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Scorpaena decemradiata new species (Teleostei: Scorpaenidae) from the Gulf of Aqaba, northern Red Sea, a species distinct from *Scorpaena porcus*

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Summary: The scorpionfish *Scorpaena decemradiata* n. sp. is described from off the coast of Israel in the Gulf of Aqaba, northern Red Sea. The new species is similar to *S. porcus* Linnaeus, 1758, but is characterized by dorsal fin spines XII, soft dorsal fin rays 10 (the last divided at base); pectoral fin rays 16, uppermost branched pectoral fin ray is the second; lacrimal with 2 spines over maxilla that point at nearly right angle from each other, the posterior pointing ventrally and slightly anteriorly; occipital pit well developed; anteriormost mandibular lateral-line pores small, separated; scales ctenoid; 59-62 scale rows in longitudinal series; scales absent on chest and pectoral fin base; and cirri developed over entire head and body, but no cirri on lower jaw. An updated checklist of the species of the genus *Scorpaena* Linnaeus, 1758 and a key to the species of the eastern Atlantic, Mediterranean Sea and Red Sea are presented.

Keywords: taxonomy; fishes; new species; Red Sea; distribution; checklist; key.

Scorpaena decemradiata* nueva especie (Teleostei: Scorpaenidae) del golfo de Aqaba, mar Rojo del norte, una especie distinta de *Scorpaena porcus

Resumen: En este trabajo se describe el escorpeniforme *Scorpaena decemradiata* n. sp. de la costa de Israel, golfo de Aqaba, norte del mar Rojo. La nueva especie es similar a *S. porcus* Linnaeus, 1758, pero se caracteriza por la presencia de XII espinas y 10 radios blandos (el último dividido en la base) en la aleta dorsal; 16 radios en la aleta pectoral, el radio ramificado más superior es el segundo; lacrimal con 2 espinas sobre el maxilar que apuntan casi en ángulo recto, la posterior apuntando ventralmente y ligeramente en dirección anterior; fosa occipital bien desarrollada; los poros más anteriores de la línea lateral mandibular son pequeños y separados; escamas ctenoides; de 59 a 62 filas de escamas en series longitudinales; escamas ausentes en el torax y la base de la aleta pectoral; y cirros desarrollados sobre toda la cabeza y el cuerpo, pero no en la mandíbula inferior. Se presenta una lista actualizada de las especies del género *Scorpaena* Linnaeus, 1758, y una clave para las especies del Atlántico este, mar Mediterráneo y mar Rojo.

Palabras clave: taxonomía; peces; nueva especie; mar Rojo; distribución; lista; clave.

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INTRODUCTION

The scorpionfishes of the genus *Scorpaena* Linnaeus, 1758 are mostly distributed in warm temperate seas, and occasionally also in tropical seas, around the world. They inhabit benthic habitats, mostly dwelling on rocky reefs. The genus includes a total of 61 valid species (Fricke et al. 2018). It is characterized within the family Scorpaenidae by the dorsal rays normally XII, 9 (7-10, 8 or 10 normal for some species), anal rays normally III, 5; pectoral rays 16-21, some rays branched, the branching usually compound in larger specimens; swimbladder absent; vertebrae 24; scales on body cycloid or ctenoid; occipital pit usually present, never flat or convex; palatine teeth present; ventral margin of lacrimal bone usually with numerous spines; posterior lacrimal spine absent or not hooked forward; no slit behind fourth gill arch; scales on pectoral fin base reduced or absent; lateral line normal, continuing onto or near base of caudal fin; pored lateral-line scales forming relatively complete tubes; and peritoneum pale (Eschmeyer 1969; Poss 1999; modified).

The genus *Scorpaena* has been known since ancient times (Aristotle, 4th century BC; see Artedi 1738b); in modern ichthyology it was first described by Linnaeus (1758: 266), with *S. porcus* Linnaeus, 1758 and *S. scrofa* Linnaeus, 1758 as the only known species at the time. The species description of *S. porcus* by Linnaeus (1758) was based on multiple sources from localities in the Mediterranean Sea (see Artedi 1738b, "Scorpaena pinnulis, ad oculos et nares"), and it was subsequently designated by Bleeker (1876: 3) as the type species. The genus has been placed on the Official List of Generic Names in Zoology by Opinion 77 (Anonymous 1922).

When examining specimens of *Scorpaena* from the Gulf of Aqaba, our attention was drawn to the identity of specimens previously misidentified as *Scorpaena porcus*. We found these specimens to be distinct from populations in the Mediterranean Sea, prompting our examination of other previous records of *S. porcus*, allegedly from the Red Sea. The analysis of these individuals demonstrated that the Gulf of Aqaba population represents a separate species, which is described in the present paper.

MATERIALS AND METHODS

Specimens were examined at the Australian Museum, Sydney (AMS), the Natural History Museum, London (BMNH), the Hebrew University, Jerusalem (HUJ), the Muséum National d'Histoire Naturelle, Paris (MNHN), Tel Aviv University (SMNHTAU) and the Staatliches Museum für Naturkunde, Stuttgart (SMNS).

Descriptive methods follow Eschmeyer (1969). In the description, the data of the holotype are presented first, followed by those of the paratype in parentheses. The classification is based on Fricke et al. (2018) and references follow Fricke (2018). The museum abbreviations follow Fricke and Eschmeyer (2018).

Comparative material: *Parascorpaena aurita*: BMNH uncat. (1, 80.7 mm SL, previously identified as *Scorpaena erythraea*), Red Sea; BMNH 1871.4.13.26 (1, 88.7 mm SL, previously identified as *Scorpaena erythraea*), Massaua, Eritrea, Red Sea. *Scorpaena porcus*: BMNH 1929.8.7.25 (1), Sevastopol, Black Sea; BMNH 1935.4.12.2 (1), Dorset, UK; BMNH 1938.11.15.50 (1, 124.1 mm SL), Philippeville [Skikda], Algeria; BMNH 1960.6.24.145-149 (5, 99.1-131.3 mm SL), Catalunya, Spain; BMNH 1963.5.14.655 (1, 118.4 mm SL), Banyuls-sur-Mer, France; BMNH 2015.3.12.9 (1, 233.4 mm SL), Plymouth, UK; HUJ 4962 (1), Bat-Galim, Israel; HUJ 5315 (1), Michmoret, Israel; HUJ 12060 (1), Ligurian Sea, Italy; HUJ 12258 (1), Jaffo, Israel; HUJ 14139 (2), Famagusta, Cyprus; HUJ 14223 (2), Cyprus, HUJ 14555 (1), Famagusta, Cyprus; HUJ 14573 (4), Rhodes, Greece; HUJ 14591 (1), Rhodes, Greece; HUJ 14674 (1), Cape Kiti, Cyprus; HUJ 17860 (1), Malta; HUJ 19126 (2), Cape Dolex, Cyprus; HUJ 19129 (3), Famagusta, Cyprus; HUJ 19394 (1), İstanbul, Turkey; HUJ 19437 (1), Yanai Beach, Israel; HUJ 20283 (6), east of Mallorca, Balearic Islands, Spain; MNHN 0000-6706 (2 syntypes of *Scorpaena erythraea* Cuvier in Cuvier and Valenciennes, 1829, 107.6-154.7 mm SL), Red Sea/locality probably erroneous; the larger specimen is the lectotype as designated below; SMF 35951 (9, 104.1-171.7 mm SL), France, Marseille; SMNHTAU P.2578 (1), Red Sea?; SMNS 1003 (4), Nice, France; SMNS 1673 (1), Alicante, Spain; SMNS 9186 (1), Mallorca, Baleares, Spain; SMNS 9196 (1), Mallorca, Baleares, Spain; SMNS 9407 (1), Menorca, Baleares, Spain; SMNS 9450 (1), Osor, Cres, Croatia; SMNS 9610 (3), Varkiza, Greece, SMNS 9613 (1), Varkiza, Greece; SMNS 9879 (2), Varkiza, Greece; SMNS 10044 (3), Porto Santo Stefano, Toscana, Italy; SMNS 10055 (6), Porto Santo Stefano, Toscana, Italy; SMNS 11519 (1), Bodrum, Muğla, Turkey; SMNS 11531 (1), Bodrum, Muğla, Turkey; SMNS 11534 (1), Bodrum, Muğla, Turkey; SMNS 11583 (2), Greece, Varkiza; SMNS 16399 (1), Beirut, Lebanon; SMNS 16696 (1), Karataş, Adana, Turkey; SMNS 16697 (1), Karataş, Adana, Turkey; SMNS 19044 (1), Girne, Northern Cyprus; SMNS 19046 (11), Girne, Northern Cyprus; SMNS 19056 (12), Girne, Northern Cyprus; SMNS 19062 (6), Girne, Northern Cyprus; SMNS 19078 (3), Girne, Northern Cyprus; SMNS 19099 (23), Girne, Northern Cyprus; SMNS 19209 (1), Mallorca, Baleares, Spain; SMNS 20360 (1), Tabarka, Tunisia; SMNS 24887 (1), Paradise Bay, Malta; SMNS 24896 (4), Paradise Bay, Malta; SMNS 24904 (2), Paradise Bay, Malta; SMNS 25514 (4), Monaco; SMNS 25515 (2), Palermo, Sicily, Italy; SMNS 25517 (1), Venice, Italy; SMNS 25518 (4), Venice, Italy.

TAXONOMY

Scorpaena decemradiata n. sp.
(Fig. 1, Table 1)

Scorpaena porcus (non Linnaeus 1758): Frøiland 1972: 23 (Eilat, Israel, Gulf of Aqaba, Red Sea; based on HUJ 2418). Dor 1984: 82 (part). Goren and Dor 1994: 22 (part).

Holotype: HUJ 2418, 123.1 mm SL, Red Sea, Gulf of Aqaba, Israel Eilat, Y. Berens, Sept. 1960.
Paratype: HUJ 20671, 1 specimen, 95.0 mm SL, Red Sea, Gulf of Aqaba, Israel Eilat, Y. Berens, Sept. 1960.

Diagnosis. A species of *Scorpaena* with dorsal fin spines XII, soft dorsal fin rays 10 (the last divided at base); pectoral fin rays 16, uppermost branched pectoral fin ray is the second; lacrimal with 2 spines over maxilla that point at nearly right angle from each other, the posterior pointing ventrally and slightly anteriorly; occipital pit well developed; anteriormost mandibular lateral-line pores small, separated; scales ctenoid; 59-62 scale rows in longitudinal series; scales absent on chest and pectoral fin base; and cirri developed over entire head and body, but no cirri on lower jaw.

Description. Dorsal fin-ray formula XII, 10 (XII, 10). Anal fin-ray formula III, 5 (III, 5). Pectoral fin-ray formula, all elements, 16 (16), upper 2nd-7th (2nd-7th) branched. Gill rakers 5+12, total 17 (4+12, total 16) on first gill arch.

Fig. 1. – *Scorpaena decemradiata* n. sp., HUJ 2418, holotype, 123.1 mm SL, Red Sea, Gulf of Aqaba, Israel, Eilat, 1960. Lateral view; photograph of the colouration in preservative taken 56 years after collection (Photograph: D. Golani).

Selected body proportions and counts, included in Table 1, are part of the description.

Body scaled; scales ctenoid. Chest, pectoral fin base and head naked. Predorsal scales 5 (6). Preorbital bone usually with 2 (2) spinous points over maxillary forming about a right angle; posterior spine pointing forward. Occipital pit present, well developed. Suborbital ridge with 3 (2-3) spinous points; first below ridge which runs under eye, second at end of this ridge, and third just before supplemental preopercular spine. Upper posttemporal spine present. Interorbital ridges present, diverging at rear. Supraorbital tentacle at most half of orbit diameter. Few small dermal flaps associated with preorbital, preocular, parietal, nuchal and preopercular spines; other tentacles at anterior nostril, below suborbital ridge, on eye, opercle flap, some body scales, and some pored lateral-line scales. Pores at symphysis small, separate. Lateral line a shallow convex curve from its origin to caudal fin base, with 29 (30) pored scales. Scale rows in longitudinal series 62 (59), vertical scale rows 53 (48). Maximum observed standard length 123 mm.

Colour in alcohol. For pigmentation of body refer to Figure 1, which is part of the description.

Head and body reddish brown, back with five indistinct darker saddles that continue irregularly across the upper two-thirds of the body. Head reddish brown; eye dark grey. Pectoral fin base and belly white. Dorsal fin marbled with brown, without a black blotch. Pectoral fins pale, with series of dark brown spots in their upper two-thirds. Pelvic fins pale. Anal fin light brown, with a central and a distal posterior bar of dark brown spots. Caudal fin whitish, with a basal, a central and a distal vertical dark brown bar.

Etymology. *Decem* (Latin) means ten; *radiata* (Latin) means rayed. The name refers to the ten soft rays in the dorsal fin of the new species, which clearly distinguish it from the closely related species, *S. porcus*.

Table 1. – Selected counts and body proportions of *Scorpaena decemradiata* new species; proportions expressed as percentage of standard length unless otherwise stated.

Range	Red Sea HUJ 2148, holotype (123.1 mm SL)	Red Sea HUJ 20671, paratype (1) (90.5 mm SL)
Counts:		
Dorsal fin spines	XII	XII
Dorsal fin soft rays	10	10
Anal fin spines + soft rays	III + 5	III + 5
Pectoral fin rays	16	16
Uppermost branched pectoral fin ray	2nd	2nd
Lowermost branched pectoral fin ray	7th	6th
Pored lateral-line scales	29	30
Scale rows in longitudinal series	62	59
Vertical scale rows	53	48
Circumpeduncular scales	42	40
Gill rakers (total)	17	16
Gill rakers on upper arch	5	4
Spines on suborbital ridge	3	2-3
Pectoral fin reaching to level of	anus	anus
Proportions:		
Body depth	41	41
Head length	44	42
Horizontal eye diameter	11	12
Tip of snout to dorsal fin origin	35	36
Tip of snout to anal fin origin	69	71
Tip of snout to dorsal fin insertion	73	73
Tip of snout to anal fin insertion	75	70
Tip of snout to pectoral fin origin	38	38
Tip of snout to pelvic fin origin	41	38
Snout in orbit diameter	1.2	1.4
Orbit diameter in head length	4.0	3.5
Interorbital distance in orbit diameter	1.8	1.6
Dorsal fin origin to caudal fin base	75	75
Anal fin origin to caudal fin base	38	39
Pectoral fin origin to caudal fin base	68	66
Length of dorsal fin base	62	63
Length of anal fin base	16	18
Length of pectoral fin base	16	15
Length of pectoral fin	29	32
Length of pelvic fin	26	29
Length of pelvic fin spine	13	15
Dorsal fin insertion to caudal fin base	32	32
Anal fin insertion to caudal fin base	30	33
Least depth of caudal peduncle	12	12

Distribution and habitat. Known only from the Gulf of Aqaba (Eilat, Israel) (Fig. 2). The depth of collection and the habitat are unknown.

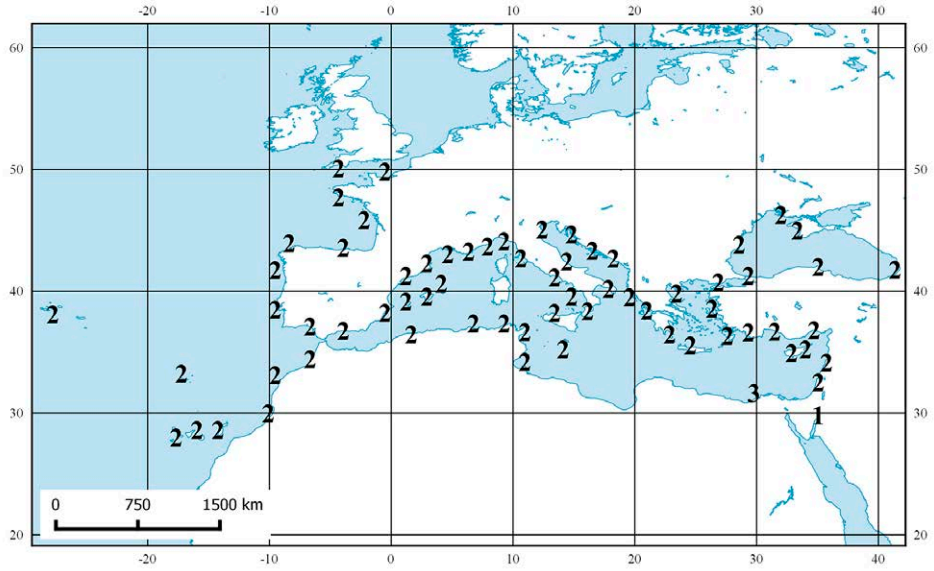

Fig. 2. – Geographical distribution of the *Scorpaena decemradiata* n. sp. and *S. porcus* Linnaeus, 1758 in the eastern Atlantic, Mediterranean Sea and Red Sea. 1, *S. decemradiata* n. sp., type locality; 2, *S. porcus*; 3, *S. porcus* (probable lectotype locality of *S. erythraea*).

Table 2. – Comparison *Scorpaena decemradiata* n. sp. and *S. porcus*; proportions expressed as percentage of standard length unless otherwise stated. Differences of *S. porcus* compared with *S. decemradiata* n. sp. are printed in bold face.

	Scorpaena decemradiata n. sp.	*S. porcus*
Dorsal fin spines	XII	XII
Dorsal fin rays	10	**7-9**
Anal fin spines + rays	III, 5	III, 4-5
Pectoral fin rays	16	16-18
Uppermost branched pectoral fin ray	2nd	**usually 3rd**
Lateral scale rows	59-62	56-60
Vertical scale rows	48-53	51-58
Circumpeduncular scales	40-42	32-40
Body scales	ctenoid	**emarginate, without distinct ctenii**
Gill rakers on upper arch	4-5	5-6
Body depth	41	**34-40**
Tip of snout to pectoral fin origin	38	**39-45**
Tip of snout to pelvic fin origin	38-41	40-48
Orbit diameter in head length	3.5-4.0	3.7-4.3
Length of pectoral fin base	15-16	12-15

Comparisons. Scorpaena decemradiata n. sp. is very similar to *S. porcus* from the Mediterranean Sea and eastern Atlantic; these two species are distinguished from other congeners by the following combination of characters: presence of a deep occipital pit, pectoral fin base naked, lateral-line pores immediately posterior to symphysis of lower jaw widely separate, and more than 56 scale rows in longitudinal series. The new species is distinguished from *S. porcus* (see Table 2) by 10 dorsal fin soft rays (versus 7-9 in *S. porcus*), scales on body ctenoid (versus emarginate), and uppermost branched pectoral fin ray is the second (versus usually third, rarely second to fourth).

An identification key to the species of *Scorpaena* in the eastern Atlantic, Mediterranean and Red Sea is presented below, in order to easily identify this species.

In the Red Sea, the new species might be confused with *Parascorpaena aurita* (Rüppell, 1829), which among other characters, however, only has 8-9 dorsal fin soft rays (versus 10 in *Scorpaena decemradiata* n. sp.), and larger scales, with only 35-44 scale rows in longitudinal series (versus 59-62 in *Scorpaena decemradiata* n. sp.).

Scorpaena porcus Linnaeus, 1758
(Figs 3-4, Table 3)

Scorpaena erythraea Cuvier in Cuvier and Valenciennes 1829: 316 (Egypt, Red Sea; locality probably in error). Günther 1860: 116. Klunzinger 1870: 803. Klunzinger 1884: 70. Fowler and Steinitz 1956: 281. Smith 1957: 51 (uncertain identity; locality in error).
Scorpaena porcus: Dor 1984: 82 (part). Eschmeyer and Dempster 1990: 674-675 (part: synonymy of *S. erythraea*, type locality allegedly incorrect). Goren and Dor 1994: 22 (part). Golani and Bogorodsky 2010: 65 (Red Sea record incorrect, based on misidentifications).
Scorpaena klausewitzi: Frøiland 1972: 25 (Eilat, Israel, Gulf of Aqaba, Red Sea; based on SMNHTAU 2578; locality in error; nomen nudum, appeared in an unpublished doctoral thesis).
Scorpaenopsis erythraea: Frøiland 1972: 72 (Red Sea, locality in error).
Additional synonymy is provided in the checklist below.

Diagnosis. A species of *Scorpaena* with dorsal fin spines XII, soft dorsal fin rays 7-9 (the last divided at base); pectoral fin rays 16-18, uppermost branched pectoral fin ray is usually the third (rarely second to fourth); lacrimal with usually 2 spines over maxilla that point at nearly right angle from each other, the posterior pointing ventrally and slightly anteriorly; occipital

Fig. 3. – *Scorpaena porcus* Linnaeus, 1758, HUJ 12258, 153 mm SL, Jaffa, Israel, Mediterranean Sea, 23 Apr. 1987. Lateral view; photograph of the fresh colouration taken a few hours after collection (Photograph: D. Darom).

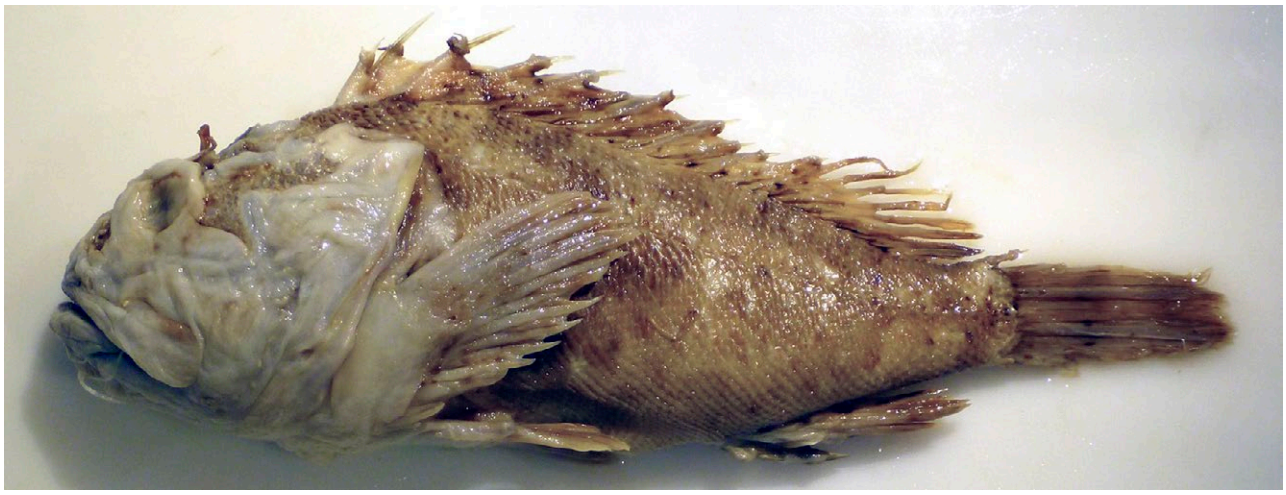

Fig. 4. – *Scorpaena porcus* Linnaeus, 1758, MNHN 0000-6706, lectotype of *Scorpaena erythraea* Cuvier in Cuvier and Valenciennes, 1829, specimen 1, 154.7 mm SL, Egypt, Red Sea/probably erroneous, Mediterranean Sea, Alexandria, 1798-1799. Lateral view; photograph of the colouration in preservative taken ca. 218 years after preservation.

pit well developed; anteriormost mandibular lateral-line pores widely separated; scales small, emarginate, without distinct ctenii; 56-60 scale rows in longitudinal series; scales absent on chest and pectoral fin base; cirri well developed over entire head and body, but no cirri on lower jaw.

Distribution and habitat. Mediterranean Sea, Black Sea, eastern Atlantic: British Isles to Morocco including Azores and Canary Islands (Fig. 2). The species dwells benthic habitats, from shallow water to 800m depth, in the shallows usually on rocks covered with algae.

DISCUSSION

Scorpaena erythraea was originally described by Cuvier in Cuvier and Valenciennes (1829: 316), based on three specimens collected by Étienne Geoffroy Saint-Hilaire in Egypt. Geoffroy Saint-Hilaire's fish material was collected during the French expedition to Egypt in 1798-1799; in 1799, the material was transported to Alexandria, Egypt, and when Alexandria was conquered by British troops, Geoffroy Saint-Hilaire refused to hand over the materials and documents to the British General Hutchinson, and later sent the material to Paris (Bauchot et al. 1990: 88). The specimens were neither described nor illustrated in the works of Étienne and Isidore Geoffroy Saint-Hilaire (1802a, 1802b, 1809, 1817, 1827a, 1827b).

The species was subsequently reported by several authors based on Cuvier in Cuvier and Valenciennes (1829); only Günther (1860: 116) described an additional specimen from the Red Sea (BMNH 1871.4.13.26). This specimen, as well as another specimen identified

Table 3. – Selected counts and body proportions of Mediterranean specimens of *Scorpaena porcus* Linnaeus, 1758; proportions expressed as percentage of standard length unless otherwise stated. Number of specimens in parentheses.

Range	Eastern Mediterranean (?): MNHN 0000-6706 (2 syntypes of *Scorpaena erythraea*; larger specimen designated as lectotype, see above)	Eastern Mediterranean: HUJ 4962 (1), 5315 (1), 12258 (1), 14139 (2), 14223 (2), 14555 (1), 14591 (1), 14573 (4), 14674 (1), 19126 (2), 19129 (3), 19394 (1), HUJ 19437 (1), SMNHTAU P2578 (1) (53.1-154.1mm SL; n=22)	Western Mediterranean: BMNH 1938.11.15. 50 (1), BMNH 1960. 6.24.145-149 (5), BMNH 1963.5.14. 655 (1), HUJ 12060 (1), HUJ 17860 (1), HUJ 20823 (5), SMF 35951 (9) (74.5-171.7mm SL; n=23)
Counts:			
Dorsal fin spines	XII	XII	XII
Dorsal fin soft rays	9 (2)	8 (1), 9 (20)	7 (1), 9 (23)
Anal fin spines + soft rays	III + 4 (1), III + 5 (1)	III + 5 (20), III + 6 (1)	III + 4 (1), 5 (23)
Pectoral fin rays	16 (3), 17 (1)	16 (12), 17 (20), 18 (1)	16 (23), 17 (18), 18 (5)
Uppermost branched pectoral fin ray	3rd (4th)	2nd (1), 3rd (32), 4th (1)	2nd (11), 3rd (32), 4th (3)
Lowermost branched pectoral fin ray	7th-8th	5th-8th	5th-7th
Pored lateral-line scales	18-31	28-31	28-30
Scale rows in longitudinal series	56-57	56-60	56-60
Vertical scale rows	52-53	51-58	51-58
Circumpeduncular scales	34-36	32-38	34-40
Gill rakers (total)	16	16-17	16-18
Gill rakers on upper arch	5	5- 6	5- 6
Spines on suborbital ridge	?	2- 3	2- 3
Pectoral fin reaching to level of	anus – 2nd anal spine	anus - 2nd or 3rd anal spine	anus - 2nd anal spine
Proportions:			
Body depth	36-37	36-44	34-40
Head length	42-44	42-47	42-47
Horizontal eye diameter	11	10-13	10-13
Tip of snout to dorsal fin origin	34	35-39	35-39
Tip of snout to anal fin origin	58-74	69-74	67-76
Tip of snout to dorsal fin insertion	71-73	72-79	67-72
Tip of snout to anal fin insertion	76-79	75-80	73-82
Tip of snout to pectoral fin origin	39	40-42	39-45
Tip of snout to pelvic fin origin	40-41	42-44	41-48
Snout in orbit diameter	1.1-1.3	1.2-1.7	1.0-1.4
Orbit diameter in head length	3.7-3.9	3.7-4.3	3.7-4.4
Interorbital distance in orbit diameter	1.5-1.8	1.0-1.8	1.3-2.1
Dorsal fin origin to caudal fin base	70-75	70-80	70-74
Anal fin origin to caudal fin base	34-35	35-39	33-37
Pectoral fin origin to caudal fin base	60-65	63-69	62-67
Length of dorsal fin base	60-64	56-64	57-63
Length of anal fin base	14-17	15-18	15-22
Length of pectoral fin base	12-13	14-15	14-17
Length of pectoral fin	29-31	29-34	28-30
Length of pelvic fin	26-31	25-30	23-27
Length of pelvic fin spine	12-17	14-17	11-16
Dorsal fin insertion to caudal fin base	30-32	30-33	30-33
Anal fin insertion to caudal fin base	29-30	27-32	26-33
Least depth of caudal peduncle	11	10-12	10-12

as *Scorpaena erythraea* (non Cuvier in Cuvier and Valenciennes 1829), turned out to be based on misidentified *Parascorpaena aurita* (Rüppell 1829). Smith (1957: 51) erroneously reported *Scorpaena erythraea* from Mauritius.

Eschmeyer and Dempster (1990: 674-675) were the first authors to discuss the identity of *S. erythraea*; they noticed that the species was probably identical with *S. porcus* Linnaeus 1758, and supposed that the type locality of *S. erythraea* was incorrect and the species was rather collected on the Mediterranean Sea shore of Egypt. This suspicion was followed by subsequent authors. Golani and Bogorodsky (2010: 65) treated the Red Sea record of *S. porcus* as incorrect, and suggested that it was based on misidentifications. A confusion of the localities of material collected by Geoffroy Saint-Hilaire is highly likely, as the material was apparently not labelled originally, but subsequently after it arrived at Paris. There were just three major collecting localities of that expedition, the Nile, the Mediterranean Sea at Alexandria, and the Red Sea coast of Egypt. Assigning the locality was straightforward for freshwater fishes, and not a problem for material with manuscript notes by Geoffroy Saint-Hilaire, which could be easily identified, but for the other material which was not mentioned by Geoffroy Saint-Hilaire, the locality had to be guessed. The present study confirms the identity of the syntypes of *Scorpaena erythraea* Cuvier in Cuvier and Valenciennes, 1829 as conspecific with *Scorpaena porcus* Linnaeus, 1758, and the highly probable confusion of the type locality. All the characters examined agree well with eastern Mediterranean populations of *S. porcus* (see Table 3). The syntypes of *S. erythraea* (MNHN 0000-6706) were most probably collected near Alexandria, Egypt. The larger specimen (154.7 mm SL; Fig. 4, Table 2) of MNHN 0000-6706 is hereby designated as the lectotype of *Scorpaena erythraea* Cuvier in Cuvier and Valenciennes, 1829.

While we thus conclude that *Scorpaena erythraea* is a junior synonym of *S. porcus* and based on Mediterranean material, another specimen allegedly originating from the Gulf of Aqaba, Red Sea, SMNHTAU 2578,

remains dubious. It was named *Scorpaena klausewitzi* in the unpublished doctoral dissertation by Frøiland (1972: 25), and then again referred to as *Scorpaenopsis erythraea* (see Frøiland 1972: 72). The former is a manuscript name that was supposed to be published but never was as the manuscript was first submitted to and then withdrawn from the journal *Senckenbergiana biologica*. However, the specimen also clearly belongs to *S. porcus*, and the locality is most probably in error, i.e. the specimen probably originated from the Mediterranean coast of Israel.

Frøiland (1972: 23) also recorded *Scorpaena porcus* (non Linnaeus, 1758) from Eilat, Israel, based on two specimens numbered HUJ 2418; these are the only specimens that were really collected in the Red Sea and belong to the *Scorpaena porcus* complex, but were found to represent *S. decemradiata* n. sp., which is described in the present paper.

Summarizing these results, *Scorpaena porcus* was previously thought to be a case of anti-Lessepsian migration, but is obviously restricted to the eastern Atlantic and Mediterranean, and previous records from the Red Sea were based on material with incorrect localities or misidentifications. The Red Sea (Gulf of Aqaba) is inhabited by the closely related species *S. decemradiata* n. sp. This species has not yet been recorded from Jordan (Khalaf and Zajonz 2007).

An updated checklist of the species of the genus *Scorpaena* is presented here (Appendix 1). It now includes a total of 62 valid species. Most species are known from the eastern Atlantic, including the Mediterranean (18 species, which is 29.0% of the total species of the genus; 15 species or 24.2% are endemic to the region), followed by the eastern Pacific (14 species, 22.6%, all endemic) and the western Atlantic (14 species, 22.6%, with 12 species endemic, 19.4%), the western Pacific (12 species, 19.4%; 8 endemic, 12.9%), the eastern Indian Ocean (5 species, 8.1%; 2 endemic, 3.2%), the central Pacific (3 species, 4.8%; all endemic), the Red Sea (1 endemic species, 1.6%), and the western Indian Ocean (1 species, 1.6%; none endemic). From the Red Sea, *S. decemradiata* n. sp. is the only known species of this genus; it is probably endemic to the northern Red Sea, because it is not present in the German deep-sea expeditions to the central Red Sea, MESEDA I–III and MINDIK (Türkay 1996; fish identifications and an unpublished faunal account by Uwe Zajonz).

As only two specimens of *Scorpaena decemradiata* n. sp. are known, little can be said about intraspecific variation. The intraspecific variation between specimens of *S. porcus* in the central Mediterranean Sea and the Black Sea was examined by Manilo and Peskov (2016), who found some significant differences for some length proportions between specimens in the two regions. Boissin et al. (2016) examined the population genetics of this species, and also found a weak genetic differentiation between populations in the Black Sea and the Mediterranean Sea. In the present study, western and eastern Mediterranean populations of *S. porcus* are compared (see Table 3), with no significant differences in fin-ray counts and scales, but again some differences in length proportions. We could not determine whether there are clines or rather a strict separation between the populations, but doubt that these differences are of taxonomic significance.

The restricted range of *Scorpaena decemradiata* n. sp. may be a relict distribution; the *Scorpaena porcus* complex that prefers a warm temperate climate may have had a wider distribution range during glacial periods, possibly all around the African continent, like *S. scrofa*. In this scenario, the *S. porcus* complex retreated to the north on both sides of the continent when the sea temperatures became warmer, but only on the western side was there room to spread out, while on the eastern side it was limited to the northernmost extent of the Red Sea in the Gulf of Aqaba. The subsequent continental barrier then facilitated speciation in this group, resulting in two different species on the western and eastern sides of the continent.

Key to eastern Atlantic, Mediterranean and Red Sea species of the genus *Scorpaena*

Remark. This key is based on Poss (2016), but updated and expanded to cover the Red Sea species.

1 – Pit or depression in occiput shallow or absent .. 2
– A deep pit or depression in occiput (somewhat intermediate in *Scorpaena elongata*)..... 5

2 – Chest (area anterior to pelvic fin) naked, without scales; membranes between dorsal spines 2 to 4 deeply incised more than half length of spine and nearly to base of fin in some specimens .... *S. normani*
– Chest with scales (sometimes deeply embedded and difficult to see); membranes between dorsal spines 2 to 4 incised about half length of spines or less 3

3 – Suborbital ridge smooth, without spines; a shallow occipital pit; pectoral fin rays 20 .... *S. ascensionis*
– Suborbital ridge with 1 or 2 small spines; no occipital pit; pectoral fin rays 15 to 18..... 4

4 – Posterior lacrimal (preorbital) spine points anteriorly; second preopercular spine from above small, smaller than third and fourth below; 66 to 69 scales in longitudinal row above lateral line; no white specks in axil (inner surface) of pectoral fin .... *S. canariensis*
– Posterior lacrimal (preorbital) spine points posteroventrally; second preopercular spine from above small, large, equal to or larger than third and fourth below; 52 to 56 scales in longitudinal row above lateral line; white specks in axil of pectoral fin..... .....*S. maderensis*

5 – Base of pectoral fin and chest scaled; scales on flank cycloid 6
– Base of pectoral fin naked, without scales (or with a few small deeply embedded scales); scales

on flank ctenoid (or emarginate in *S. porcus*) 8

6 – Fewer than 50 scales in lateral row behind supracleithral spine to base of caudal fin 7
– More than 60 scales in lateral row behind supracleithral spine to base of caudal fin ..... *S. mellissii*

7 – Medial surface of pectoral fin and pectoral axil with large brown spots on a relatively pallid background..... *S. laevis*
– Medial surface of pectoral fin and pectoral axil black, with large white spot..... *S. plumieri*

8 – Lateral-line pores immediately posterior to symphysis of lower jaw fused into a single median pore that is usually readily visible. 9
– Lateral-line pores immediately posterior to symphysis of lower jaw widely separate, although at times minute (*S. decemradiata* n. sp., *S. scrofa*) and difficult to locate..... 12

9 – Maxilla with a ridge that runs along its length ..... *S. loppei*
– Maxilla without ridge running along its length ..10

10 – A distinct, large spot on spinous dorsal fin between spines 6 and 9 (although sometimes more restricted); pectoral fin, soft part of dorsal fin and anal fin without numerous small, but distinct spots; spots when present on caudal fin confined primarily to fin rays..... 11
– No distinct, large spot on spinous dorsal fin between spines 6 and 9; pectoral fin, soft part of dorsal fin, and anal fin with numerous small, but distinct spots; spots on caudal fin confined primarily to fin membranes.....*S. azorica*

11 – Dorsal soft rays usually 9 (last double); posteriormost lacrimal (preorbital) spine points ventrally or slightly to rear (not present or less distinct in juveniles) ..... *S. angolensis*
– Dorsal soft rays 10 (last double); posterior lacrimal spines strongly curved to rear (may be less distinct or absent in juveniles)..... *S. annobonae*

12 – More than 56 scale rows in longitudinal series (counted from immediately behind supracleithral spine to base of caudal fin)..... 13
– Fewer than 51 scale rows in longitudinal series (counted from immediately behind supracleithral spine to base of caudal fin)..... 14

13 – Dorsal fin soft rays 7-9; scales on body emarginate, without distinct ctenii (small spines at posterior margin of scale); uppermost branched pectoral fin ray is usually the third (occasionally the second to fourth)..... *S. porcus*
– Dorsal fin soft rays 10; scales on body ctenoid; uppermost branched pectoral fin ray is the second . ..... *S. decemradiata* n. sp.

14 – Numerous cutaneous flaps and cirri on ventral side of head.....*S. scrofa*
–Ventral surface of head without flaps or cirri... 15

15 – Spinous part of dorsal fin without a black spot; pectoral fin rays usually 19 (sometimes 18)..... ..... *S. elongata*
– Spinous part of dorsal fin with a distinct black spot; pectoral fin rays usually 17 or 18, rarely 19..... 16

16 – More than 20 rows of scales anterior to anus at ventral midline; orbit diameter smaller than snout (ratio of snout/orbit 0.8 to 1.2), except in small specimens ..... *S. stephanica*
– Fewer than 20 rows of scales anterior to anus at ventral midline; orbit diameter slightly larger than snout (ratio of snout/orbit 0.9 or less) ..... *S. notata*

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Appendix 1. – Checklist of the species of the genus *Scorpaena* Linnaeus, 1758.

Species	Original description	Type locality	Primary type(s)	Junior synonym(s)	Geographical distribution
S. afuerae Hildebrand, 1946	Hildebrand 1946: 443, fig. 85	Lobos de Afuera Island, Peru	Holotype: USNM 128130		E Pacific: Costa Rica to Peru and Cocos Island
S. agassizii Goode and Bean, 1896	Goode and Bean 1896: 247, pl. 67 (fig. 243)	Gulf of Mexico, 23°13'N 89°10'W	Holotype: MCZ 27996		W Atlantic: North Carolina (USA) and Gulf of Mexico south to N Brazil
S. albifimbria Evermann and Marsh, 1900	Evermann and Marsh 1900: 275, fig. 82	off Culebra Island, southwest of Culebritas Lighthouse, Puerto Rico	Holotype: USNM 49532		W Atlantic: Florida (USA) and Bahamas south to Netherlands Antilles
S. angolensis Norman, 1935	Norman 1935: (26) 28, fig. 10	Elephant Bay, Angola	Holotype: BMNH 1910.2.24.1		E Atlantic: Mauritania to Angola, including Cape Verde Islands
S. annobonae Eschmeyer, 1969	Eschmeyer 1969: 75, Fig. 8c	Annobón Island, Equatorial Guinea, Gulf of Guinea, 1°24'N, 5°38'E	Holotype: CAS 14214		E Atlantic: Annobón Island
S. ascensionis Eschmeyer, 1971	Eschmeyer 1971: 503, fig. 1	Ascension Island	Holotype: BMNH 1935.5.2.33		SE Atlantic: at Ascension Island
S. azorica Eschmeyer, 1969	Eschmeyer 1969: 80, fig. 8a	Terceira, Azores	Holotype: USNM 94463		NE Atlantic: Azores Islands
S. bergii Evermann and Marsh, 1900	Evermann and Marsh 1900: 276, fig. 83	Mayaguez, Puerto Rico	Holotype: USNM 49533		W Atlantic: New York (USA) and Bermuda south to northern Brazil
S. brachyptera Eschmeyer, 1965	Eschmeyer 1965: 111, figs 7a-b	off Venezuela, 10°50'N, 66°55'W	Holotype: USNM 198153		W Atlantic: Florida (USA) south to Panama and Venezuela
S. brasiliensis Cuvier in Cuvier and Valenciennes, 1829	Cuvier in Cuvier and Valenciennes 1829: 305	Brazil	Syntypes: MNHN 0000-6672 (1), 0000-6688 (1), 0000-7300 (1, dry); ZMB 747 (1)	– *S. stearnsii* Goode and Bean, 1882: 421. – *S. colesi* Nichols, 1914: 537, fig. 1.	W Atlantic: Virginia (U.S.A.) and Gulf of Mexico south to northern Brazil
S. brevispina Motomura and Senou, 2008	Motomura and Senou 2008: 1762, figs. 1-5	off Futo, Ito City, Shizuoka, Japan, 34°52'N, 139°08'E	Holotype: KPM-NI 16667		NW Pacific: Izu Peninsula, Japan
S. bulacephala Motomura, Last and Yearsley, 2005	Motomura et al. 2005: 19, figs. 1-3	south of Norfolk Island, Norfolk Ridge, 28°54'-55'S, 167°40'-41'E	Holotype: CSIRO H 6009-05		SW Pacific: Norfolk Island and Lord Howe Island, New Caledonia, Vanuatu
S. calcarata Goode and Bean, 1882	Goode and Bean 1882: 422	Clearwater Harbor, Florida, USA	Holotype: USNM 23556	– *S. russula atlantica* Nichols and Breder, 1924: 21, pl. 7.	W Atlantic: South Carolina (U.S.A.) and Gulf of Mexico south to northern Brazil
S. canariensis (Sauvage, 1878)	Sauvage 1878: 117, pl. 1 (figs. 1-2), as *Sebastes canariensis*	Canary Islands	Holotype: MNHN 0000-7031	– *S. patriarcha* Berthelot [ex Valenciennes], 1840:120 (not available, name only)	E Atlantic: Canary Islands, Madeira and Azores
S. cardinalis Solander and Richardson in Richardson, 1842	Solander and Richardson in Richardson 1842b: 212	White Island, New Zealand, 37°30'S, 177°09'E	Neotype: NMNZ P.044152	– *S. plebeia* Solander and Richardson in Richardson, 1842: 214. – *S. cookii* Günther, 1874: 78, pl. 55	SW Pacific: New Zealand to Lord Howe, Norfolk and Kermadec islands
S. cocosensis Motomura, 2004	Motomura 2004: 819, figs. 1-3	off Nuez Island, Cocos Island, 5°34'00"N, 86°59'20"W	Holotype: CAS 219506		E Pacific: Galapagos Archipelago and Cocos Island
S. colorata (Gilbert, 1905)	Gilbert 1905: 627, fig. 243	S of Molokai, Hawaiian Islands	Holotype: USNM 51631		Central Pacific: Hawaiian Islands to Johnston Atoll
S. decemradiata n. sp.	Present paper				Red Sea, Gulf of Aqaba

Appendix 1 (cont.). – Checklist of the species of the genus *Scorpaena* Linnaeus, 1758.

Species	Original description	Type locality	Primary type(s)	Junior synonym(s)	Geographical distribution
S. dispar Longley and Hildebrand, 1940	Longley and Hildebrand 1940: 246, fig. 12	S of Tortugas, Florida, USA	Holotype: USNM 108867	– *S. similis* Gunter, 1948: 161, pl. 1.	W Atlantic: South Carolina (USA) and Gulf of Mexico south to northern Brazil
S. elachys Eschmeyer, 1965	Eschmeyer 1965: 114, fig. 7c	N of Puerto Rico, 18°15'N, 67°33'W	Holotype: USNM 198149		W Atlantic: Florida (U.S.A.) south to Panama
S. elongata Cadenat, 1943	Cadenat 1943: 552, figs. 1(4), 9	Cap Blanc, Mauritania	Syntypes: MHNLR P.798 (2)		E Atlantic: Morocco to Namibia; Mediterranean Sea
S. fernandeziana Steindachner, 1875	Steindachner 1875: 451 [9], pl. 1 (figs. 1, 1a)	Juan Fernández Islands	Holotype: whereabouts unknown		SE Pacific: Juan Fernández and Desaventurados islands
S. gasta Motomura, Last andYearsley, 2006	Motomura et al. 2006: 361, figs. 1-3	Kalbarri, Western Australia, 27°30'S, 114°25'E	Holotype: WAM P.27960-006		SE Indian Ocean: Western Australia
S. grandicornis Cuvier in Cuvier and Valenciennes, 1829	Cuvier in Cuvier and Valenciennes 1829: 309, pl. 86	Martinique Island, West Indies; Puerto Rico; Havana, Cuba; Santo Domingo	Syntypes: MNHN 0000-6681 (1), 0000-6689 (1), 0000-6900 (1); SMF 440 (1); ZMB 752 (1)		W Atlantic: Bermuda and Florida (USA) south to southern Brazil; S Atlantic: St. Helena and Ascension
S. grandisquamis Ogilby, 1910	Ogilby 1910: 107	North West Islet, Capricorn Group, Queensland, Australia	Holotype: AMS E.1418		SW Pacific: Queensland (Australia)
S. grattanica Trunov, 2006	Trunov 2006: 472, fig. 2	Grattan Bank, near Ascension Island, 9°46'S, 12°48'W	Holotype: ZIN 52148		S Atlantic: Grattan Bank near Ascension Island
S. guttata Girard, 1854	Girard 1854: 145	Monterey, California, USA	Holotype: USNM 350	– *S. guadalupae* Fowler, 1944: 429, figs. 217-218. – *S. microlepis* Gunter, 1948: 162, pl. 2.	E Pacific: central California (USA) to Gulf of California (Mexico)
S. hemilepidota Fowler, 1938	Fowler 1938: 63, fig. 26	off Tubig Point, between Samar and Masbate, Philippines, 12°12'35"N, 124°02'48"E	Holotype: USNM 98884		W Pacific: Philippines
S. histrio Jenyns, 1840	Jenyns 1840: 35, pl. 8	San Cristóbal Island (Chatham Island), Galápagos Islands	Syntypes: BMNH 1917.7.14.73, 1917.7.14.74 (1)	– *S. fucata* Valenciennes, 1846: Pl. 3 (fig. 2). – *S. pannosa* Cramer in Gilbert, 1897: 446, pl. 52	E Pacific: Baja California (Mexico) S to Chile and some offshore islands, including the Galápagos Islands
S. inermis Cuvier in Cuvier and Valenciennes, 1829	Cuvier in Cuvier and Valenciennes 1829: 311	Martinique Island, West Indies	Holotype: MNHN 0000-0693	– *S. occipitalis* Poey, 1860: 171. – *S. mercatoris* Delsman, 1941: 74, fig. 11. – *S. luckei* Fowler 1941: 87, figs. 1-2.	W Atlantic: Florida (USA) and Bahamas south to Dutch West Indies
S. isthmensis Meek and Hildebrand, 1928	Meek and Hildebrand 1928: 842, pl. 80	Porto Bello, Panama, Caribbean Sea	Holotype: USNM 81617		W Atlantic: Panama south to Rio de Janeiro (Brazil)
S. izensis Jordan andStarks, 1904	Jordan andStarks 1904: 134, fig. 10	Suruga Bay, Japan	Holotype: USNM 50909		SE Indian Ocean and W Pacific: Western Australia north to S Japan
S. jacksoniensis Steindachner, 1866	Steindachner 1866: 50	Port Jackson, New South Wales, Australia	Holotype: NMW 75379		SW Pacific: Queensland to Victoria (Australia)

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Appendix 1 (cont.). – Checklist of the species of the genus *Scorpaena* Linnaeus, 1758.

Species	Original description	Type locality	Primary type(s)	Junior synonym(s)	Geographical distribution
S. lacrimata Randall and Greenfield, 2004	Randall and Greenfield 2004: 391, fig. 3	Tahiti, Society Islands	Holotype: BPBM 31706		S Pacific: Society Islands
S. laevis Troschel, 1866	Troschel 1866: 206	Cape Verde Islands	Holotype: NMW 5632	– *S. senegalensis* Steindachner, 1881a: 150; Steindachner 1881b: 31, pl. 4	E Atlantic: Azores and Madeira S to Gulf of Guinea; Cape Verde Islands
S. loppei Cadenat, 1943	Cadenat 1943: 541, figs. 1(3), 3	Gulf de Gascogne, France	Syntypes: MHNLR P.797 (4); MNHN 1947-0002 to 0003 (2), 1887-0305 to 0306 (2), 1887-0307 to 0308 (2), 1887-0310 (1)		Mediterranean Sea, E Atlantic: Bay of Biscay south to Western Sahara
S. maderensis Valenciennes in Cuvier and Valenciennes, 1833	Valenciennes in Cuvier and Valenciennes 1833: 463 (as *S. madurensis*)	Madeira	Syntypes: MNHN 0000-6682 (4), 0000-6683 (4)	– *S. rubellio* Jordan and Gunn, 1898: 344.	Mediterranean Sea, E Atlantic: Morocco to Senegal including Azores, Madeira, Canary and Cape Verde islands
S.melasma Eschmeyer, 1965	Eschmeyer 1965: 109, fig. 6c	off Brazil, 2°10'S, 41°33'W	Holotype: USNM 198154		SW Atlantic: off Brazil
S. mellissii Günther, 1868	Günther 1868: 228, pl. 19	St. Helena, 15°58'S, 5°43'W	Holotype: BMNH 1867.10.8.6		S Atlantic: Saint Helena
S. miostoma Günther, 1877	Günther 1877: 435	Yokohama, Japan	Holotype: BMNH 1879.5.14.235		NW Pacific: Japan to China
S. mystes Jordan and Starks in Jordan, 1895	Jordan and Starks in Jordan 1895: 491, pl. 52	Mazatlán, Sinaloa, W Mexico	Lectotype: CAS-SU 2919 (missing); established by Jordan and Evermann (1900:3288)	– *Holoscorpaena didymogramma* Fowler, 1944: 277, figs. 214-215	E Pacific: southern California (USA.) south to Chile
S. neglecta Temminck and Schlegel, 1843	Temminck and Schlegel 1843: 43 pl. 17 (fig. 4)	Nagasaki, Japan	Syntypes: RMNH D618-623 (6, stuffed)	– *S. fimbriata* Döderlein in Steindachner and Döderlein, 1884: 195 [27]	Indo-West Pacific: Andaman Islands east to Philippines and New Guinea, N to Japan, S to northern Australia
S. normani Cadenat, 1943	Cadenat 1943: 539, fig. 2	Mauritania	Syntypes: (17) MNHN B-2548 (2)		E Atlantic: Mauritania south to Angola
S. notata Rafinesque, 1810	Rafinesque 1810: 33	Sicily, Italy	No types known	– *?S. barbata* Gronow in Gray, 1854: 116. – *S. ustulata* Lowe, 1841: 36. – *S. maderensis* (non Valenciennes, 1833): Lowe 1841: 36. – *S. teneriffea* Jordan and Gunn, 1898: 345. – *S. scrofa afimbria* Slastenenko 1935: 75, fig.	Mediterranean Sea, Black Sea, E Atlantic: Bay of Biscay south to Senegal including Azores, Madeira and Canary Islands
S. onaria Jordan and Snyder, 1900	Jordan and Snyder 1900: 365, pl. 16	Misaki, Japan	Holotype: USNM 49405		Indo-West Pacific: NWAustralia and Andaman Sea; Korea and Japan to Taiwan; E Australia and N New Zealand to New Caledonia
S. orgila Eschmeyer and Allen, 1971	Eschmeyer and Allen 1971: 517, figs. 1a, 2	Easter Island	Holotype: CAS 24809		SE Pacific: Easter Island

Appendix 1 (cont.). – Checklist of the species of the genus *Scorpaena* Linnaeus, 1758.

Species	Original description	Type locality	Primary type(s)	Junior synonym(s)	Geographical distribution
S. papillosa (Schneider and Forster in Bloch and Schneider, 1801)	Schneider and Forster in Bloch and Schneider 1801: 196	New Zealand	No types known	– *S. cottoides* Forster in Bloch and Schneider, 1801: 196. – *S. miles* Richardson, 1842a: 18. – *S. cruenta* Solander in Richardson, 1842b: 217. – *S. ergastulorum* Richardson, 1842b: 217. – *S. militaris* Richardson, 1842c: 90.	SW Pacific: SE Australia and New Zealand
S. pascuensis Eschmeyer and Allen, 1971	Eschmeyer and Allen 1971: 523, figs. 1b, 3	Easter Island	Holotype: CAS 24812		SE Pacific: Easter Island
S. pele Eschmeyer and Randall, 1975	Eschmeyer and Randall 1975: 320, figs. 24, 25a	Oahu, Hawaiian Islands	Holotype: USNM 214046		Central Pacific: Hawaiian Islands
S. pepo Motomura, Poss and Shao, 2007	Motomura et al. 2007: 36, figs. 1, 2A	NE Taiwan	Holotype: ASIZP 65020		NW Pacific: Taiwan to Japan
S. petricola Eschmeyer, 1965	Eschmeyer 1965: 107, fig. 6b	off Brazil, 1°59'S, 42°05'W	Holotype: USNM 198150		SW Atlantic: Brazil
S. plumieri Bloch, 1789	Bloch 1789: 234, pl. 7 (fig. 1)	Martinique	No types known	– *S. bufo* Cuvier in Cuvier and Valenciennes, 1829: 306. – *S. scrofina* Valenciennes in Cuvier and Valenciennes, 1833: 465. – *Apistes exul* Gosse, 1851: 207. – *S. rascasio* Poey, 1860: 169. – *S. albofasciata* Metzelaar, 1919: 145, fig. 43. – *S. nuttingi* Evermann andSeale, 1924: 39, pl. 1. – *S. colonensis* Meek and Hildebrand, 1928: 844, pl. 81 (fig. 1).	W Atlantic including Ascension and Saint Helena
S. porcus Linnaeus, 1758	Linnaeus 1758: 266	Mediterranean Sea; Atlantic	Possible syntypes: NRM 22 (21), 23 (1), 123 (1)	– *Cottus massiliensis* Forsskål, 1775:x, 24; see Fricke (2008: 24). – *S. rascassa* Lacepède, 1801: 275. – *S. erythraea* Cuvier in Cuvier and Valenciennes, 1829: 316. – *S. fasciata* Costa, 1842-1853: Scorpaena p. 3, pl. 4. – *S. scarpaena* Nardo (ex Chiereghini), 1847: col. 121. – *S. phorcus* Gronow in Gray, 1854: 117. – *S. klausewitzi* Frøiland in Dor, 1984: 82.	Mediterranean Sea, Black Sea, E Atlantic: British Isles to Morocco including Azores and Canary Islands

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Species	Original description	Type locality	Primary type(s)	Junior synonym(s)	Geographical distribution
S. russula Jordan and Bollman, 1890	Jordan and Bollman 1890: 165	off Pacific coast of Colombia	Syntypes: BMNH 1900.9.29.189 (1); NMW 8864 (1); CAS-SU 384 (4); USNM 41138 (1), 41140 (1), 41146 (1), 41154 (1) 41160 (1), 41191 (1), 41208-09 (1, 1), 41366 (1), 41379 (1), 41487-88 (1, 1), 205651 (1)		E Pacific: Gulf of California to northern Peru
S. scrofa Linnaeus, 1758	Linnaeus 1758: 266	Mediterranean Sea	No types known	– Scorpaena tota rubens, cirris plurimis ad os: Artedi 1738a: 47; Artedi 1738b: 76. – Scorpaena cavite cavernoso, cirris geminis in maxilla inferiore: Gronow 1754: 46 (no. 103). – *?S. barbata* Bonnaterre [ex Gronow], 1788:70. –?*S. gronovii* Walbaum [ex Gronow], 1792: 383. – *S. lutea* Risso, 1810: 190. – *S. istriensis* Nardo [ex Chiereghini], 1847: col. 121. – *S. natalensis* Regan, 1906: 5, pl. 5. – *?Scorpaenopsis marmoratus* Bonde, 1923: 30, pl. 7.	Mediterranean Sea, E Atlantic: British Isles to Cape Verde Islands including Madeira; W Indian Ocean
S. sonorae Jenkins and Evermann, 1889	Jenkins and Evermann 1889: 150	Guaymas, Sonora, W Mexico	Holotype: USNM 39644		E Pacific: Mexico, Gulf of California and SW coast of Baja California
S. stephanica Cadenat, 1943	Cadenat 1943: 550, figs. 1 (5), 8	Port-Etienne, Cap Blanc, Mauritania	Syntypes: MNHN 1947-0004 (1), 1947-0005 (1)	– *S. gaillardae* Roux, 1954: 470.	E Atlantic: Mauritania south to Angola
S. sumptuosa Castelnau, 1875	Castelnau 1875: 17	Fremantle, Western Australia	Syntypes: MNHN A-4409 (1, dry), B-2570 (1)		SE Indian Ocean: Western Australia, Shark Bay south to Albany
S. thomsoni Günther, 1880	Günther 1880: 24, pl. 12	Juan Fernández Islands	Holotype: BMNH 1879.5.14.232		SE Pacific, Chile: Juan Fernández and Desaventuradas islands
S. tierrae Hildebrand, 1946	Hildebrand 1946: 441, fig. 84	Lobos de Tierra Bay, Peru	Holotype: USNM 128128		E Pacific: Peru and Chile
S. uncinata Buen, 1961	Buen 1961: 32, fig. 9	Isla de San Ambrosio, Chile	Holotype: EBMC 10478		SE Pacific: Chile
S. wellingtoni Victor, 2013	Victor 2013: 32, figs. 1-4	Galápagos Islands, Isla Isabela, Tagus Cove, 0.26°S, 91.37°W	Holotype: SIO 13-2		E Pacific: Galápagos Islands (Ecuador)
S. aplodactylus Bleeker 1853[1]	Bleeker 1853: 698	Wahai, Seram, Indonesia	Syntypes and/or Bleeker specimens: AMS B.8277 (1); RMNH 5861	– *S. bleekeri* Day, 1878: 747, pl. 36, fig. 2.	

[1] Questionable species