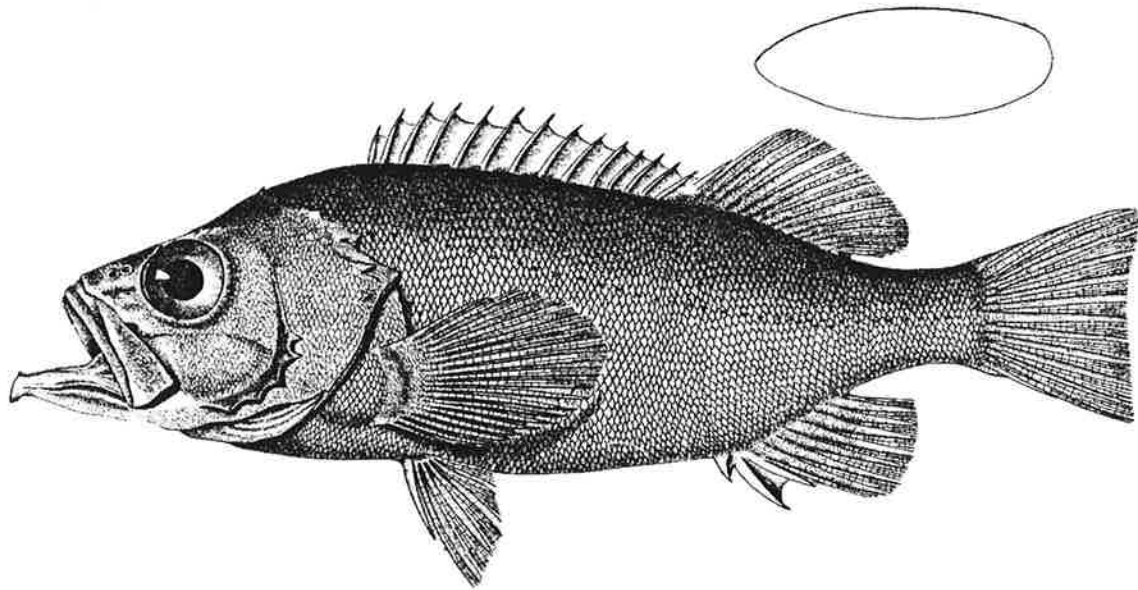
The Mediterranean has a species very similar, but its dorsal rays are less numerous (*Sebastes imperialis*, Nob., *Scorpaena dactyloptera*, Laroche, Annales Mus., 13, plate 22, fig. 9). Its palate is black; it lacks a swim-bladder, although the preceding species has one. ¹

¹ The supposed *Scorpaena malabarica* Bloch and Schneider, [Bloch, M. E., and J. G. Schneider. 1801. M. E. Blochii, Systema Ichthyologiae iconibus ex illustratum. Post obitum auctoris opus inchoatum absolvit, correxit, interpolavit Jo. Gottlob Schneider, Saxo. Berolini. Sumtibus Austoris Impressum et Bibliopolio Sanderiano Commissum. Systema Ichthyol., p. i-lx + 1-584.] is a *Sebastes*, the same as that of the Mediterranean.

Aj. [Adjacent to] *Scorp. capensis*, Gmel.; [Gmelin, J. F. 1789. Caroli a Linné ... Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species; cum characteribus, differentiis, synonymis, locis. Editio decimo tertia, aucta, reformata. 3 vols. in 9 parts. Lipsiae, 1788-93. Systema Naturae Linné vol. 1 (pt. 3), p. 1033-1516.]

Holoc. albofasciatus, Lacép., IV, 372; [Lacepède, B. G. E. 1801. Histoire naturelle des poissons. Hist. Nat. Poiss. vol. 3, p. i-lxvi + 1-558.]

Perca variabilis, Pal., or *Epinephelus ciliatus*, Tiles., Mém. de l'Ac. de Pétersb., IV, 1811, pl. xvi, f. 1-6. [Tilesius, W. G. von. 1813. Iconum et descriptionum piscium Camtschaticorum continuatio tertia tentamen monographiae generis Agoni blochiani sistens. Mem. Acad. Imp. Sci. St. Petersburg. 4 (for 1811): 406-478.]



SEBASTE du nord.

Warner del.

SEBASTES *norvegicus*. n.

M. P. de S. comp.

Sebastes norvegicus from Cuvier and Valenciennes (1829): Plate 87. Used by permission of Asher Books.

Cuvier and Valenciennes, 1829

[pg. 326]

Book IV: Armored Cheeks (“Joues Cuirassées”)

Chapter X

The *Sebastes* (“Sébastes”) (*Sebastes*, nob.)

The *Scorpaena* (“scorpènes”) properly so called have a head bristling with crests and spines and enveloped in a porous skin; seen faintly on dried individuals are small scales on the back of the cranium and at the top of the operculum.

There exist other fishes in this family the heads of which are less spiky and are covered with scales, on the snout, the maxillary, the cheek, and all the opercular parts, so as to resemble certain perches having a single dorsal, and do not properly resemble *Scorpaena*—if one sets aside the characters they have in common with perches - except for the simple rays on the lower half of their pectorals and the prolongation of their sub-orbital, which reaches the edge of their preoperculum.

It is one of these fishes that Monsieur de Laroche described at Iviça and named *Scorpaena dactyloptera*¹, because, not having examined many common *Scorpaena*, he supposed that this [pg. 327] character of simple rays, passing the membrane of the pectorals, was peculiar to its species.

There is also another species in the north, recognized a long time before, and it is with its history that we shall begin the history of this genus.

I have taken the name “*Sebastes*” (“sébaste”) from the epithet of “imperial,” which [name] the species in the Mediterranean has at Iviça —“σεβας ος” (august). [the character between the α and the ο that was used here does not have an equivalent in the modern Greek alphabet (we used σ since it was the most similar appearing character available to us). Apparently the character is a

¹ Annales du Muséum, t. XIII, p. 337, pl. 22, fig. 9. [Delaroche, F. E. 1809. Suite du mémoire sur les espèces de poissons observées à Iviça. Observations sur quelques-uns des poissons indiqués dans le précédent tableau et descriptions des espèces nouvelles ou peu connues. Ann. Mus. Hist. Nat. Paris. vol. 13, p. 313-361.]

contraction for σ and τ . It is used by Cuvier and Valenciennes (1829) for other genera ending in letters similar to “stes” (e.g., *Centropristes* [vol. 3, pg. 36], *Apistes* [vol. 4, pg. 391]). Jordan and Evermann (1898) wrote the Greek word from which *Sebastes* is derived as $\sigma\epsilon\beta\alpha\sigma\tau\acute{o}\varsigma$.]

The northern *Sebastes*, also called *Perca*
norvegica, and falsely, *Perca marina*.

(*Sebastes norvegicus*, nob.: *Perca marina* Linn.; *Perca norvegica*, Müll.)

The similarities of these *Sebastes* with the perches are great enough to have deceived some naturalists of the first order. We have proof of this in the fish we are about to describe and which lives throughout the North Sea and the polar sea. It was classified by Linnaeus, in the tenth edition of his *Systema* and in the second edition of his *Fauna of Sweden*, among the *Perca*, and, what is hardly believable, confused with the *Perca marina*, which, according to its characters and synonyms, [pg. 328] has to be the seaperch (“serran écriture”), of the Mediterranean (*Perca scriba*, Linn.)².

This error was repeated, like many another, and it has been written ever since in every ichthyology that the *Perca marina* or the *Holocentrus marin* lives in both the Mediterranean and the northern ocean; Pennant showed under this name an engraving of this species of the north³, and it is his illustration that Bonnaterre copied for his representation of the *Perca marina*, all the while giving it in his text the characters that are proper only to the seaperch (“serran”)⁴.

² See our chapter on *Serranus*.

³ Brit. zool. édit. de 1776, p. 226. [Pennant, T. 1776. British zoology. 4th Edition. vol. 3. London.]

⁴ Encyclopédie méth., planche d’ichthyologie, p. 128, pl. 54, fig. 210. [Bonnaterre, J. P. 1788. Tableau encyclopédique et méthodique des trois règnes de la nature... Ichthyologie. Paris. Tabl. Encyclop. Méthod. Ichthyol., p. i-lvi + 1-215.]

Meanwhile, Ascanius gave a drawing of it⁵, and Monsieur Müller, in his Danish Zoology⁶, labels it under the new name of *Perca norvegica*; Otto Fabricius, in the Fauna of Greenland⁷, sorted out the confusion of species caused by Linnaeus' error; and Retzius established it under the name of *Perca norvegica* in his edition of Swedish Fauna; but the only result of their efforts is that the nomenclators have listed a Norwegian perch or a Norwegian *Holocentrus* next to the marine *Holocentrus* or the [pg. 329] marine perch, without stating that the marine perch includes the other one also in its history.

The size alone of this fish should have been a sign that it was not the seaperch. Fabricius gives it an arm's length; Retzius, more than two feet; and it is clear throughout the text Pontoppidan that it is this species he was referring to when he said that his sea scorpion, or "marulke," is four feet long. However, there must have been some confusion in Pontoppidan too, for it is thought that it is still this fish he means by the name of "raedfisk," or the redfish⁸, and in fact it is given this name in certain cantons of Norway, as well as the name of "karfe," "ouger," or "uer."

⁵ Ic., pl. 16. [Ascanius, P. 1767-1805. Icones rerum naturalium, ou figures enluminées d'histoire naturelle du Nord. Copenhagen, 1767-1806. 5 parts, 36 pp., 50 pls. Pt. 2 (1772), 8 pp., pls. 11-20.]

⁶ En 1776, p. 46. [Bonnaterre, J. P. 1788. Tableau encyclopédique et méthodique des trois règnes de la nature... Ichthyologie. Paris. Tabl. Encyclop. Méthod. Ichthyol., p. i-lvi + 1-215.]

⁷ Fabricius, Fauna groenl. p. 167. [Fabricius, O. 1780. Fauna Groenlandica, systematice sistens Animalia Groenlandiae occidentalis, etc. Copenhagen & Leipzig. Fauna Greenland, p. i-xvi, 1-452.]

⁸ His. nat. of Norway, p. 141. [Müller, O. F. 1776. Zoologiae Danicae prodromus, seu animalium Daniae et Norvegiae indigenarum characteres, nomina, et synonymy imprimis popularium. Havniae. Zool. Danicae Prodromus, p. i-xxxii + 1-282.]

It is under the name of the “karfe” (carp) that Olafsen and Powelsen gave an erroneous illustration in their *Voyage to Iceland*⁹. They mention it in the text, at Nos. 527, 743, and 895, but with no details, and confining themselves to saying that it is the “widest” fish of that coast - an expression that I do not understand but which is probably a mistake in translation. They believed it belonged to the genus of *Pagrus* (“pagres”).

[pg. 330] Today we finally have this fish: It was sent to us from Norway by Monsieur Noel, and from Miquelon by Monsieur de la Pilaye, and it turns out that it is not a perch but a *Sebastes*, very like the dactylopteran *Scorpaena* of Monsieur de Laroche.

[this is Cuvier’s own description]

Its shape is approximately that of the perch or the great seaperches (“serrans”) – that is, its body is oblong, somewhat compressed, and its dorsal and abdominal curvatures are slightly convex, the mouth is oblique; the lower jaw jutting forward.

Its height at the pectorals is a bit more than a third of its length, and its thickness is not quite half of its height; the length of its head is a third of its total length. The nape of the neck descends with a slightly convex curvature, which becomes slightly concave on the cranium and again somewhat convex on the snout. The eye is near the line of the front and forward of the middle, and its diameter equals a quarter of the length of the head; the interval of the eyes is flat and equal to approximately their diameter. The mouth is oblique, opening just to under the front of the eye; but the maxillary, very wide behind, extends to just under the middle of the eye: the lower jaw rises up beyond the other, and its symphysis has underneath it a protuberance which when the mouth is closed, extends before the fish.

Three great pores are pierced under each of its gills. The upper jaw is slightly protractile, but the maxillary cannot be hidden under [pg. 331] the suborbital when [the jaw] is

⁹ Pl. 32 de la trad. franç. [Pl. 32 of the French translation. Olafsen, E. 1772. Vice-Lavmand Eggert Olafsens of Land-Physici Biarne Povelsens Reise igiennem Island. Lindgren, Sorse. Reyse Island vol. 1, p. 1-618.]

retracted. The anterior suborbital has only a small point, which very slightly crosses over the maxillary: The posterior one has an extension that goes slightly obliquely behind towards the preoperculum, but not quite reaching it, so that it can just barely be said that it armors the cheek. The surface of the suborbitals, in the skeleton, is slightly hollow but not bristling with crests or spines. The nostril has two round, very open holes, next to each other and to the orbit; the nasal spine can be seen with difficulty. Forward at the edge of the orbit there is a small spine, and in back of this edge, on the cranium, there are three more, just as small, and then a slightly raised crest on each side of the cranium which also ends in a small spine: one of these spines is also at the suprascapular, one at the scapular and two at the operculum; but these are only vestiges, reminiscent of the ridges and spines that cover the head of the *Scorpaena* properly so-called. The preoperculum is somewhat more reminiscent of them: it is rounded, and has five pointed spines, but not very long, and widened at the base. Its border is not particularly marked. The suboperculum and the interoperculum each have a small spine at the place where they touch each other.

Villiform teeth line the two jaws, the front of the vomer and the external edge of each palatine in front.

The tongue is triangular, somewhat free, slender and without teeth.

The membrane of the gills is deeply cleft, and is [pg. 332] attached only at the same place as the pedicle of the breast; seven rays have been counted there.

The external rakers of the first gill are quite long: the interior row and the two rows of the next gills become reduced to tubercles armed with villiform teeth; the teeth of the pharyngeal bones are like this, too.

The dorsal begins above the super scapulars; it has fifteen spiny rays, quite strong, fairly equal, the middle ones of which, being the most elevated, have a height scarcely more than one fifth of the height of the body. This part takes up about a third of the total length: the soft part is shorter by half but more than double in height; it has fifteen branched rays. The anal corresponds to the anterior two thirds of the soft part of the dorsal; it has three stout

spiny rays, the first of which is shorter by half than the other two, and eight branched ones twice as long as the latter. The part of the tail between the end of the anal and the beginning of the caudal [fin] is a sixth of the total length; its height is an eleventh, and its thickness is less than half of its height; the caudal is almost a seventh of the length; its edge is somewhat in the shape of a crescent, and on it fourteen complete rays have been counted. The length of the pectoral is more than a fifth of the total length; it is rounded and as wide as it is long: its first ten rays are branched; the nine others are simple, although articulated; but they do not surpass the first ones in size: all emerge from the membrane slightly. The ventrals come out a bit behind the pec- [pg. 333] torals and do not extend quite so far; they have a spine and five branched rays, the first ray being twice as long as the spine: their internal edge is attached to the body to make a third [meaning?].

The whole fish is covered with rough scales, up to the end of the snout and on the maxillaries; only the lips, the gills' membrane, the posterior edge of their opening and the armpit [sic] of the pectorals lack scales: there are small bands of them behind the spines of the dorsal. The soft part of this fin, that of the anal and the caudal are furnished with very small scales, up to half.

They [the scales] are rather small, there are at least ninety of them on a line between the gill and the tail, and thirty to forty on a vertical line near the pectorals. Their shape is oval, longer than they are wide; their edge is keen, and they have ten or twelve indentations at their base. On the back there are among them much smaller ones, fitted in the joints and making their surface appear granular.

The lateral line, parallel to the back and occupying forward the upper quarter of the height, is marked by small cylindrical pimples, slightly pointed behind, and placed evenly so that there are only about thirty-six along its length: but it is only on the dried specimen that this can be readily seen.

This description is taken from individuals from Norway and Newfoundland, which seem not to differ in their shapes.

[pg. 334] In their present condition they appear a rather even russet [reddish], with a dark spot near the angle of the operculum; but I find in the notes of Monsieur de la Pilaye that the color of the fresh fish is a bright carmine red, which becomes slightly darker towards the back, and pales on the ventral side. Fabricius too says that it has a red body, especially on the back and on the fins, and that its abdomen is more pale.

It is this red tint that caused Olafsen to take it for a *Pagrus*.

The liver of this *Sebastes* from the northern seas is composed of two lobes extending in each hypochondrium; they meet under the esophagus by means of a rather small part. The right, which is thinner than the left, ends in a very sharp point. The gall-bladder is small, globular, and hanging from a very long hepatic duct, which dilates under the area of the liver, located under the esophagus. The bile vessels, rather numerous, end up in this dilated part of the duct that goes under the esophagus and goes on to open up in the intestine near the pylorus.

The esophagus is rather long; it narrows slightly near the cardia. The stomach is not a very big one; it is long, and pointed in back; its walls are thin, and slightly puckered within. The pylorus opens at the end of a branch which comes from the lower wall of the stomach, slightly after the cardia. There are nine coecal appendages that are rather thick and medium long.

The intestines makes two long loops before ending at the anus.

[pg. 335] The milts [testes] are rather thick and occupy scarcely half the length of the abdomen.

In this species there is a rather large swim-bladder, occupying approximately the upper two thirds of the length of the abdominal cavity. This bladder is oval, simple, without appendages; its walls are medium thick and white but not silvery.

The kidneys are small, situated near the diaphragm; they soon become narrow, and end before the posterior point of the stomach: they empty their urine into a muscular bladder that is quite large. The peritoneum is black. The only thing I found in the stomach was small crabs.

Its skeleton has twelve abdominal vertebrae and nineteen caudal, for a total of thirty-one; the last five of the abdomen have transverse protuberances, which become elongated and lower, but do not become rings.

The ribs are thin and simple; the bones of the pelvis, long and narrow; those of the arm and wrist [sic], rather wide. The first lower interspinal, which has the three anal spines, is long, stout, and laterally grooved.

According to Fabricius, the flesh of this *Scorpaena* is meager but of agreeable flavor; it is eaten dried or cooked: its head and skin are fatty, its lips are eaten raw.

The same observer informs us that in Greenland this fish stays in the deepest southern gulfs, that it [pg. 336] approaches the shores only when it is brought to the surface by storms, and then its stomach comes out of its mouth, which causes it to perish. This one fact, found in Fabricius, has led me to think that, different from the other *Scorpaena*, the *Sebastes* must have a swim-bladder; but my conjecture has not been verified for all the species.

It feeds especially on a species of plaice (“plie”) known as *Pleuronectes cynoglossum*, in the midst of which it lives. One fishes for it as for the halibut but with lines twice as long; it will take the baited hook.

Greenlanders formerly used its dorsal spines as needles.

The Mediterranean *Sebastes*, or dactylopteran
Scorpaena (“Scorpène dactyloptère”) of de Laroche: imperial seaperch (“Serran impérial”)
of the Majorcans, etc.

The ovaries are big and extend from the diaphragm to the anus.

What is most worthy of note is the absence of a swim-bladder. Monsieur de Laroche had already noted this, but the thing becomes all the more remarkable today since it is known there is one in the *Sebastes* of the north.

The kidneys are small, and the urinary bladder is smaller and thinner than in northern *Sebastes*. The peritoneum is black as ink.

Its skeleton is like that of the *Sebastes* of the north except for some slight details of the head, which differences are visible externally.

This species, like the northern, lives only at great depths; thus, Monsieur de Laroche says that it is extremely rarely seen in the ports where there is no custom of fishing at those great depths. He has seen them caught at one hundred sixty fathoms, one hundred eighty, and even three hundred sixty. Monsieur Risso affirms that the species is very common at Nice, that it is found there throughout the year among the deeper rocks. The female is full of eggs in summer. Its flesh is not much valued, but it is used in soup.

[pg. 340] It is called “cardouniero” [name seems to be derived from “thistle”] at Nice, doubtless on account of its spines. Monsieur de Laroche says that at Iviça, it is called “imperial seaperch,” perhaps because of its beautiful red color, and at Barcelona, “panegal.” I really suspect that it is the “scrofanu imperiali” of the Sicilians that Monsieur Rafinesque took for the *Cottus massiliensis* of Forskal, and that for this reason he neglected to describe it¹².

¹² Rafinesque, *Indice d'itiot. sicil.*, p. 27, n. 194. [Rafinesque, C. S. 1810. *Indice d'ittiologia siciliana; ossia, catalogo metodico dei nomi latini, italiani, e siciliani dei pesci, che si rinvencono in Sicilia disposti secondo un metodo naturale e seguito da un appendice che contiene la descrizione de alcuni nuovi pesci* +. *Indice Ittiol. Sicil.*, p. 1-70.]

The *Scorpaena malabarica* of Bloch¹³ is a *Sebastes*; his description would already have proved it, and what leaves no doubt at all is the examination we have made of the same specimen that is the object of his description. So it is quite certain that the author compared it mistakenly to the *Cottus australis* of White¹⁴, which is an *Apistes* (“apiste”).

The fish of Bloch’s is very like, in all details, our species from the Mediterranean that it is impossible for us not to regard it as identical with ours; thus, the two origins he gives it – South America and the coast of Coromandel - also appear suspect to us. He had received his specimen from Abilgaard, who could easily have been mistaken about its origin.

[pg. 341]

The Cape *Sebastes*

(*Sebastes capensis*, nob.: *Scorpaena capensis*, Gm.;

Scorpaena africaine, Lacép., vol. III, p. 266)

¹³ Syst. post., p 194. n. 8. [Bloch, M. E., and J. G. Schneider 1801. M. E. Blochii, Systema Ichthyologiae iconibus cx illustratum. Post obitum auctoris opus inchoatum absolvit, correxit, interpolavit Jo. Gottlob Schneider, Saxo. Berolini. Sumtibus Auctoris Impressum et Bibliopolio Sanderiano Commissum. Systema Ichthyol., p. i-lx + 1-584.]

¹⁴ Voyage a la Nouvelle-Galles du sud, [Voyage to New South Wales] p. 286, pl. 52, fig. 1. [White, J. 1790. Journal of a voyage to New South Wales with sixty-five plates of non descript animals, birds, lizards, serpents, curious cones of trees and other natural productions. Voyage N.S.W., p. 1-297.]

Meanwhile, the Antarctic hemisphere has its *Sebastes* as does the Arctic hemisphere, and in fact it resembles the northern *Sebastes* more than does the *Sebastes* of the Mediterranean. We have several individuals, brought back from the Cape of Good Hope by the late Delalande.¹⁵

[Cuvier's description starts here]

The interval between their eyes is almost as wide as in the *Sebastes* of the north, but slightly more concave, and the two projecting lines are noticeable here. Their dorsal spines do not rise any farther than in the species of the north.

D.12/13 or 14; A. 3/6 or 7; C.13; P.18, 8 of which are simple; V.1/5.

In their present condition, these *Sebastes* of the Cape look reddish, with whitish speckles numerous on the head and back, and a tinge of black on the operculum; but we do not know what their color was when they were in fresh condition.; however, everything points to its having been red.

The species appears to reach about the same size as the species from the Mediterranean.

We found in it a liver composed of three elongated lobes; the left is the largest; of the other two, which are about equal, one is in the middle and the other is entirely on the right side of the belly. [pg. 342] The gall bladder and its hepatic duct resembles in all aspects those in the northern *Sebastes*.

The esophagus is short and wide; it narrows slightly to indicate the cardia. The stomach is in the shape of a rather long sac, less pointed than that in our *Sebastes* of the north.

The pylorus is furnished with eleven long, slender caeca.

¹⁵ [Cuvier continues here his usage of writing of his colleagues that are still alive by referring to them as "Monsieur"; those who have died are referred to by name without the title of respect. Proof of this is here: "Delalande" without "Monsieur," and even preceded by "feu" (=the late).]

The intestine no longer existed in the individual that we dissected.

The swim-bladder is large, oval, simple, with thin, silvery walls.

The peritoneum is grey speckled with black.

This *Sebastes* of the Cape has been well described by Gronovius in his *Zoophylacium* (p.88, no. 293 [Gronovius, L. T. 1763-1781. *Zoophylacium Gronovianum, exhibens animalia quadrupeda, amphibia, pisces, insecta, vermes, mollusca, testacea, et zoophytas, quae in museo suo adservavit, examini subiecit, systematice disposuit atque descripsit. 3 pts. in 1. Leiden: Theodor Haak et Samuel et Johannes Luchtmans. Pt. 2, 1763; pt. 2, 1764; pt. 3, 1781.*]), under the name of “perch with a single dorsal fin, four spines above the eyes on both sides of the head, spiny-scaled opercula, rather uniform caudal.” [the preceding quote was in Latin, and was translated by Micheal A. Williams, School of Comparative Religion, University of Washington] Except he gives it – perhaps through a printer’s transposition - D.14/12. [“rather uniform caudal” may actually refer to the dorsal fin, which has about the same number of spines and rays: AWK].

It is upon this description of Gronovius’ that the *Scorpaena capensis* of Gmelin was established, or the *Scorpeène africaine* of Monsieur de Lacepede, a species which disappeared, for some reason or other, from Bloch’s *Systema*.

[pg. 343]

The *Sebastes* with speckled dorsal
(*Sebastes maculatus*, nob.)

The Cape produces yet another *Sebastes*, resembling more closely than the preceding the species of the Mediterranean,

and which has dorsal spines as high as the latter, and the lower pectoral rays as big and as disengaged from their membrane; but which distinguishes itself by a narrower interval between the eyes, more concave and entirely lacking in scales.

A large brown spot is found in each interval between the dorsal spines, and a brown band all along their roots: in the preserving fluid, the rest of the body appears reddish or yellowish, but in all probability, it was red, as in the other species.

D.12/13; A.3/6; C.14; P.19; V.1/5.

Our individuals as only seven inches. We owe these also to Monsieur Delalande.

They no longer have viscera but one can be sure that this species has no swim-bladder and that its peritoneum is of a deep black.

[pg. 344]

The White-Banded *Sebastes*
(*Sebastes albofasciatus*, *Holocentrus albofasciatus*,
Lacép., vol. IV, p. 372)

These *Sebastes* are found as far as the seas of China and Japan. A Japanese print in the Museum's library gives an illustration of it that is perfectly recognizable as to genus, and painted in colors the same as ours, upon which Monsieur de Lacepede has based his *Holocentrus albofasciatus*.

It is of a handsome red-lead color, whitish on the abdomen, at the edge of the preoperculum and of the operculum, and especially a white band at the root of the caudal. It shows only eleven spiny rays on the dorsal.

Although we easily recognized a *Sebastes* in this figure, it does not seem to us authentic enough in the details to warrant our deciding whether the species is the same as one of those that we have

observed. Fortunately, we have just received through the kindness of Monsieur Lichtenstein the fish itself, which was given to the Cabinet of Berlin by Monsieur Langsdorf.

Although having become almost white through the drying process, the white band at the base of the caudal can still be discerned; but there remain no [pg. 345] traces of the vertical bands. But on the whole, it is difficult for a fish to be more like another than this one is like the *Sebastes* of the Mediterranean. Only, we find its snout a bit longer, the suborbital larger, and the eye smaller. The spines immediately behind the eyes are in four rows, and the Mediterranean *Sebastes* has only two rows; they are also proportionately stronger in the species from Japan. The simple rays of the pectoral appear a bit thinner, less separated, and there is one less ray.

D.12/13; A.3/6; C.15; P.17, of which 7 are simple; V. 1/5.

The drawing in the Japanese work is reproduced in the Japanese Encyclopedia with a text that Monsieur Abel Remusat was kind enough to translate for us, and where it is said that the species is very common on the coasts of Japan; that the species reaches three feet in length, its flesh is white and tasty, and it is fished for especially in winter. Therefore, its characteristics seem to relate it closely to our *Sebastes* of the north.

The Marbled *Sebastes*
(*Sebastes marmoratus*, nob.)

Our Japanese print contains the drawing of another *Sebastes*, also brought back by Monsieur Langsdorf,

[pg. 346] and the red on its back and sides is marbled with brown or near-black, such that the red areas look like big, round spots. Its fins are also varied with brown and red. On its pectorals, the anal, and the soft part of the caudal, the brown is scattered in specks; on the caudal it becomes continuous spots. As for shape and spines, this species resembles the preceding one, but its head is proportionately shorter.

D.12/12; A. 3/5; C. 16; P.18, 8 of which are simple; V.1/5.

The Spineless-Headed *Sebastes*
(*Sebastes inermis*, nob.) [inermis = unarmed]

A third *Sebastes* from Japan, also brought back by Monsieur Langsdorf, is different from all the others

in that the interval between the eyes is not at all concave, and the spines above its orbit and above its cranium are obliterated or reduced to slight bones—that is to say, one over each orbit and two upon the back of the cranium, each ending in a small point; but the spines of its operculum, preoperculum, and the anterior part of its suborbital retain their customary form.

D. 12/15; A. 3/7; C.17; P.15, 6 of which are simple; V.1/5.

In its dried state this fish appears rather uniformly brown.

[pg. 347]

The Variable *Sebastes*
(*Sebastes variabilis*, nob.)

Finally, there is another northern *Sebastes* of the Pacific Ocean, which Pallas¹⁶ called *Perca variabilis* and Monsieur Tilesius described in more detail and represented¹⁷ under the name of *Epinephelus ciliatus*.

¹⁶ Zoogr. ross. t. III, p. 241, n. 174. [Pallas, P. S. 1814. Zoographia Rosso-Asiatica, sistens omnium animalium in extenso Imperio Rossico et adjacentibus maribus observatorum

Its head is even less armored than the preceding. No ridges on the cranium can be seen or over the orbit, and its suborbital has no teeth; the preoperculum has five spines, short and blunt, and the operculum has two pointed ones. One notes with difficulty the little spines above its nostrils. The species is yet visibly part of this genus on account of the stay going from its suborbital to its preoperculum, and which may be felt through the skin, as well as on account of the nine simple rays of its pectorals.

D.13/15; A. 3/9; C. 17; P. 18, 9 of which are simple; V. 15.

The individual we describe comes from the cabinet of Pallas, to whom it was sent by Merk.

In its dried state it appears entirely dark brown; but according to that great naturalist, color in the fresh state varies with age and sex: often it is a nearly bluish brown, with white belly and [pg. 348] brown fins; the females have a reddish belly. Monsieur Tilesius says it is a russet purple or a silvery brownish color.

The largest, according to Pallas, are only two feet long.

This species is found throughout the sea that separates Kamchatka from America. Many especially are caught in the Aleutian Islands. The inhabitants of Unalaska call the species “kakutshik” or “kathschikug,” and on the coast of America, the “tockugh.”

recensionem, domicilia, mores et descriptiones, anatomen atque icones plurimorum. 3 vols (1811-1814). Petropoli. Zool. Rosso-Asiatica vol 3, p. i-vii + 1-428 + index (I-CXXV).]

¹⁷ Dans les Mémoires de Pétersbourg, t. IV (pour 1811), p. 474, pl. 16, fig. 1 à 6. [Tilesius, W. G. von. 1813. Iconum et descriptionum piscium Camtschaticorum continuatio tertia tentamen monographiae generis Agoni blochiani sistens. Mem. Acad. Imp. Sci. St. Petersb. 4 (for 1811): 406-478.]

Pallas was well aware of the analogy of this fish with the *Perca norvegica* of Ascanius (fasc.2, pl.16), which is our first *Sebastes*; but he went too far in considering it identical in species.

Monsieur Tilesius took its name *ciliatus* from a placement of scales that is no more remarkable than in the majority of its congeners.

The Little *Sebastes*
(*Sebastes minutus*, nob.)

All naturalists engaged in the latest scientific expeditions have brought back, either from the Moluccas or the Marianas or the Society Isles, a quite small *Sebastes*,

of a dark brown-red, marbled with an even darker brown-red, having spines on the head—especially those of the sub [pg. 349] orbitals—more marked than in the large species, and almost as obvious as in the *Scorpaena* properly so-called, such that one might take it for a *Scorpaena*, if one did not notice the small scales that decorate its head as far as the end of the snout.

The lateral line is quite rough.

D. 12/13, etc.

The viscera of this little *Sebastes* resembles that of the *Sebastes* of the north and of the Cape.

Its swim-bladder is proportionally larger and glossier than those of the other two species. There are only three caeca at the pylorus. The peritoneum is greyish.

The *Sebastes* of Bougainville
(*Sebastes bougainvillii*, nob.)

Monsieur the Baron de Bougainville brought back from his voyage round the world, ended in 1826, a *Sebastes* different from all the others in the short length of its snout, the strength of the spines on its head, the size of its eye, and especially in the height of the spiny rays on its dorsal.

The diameter of its orbit is only two and one third the length of its head, taken from the snout to the end of the operculum. Its profile falls quickly and the portion of its snout in front of the eye is only half the diameter of the orbit. Its nasal [pg. 350] spines are quite pointed. The superciliary arch has eight, of which three are strong. There is a strong one on each side of the cranium, one behind the orbit, one on the temple, five or six at the suborbital crest: the one of the preoperculum that corresponds to the end of this crest is long and has one on its edge; there are three beneath the length of the preopercular border. The operculum has two extremely sharp ones. All parts of the head have scales. The spines of the dorsal are longitudinally striated. The third one, which is the highest, is as high as the body under it; the first is but a third of the height of the body: the spines decrease till the eleventh, which is a little shorter than the first. The second rises slightly with the soft part. The twelfth ray of the anal is also very long, is angular, and thicker than any on the back. I see only one ray that is definitely simple on the pectorals; all the others are at least slightly forked.

B.7; D. 12/8; A. 3/5; C. 17; P. 19; V. 1/5.

The fish was taken in the Indian Ocean. Its characters, and especially the dividing of most of the rays on its pectorals, distance it well enough from the other species of the genus.

Its stomach is quite large. I find only four coeca, the two on the right being long and the two others short. The peritoneum has a fine silvery luster. There is no swim-bladder.

Literature Cited

Cuvier, G. 1829. Le Règne Animal, distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée. Ed. 2 v. 2: i-xvii+ 1-532.

Cuvier, G., and A. Valenciennes. 1829. Histoire naturelle des poissons. Tome quatrième. Livre quatrième. Des acanthoptérygiens à joue cuirassée. v. 4:i-xxvi + 2 pp. + 1-518, Pls. 72-99, 97 bis.

Fernholm, B., and A. Wheeler. 1983. Linnaean fish specimens in the Swedish Museum of Natural History, Stockholm. Zool. J. Linn. Soc. 78: 199-286.

Jordan, D. S., and B. W. Evermann. 1898. The fishes of North and Middle America. Bull. U.S. Nat. Mus. 47: 1241-2183.

Linnaeus, C. 1761. Fauna Svecica sistens animalia Sveciae Regni:... Editio Altera. Stockholm: Laurentii Salvii, p. 1-578.