

*Sebastes (Acutomentum) paucispinosus*  
Matsubara, a Junior Synonym of  
*Sebastes alutus* (Gilbert)

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*Sebastichthys alutus* was described by Gilbert (1890: 76), from southern California. This well-known species is very abundant and of commercial importance off the Pacific coast of North America and north and south of the Aleutians (see Clemens and Wilby, 1946; Phillips, 1957; Alverson and Westrheim, 1961; Hart, 1973). *Sebastes (Acutomentum) paucispinosus* was described by Matsubara (1943: 216) on the basis of one specimen taken from Kesennuma, Miyagi Prefecture, Pacific coast of northern Japan.

Barsukov (1964) proposed two subspecies, *Sebastes alutus alutus* from California to the Gulf of Alaska and the Aleutians, and *S. a. paucispinosus* from northern Honshu, Japan to the Kuriles and Olyutorskii Bay. On the basis of a biological study of *Sebastes alutus*, Chikuni (1975) recognized four stocks which were not isolated from each other. Kanayama and Kitagawa (1983) and Quast (in press) also suspected that no subspecies could be recognized.

We were able to examine the holotypes of *S. alutus* (Fig. 1) at the United States National Museum (USNM) and of *S. (A.) paucispinosus* (Fig. 2) at the Kyoto University (FAKU), and 85 specimens of comparative material. In the present report, we will show the morphological uniformity of this widely-distributed species and will give a brief synonymy pertinent to the scope of the study.

Methods follow those of Eschmeyer (1969). The length of the symphyseal knob is measured from the anterior tip of the knob to the posterior border of the toothplate of the dentary near the mid-line. The last fin rays in the dorsal and anal fins are double, borne on a single pterygiophore, and counted as one.

*Sebastes alutus* (Gilbert, 1890)  
(Pacific Ocean perch)  
(Japanese name: Arasuka-menuke)  
(Figs. 1, 2)

*Sebastichthys alutus* Gilbert, 1890: 76 (original description; type locality: Santa Barbara Islands, southern California, in 150 fathoms).

*Sebastes alutus*: Matsubara, 1943: 178.

*Sebastes (Acutomentum) paucispinosus* Matsubara, 1943: 216 (original description; type locality: Kesennuma, Miyagi Prefecture, northern Japan).

*Sebastes alutus alutus*: Barsukov, 1964: 249, figs. 1, 2, 3B-E, 4, 5B-Z, 6V-G (Commander Islands, Gulf of Alaska, Bering Sea near Unimak Pass, off Washington).

*Sebastes alutus paucispinosus*: Barsukov, 1964: 251, figs. 3A, 5A, 6A-B (Olyutorskii Bay).

*Sebastes alutus alutus*: Litvinenko, 1978: 59 (osteology; Alaska).

*Sebastes (Sebastes) alutus*: Barsukov, 1981: 7 (interspecific relationships).

**Material examined.** USNM 48244 (117.8 mm SL, holotype of *Sebastichthys alutus*), Santa Barbara Islands, southern California, 33°58'N, 119°30'45"W, 150 fathoms; FAKU 101044 (315.4, male, holotype of *Sebastes (Acutomentum) paucispinosus*), Kesennuma, Miyagi Prefecture, Japan. Eastern Pacific: HUMZ 34386 (274.2), 53°15'N, 133°45'W, 410 m; HUMZ 34402 (351.7), 51°18'N, 130°15'W, 310–334 m; HUMZ 34477 (307.0), 53°35'N, 133°32'W, 264–400 m; HUMZ 34543 (296.8), 51°22'N, 129°53'W, 252–260 m; HUMZ 81120, 81359–81363, (6 specimens: 326.8–376.8), 46°43'N, 130°51'W, 274 m; LACM (Natural History Museum of Los Angeles County) 30831-2 (218.7), 40°00'N, 124°21.5'W; USNM 162490 (2 of 4: 82.0, 85.8), 47°51.8'N, 124°49'W, 62 fathoms; USNM 206224 (2: 123.5, 128.2), 46°09'N, 124°30'W, 75 fathoms. Gulf of Alaska: HUMZ 34459 (316.3), 55°25'N, 134°58'W, 225–260 m; HUMZ 34520 (315.8), 55°15'N, 134°25'W, 225–260 m; HUMZ 34529 (310.9), 59°15'N, 136°27.6'W, 349–350 m; HUMZ 67147 (226.5), 55°08'N, 157°02'W, 164–173 m; HUMZ 83576–83578 (3: 264.1–297.3), 54°40.00'N, 165°59.01'W–54°39.40'N, 166°05.28'W, 330 m; HUMZ 83591 (292.4) 54°39.59'N, 166°18.31'W–54°40.06'N, 166°19.03'W, 315 m; HUMZ 102211–102214 (4: 321.3–353.1), 58°44'39"N, 149°59'12"W–58°44'59"N, 149°56'28"W, 165 m; HUMZ 102603, 102604 (2: 255.0, 307.3), 58°37'23"N, 148°32'15"W–58°38'14"N, 148°34'08"W, 222 m; HUMZ 102803–102805 (3: 129.7–171.9), 53°32'08"N, 166°03'33"W–53°32'25"N, 166°01'25"W, 103 m. Aleutian Islands: HUMZ 50236, 50241, 50242 (3: 214.7–245.0), 51°48'N, 174°31'W; HUMZ 67659, 67661, 67663, 67664 (4: 225.3–265.7), 51°27'N, 179°53'W, 175–220 m; HUMZ 67875, 67879, 67881 (3: 201.1–217.8), 52°28'N, 172°58'E, 162–180 m; HUMZ 68029 (285.2), 51°44'N, 175°33'W, 320–340 m; HUMZ 68439 (184.2), 52°N, 175°E; HUMZ 83299,

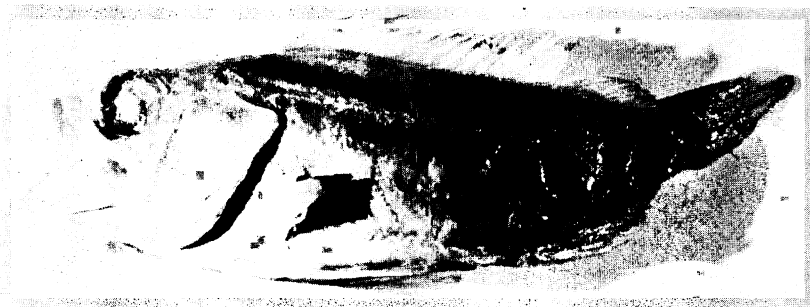


Fig. 1. Holotype of *Sebastichthys alutus*, USNM 48244, 117.8 mm SL.



Fig. 2. Holotype of *Sebastes (Acutomentum) paucispinosus*, FAKU 101044, 315.4 mm SL.

83300 (2: 295.9, 342.7), 54°59.74'N, 167°39.70'W–55°02.70'N, 167°44.82'W, 455 m; HUMZ 84575 (288.1), 55°19.85'N, 167°59.77'W–55°22.50'N, 168°04.77'W, 370 m; HUMZ 87914, 87915 (2: 209.5, 229.1), 52°03.70'N, 175°26.37'W–52°06.31'N, 175°27.38'W, 90 m; HUMZ 89042 (195.1), 51°36.42'N, 179°09.12'W–51°35.16'N, 179°11.79'W, 260–205 m. Eastern slope including Kurile Islands and Japan: HUMZ 6099, 6107, 6109, 6120, 6122 (5: 244.1–279.9), 51°30'N, 158°E; HUMZ 17748–17750, 17754, 17767 (5: 270.5–317.4), 49°40'N, 156°E; HUMZ 44897, 46213 (2: 263.0, 273.1), 55°51'N, 162°17'E, 287–300 m; HUMZ 46393, 46394 (2: 226.6, 236.2), 59°09'N, 165°13'E, 160–210 m; HUMZ 54276, 56484 (2: 220.2, 242.1), 55°31'N, 165°35'E, 285–300 m; HUMZ 56506 (247.0), 54°28'N, 167°04'E, 330–380 m; HUMZ 77067 (90.2), 59°06.1'N, 177°42.8'W, 148–162 m; HUMZ 82681 (294.1), 56°37.08'N, 173°00.70'W–56°35.64'N, 172°54.72'W, 235–200 m; HUMZ 84970–84973, 84975, 84976 (6: 278.5–315.2), 58°39.37'N, 174°38.82'W–58°38.75'N, 174°46.39'W, 230 m; HUMZ 85716 (335.0), 60°30.1'N, 178°56.2'W–60°27.3'N, 178°51.7'W, 352 m; HUMZ 86115 (271.1), 60°41.2'N, 179°01.5'W–60°38.1'N, 179°00.2'W, 295 m; HUMZ 93655 (318.5), 56°50.2'N, 173°24.3'W–56°49.0'N, 173°25.5'W, 375–710 m; HUMZ 93692 (359.9), 59°31.9'N, 177°58.0'W–

58°28.5'N, 178°00.7'W, 300–415 m; HUMZ 97586, 97587 (2: 293.0, 310.4), Kushiro Fish Market, Hokkaido, Japan; HUMZ 97603–97605 (3: 270.3–342.0), 51°10'N, 155°59'E, 280 m; IFES (Iwate Prefectural Fisheries Experimental Station) 680 (269.0), Kamaishi, Iwate Prefecture, Japan.

**Diagnosis.** A species of *Sebastes* with well-developed symphyseal knob, 2.0–4.3% SL. Pored scales in lateral line 45–56. Dorsal spines usually 13, rarely 14. Interorbital region convex. Spines on head small and weak; nasal, preocular, tympanic and parietal spines present; supraocular and postocular spines present or absent. Second anal spine not reaching tip of the third. Five dark bands between dorsal fin and lateral line; the fourth from the anteriormost below soft dorsal fin conspicuous.

**Results and discussion.** Matsubara (1943) gave a diagnosis of *Sebastes (Acutomentum) paucispinosus* as: 48 (our count of the holotype is 49) pored scales in lateral line, 12+25=37 (our count is 11+26=37) gill rakers on the first gill arch, strongly projected lower jaw, light brownish peritoneum, weakly developed cranial spines and

Table 1. Counts and measurements of holotypes of *Sebastichthys alutus* and *Sebastes (Acutomentum) paucispinosus* and comparative material of *Sebastes alutus*. Pectoral rays are upper unbranched + middle branched + lower unbranched = total; gill rakers, upper + lower = total; vertebrae, abdominal + caudal = total.

	USNM 28244 holotype <i>S. alutus</i>	FAKU 101044 holotype <i>S. (A.) paucispinosus</i>	Eastern Pacific material 15 specimens	Gulf of Alaska material 17 specimens	Aleutian Is. material 18 specimens	Eastern slope-Japan material 35 specimens
Standard length in mm	117.8	315.4	82.0–376.8	129.7–353.1	184.2–342.7	90.2–359.9
Counts (average in parentheses):						
Dorsal spines	13	13	13	13–14 (13.1)	13–14 (13.1)	13–14 (13.0)
Dorsal soft rays	15	15	14–16 (14.8)	14–16 (14.8)	14–16 (15.1)	14–16 (15.0)
Anal soft rays	8	8	7–9 (8.1)	7–8 (7.9)	7–8 (7.9)	7–9 (7.9)
Pectoral rays	1+8+8=17	1+9+8=18	1–3+6–10+7–9 =16–18 (17.8)	1+8–10+7–9 =18–19 (18.2)	1–2+7–9+8–9 =18–19 (18.2)	1–2+7–10+7–9 =17–19 (18.0)
Gill rakers	10+25=35	11+26=37	9–11+23–28 =33–39 (35.1)	9–12+25–28 =34–40 (36.8)	10–11+25–28 =35–39 (37.2)	10–12+22–28 =32–39 (36.6)
Vertebrae	11+16=27	11+16=27	11+16–17 =27–28 (27.3)	11+16=27	11+16=27	11+16=27
Pored scales in lateral line	45	49	46–51 (48.8)	46–51 (49.1)	46–56 (49.6)	46–56 (49.3)
Measurements in mm (%SL in parentheses):						
Head length	43.1 (36.6)	114.7 (36.4)	(35.0–38.5)	(33.2–36.9)	(31.4–35.9)	(32.8–38.0)
Body depth	38.6 (32.8)	102.7 (32.6)	(30.4–36.6)	(29.2–34.9)	(29.3–34.4)	(30.1–34.9)
Snout length	9.6 ( 8.1)	30.8 ( 9.8)	( 7.7– 9.2)	( 7.8– 9.5)	( 7.8– 8.6)	( 7.9– 9.9)
Orbit diameter	14.4 (12.2)	33.8 (10.7)	( 9.5–12.1)	( 8.9–11.1)	( 9.4–10.9)	( 8.6–12.3)
Interorbital width	10.1 ( 8.6)	24.7 ( 7.8)	( 6.7– 7.7)	( 5.6– 7.7)	( 6.6– 7.5)	( 6.5– 8.5)
Upper jaw length	18.1 (15.4)	55.0 (17.4)	(15.8–17.6)	(15.2–17.7)	(15.1–17.0)	(15.6–17.7)
Predorsal-fin length	37.1 (31.5)	109.6 (34.7)	(32.6–37.8)	(30.9–35.5)	(31.6–34.5)	(32.3–37.4)
Pectoral fin length	32.3 (27.4)	95.2 (30.2)	(25.2–31.2)	(23.6–30.5)	(25.5–29.6)	(25.6–30.5)
Pelvic fin length	25.3 (21.5)	69.7 (22.1)	(19.8–22.9)	(20.4–22.3)	(20.1–23.2)	(20.0–22.9)
Length of pelvic spine	18.4 (15.6)	43.7 (13.9)	( 9.7–15.0)	(12.4–15.6)	( 9.9–15.7)	(12.3–14.8)
Caudal fin length	20.6 (17.5)	46.4 (14.7)	(14.5–18.6)	(14.8–18.6)	(15.0–18.3)	(14.8–19.5)
Length of longest dorsal spine	17.2 (14.6)	43.7 (13.9)	(10.9–14.3)	(11.1–14.4)	(11.8–15.0)	(11.3–14.7)
Length of 12th dorsal spine	9.7 ( 8.2)	27.0 ( 8.6)	( 6.2– 8.6)	( 6.0– 8.7)	( 6.4– 9.3)	( 6.1– 9.3)
Length of 13th dorsal spine	11.9 (10.1)	30.3 ( 9.6)	( 8.4–11.6)	( 8.5–11.6)	( 8.0–11.5)	( 7.9–10.8)
Length of 1st anal spine	9.4 ( 8.0)	21.7 ( 6.9)	( 4.2– 6.9)	( 4.2– 7.9)	( 4.2– 7.5)	( 4.2– 6.8)
Length of 2nd anal spine	10.0 ( 8.5)	35.6 (11.3)	( 9.7–14.9)	( 9.3–15.1)	(10.2–14.2)	( 9.9–14.0)
Length of 3rd anal spine	17.0 (14.4)	38.4 (12.2)	( 9.8–14.6)	(10.7–14.9)	(10.6–13.9)	( 9.3–12.9)
Length of symphyseal knob	2.3 ( 2.0)	10.9 ( 3.5)	( 2.0– 4.3)	( 2.3– 4.0)	( 2.5– 3.4)	( 2.1– 4.3)

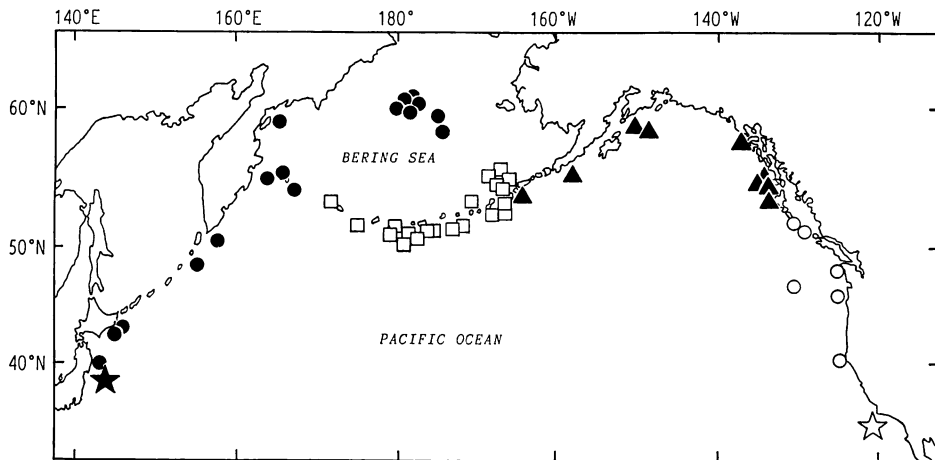


Fig. 3. Map showing the localities of the holotypes of *Sebastes alutus* (open star) and *S. (Acutomentum) paucispinosus* (solid star), and materials of *S. alutus* from eastern Pacific (open circles), Gulf of Alaska (solid triangles), Aleutian Islands (open squares), and eastern slope including Kurile Islands and Japan (solid circles).

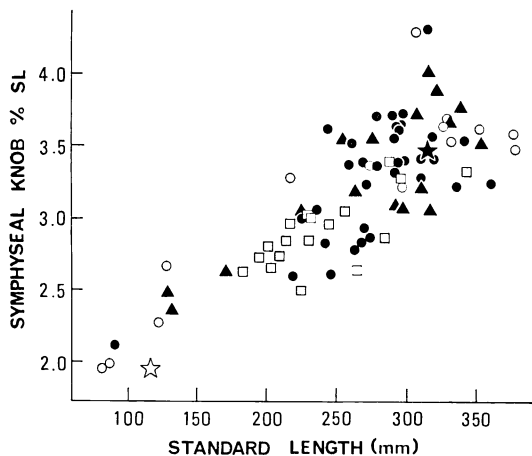


Fig. 4. Relationship of the length of symphyseal knob with standard length in the holotypes of *Sebastes alutus* (open star) and *S. (Acutomentum) paucispinosus* (solid star), and materials of *S. alutus* from eastern Pacific (open circles), Gulf of Alaska (solid triangles), Aleutian Islands (open squares), and eastern slope including Kurile Islands and Japan (solid circles).

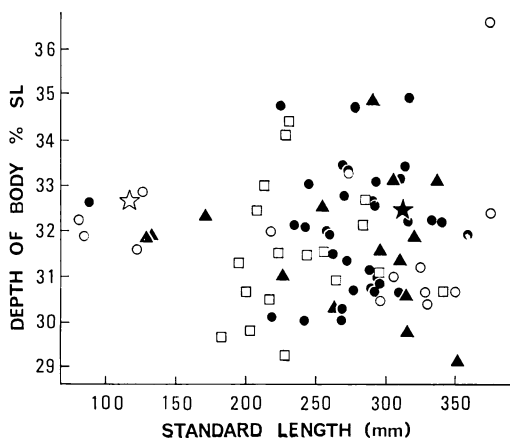


Fig. 5. Relationship of the depth of body with standard length in the holotypes of *Sebastes alutus* (open star) and *S. (Acutomentum) paucispinosus* (solid star), and materials of *S. alutus* from eastern Pacific (open circles), Gulf of Alaska (solid triangles), Aleutian Islands (open squares), and eastern slope including Kurile Islands and Japan (solid circles).

ridges, three narrow dark brown bars across the top of head and no supraocular spine. Matsubara's monograph was limited primarily to the Japanese species and did not treat *S. alutus* with a type locality of southern California which was not well known at that time.

Barsukov (1964) examined materials from the Gulf of Alaska, Olyutorskii, the Commanders, the Bering Sea near the Unimak Pass and off the coast of Washington, and distinguished the subspecies *S. alutus alutus* from *S. a. paucispinosus* in having less scale-covered parietal ridge, more

strongly developed symphyseal knob, and more slender body.

On the other hand, on the basis of length composition, growth characters, fecundity, variation of year-class strength and the oceanographic conditions, Chikuni (1975) found no significant morphological differences among populations of *S. alutus*. Kanayama and Kitagawa (1983) surveyed materials from the eastern North Pacific, the eastern Bering Sea, the Aleutians and Kamashi, Iwate Prefecture, Japan, and suggested that *S. (A.) paucispinosus* might be synonymous with *S. alutus*. Quast (in press) examined materials from the Gulf of Alaska and the eastern Bering Sea by means of image projecting photographs which were taken on the vessel. The two subspecies of Barsukov (1964) did not seem to be justified, because of the lack of evidence for isolating mechanisms, interpretation of differences induced by the growth and objective criteria for subspecies.

In addition to the holotypes of both species, 85 specimens obtained from both sides of the North Pacific and the Bering Sea were used as comparative material. They were treated as four groups corresponding to the stocks of Chikuni (1975), or the eastern Pacific, the Gulf of Alaska, the Aleutians and the eastern slope including the Kuriles and Japan (Fig. 3). No morphological differences were found among the four groups in the aforesaid characters presented by Barsukov (1964), nor in other characters. Symphyseal knob increases in size with growth as Quast (in press) stated, and the two holotypes show considerably different values because of their different sizes. It is evident, however, that the two holotypes are located within a single distribution of data, and also that no differences are recognized among the four groups (Fig. 4). In the depth of body, the four groups are not distinguishable (Fig. 5). Counts and measurements (Table 1) do not reveal specific or subspecific differences either. As observed by Barsukov, the supraocular spine is often absent, and that specimens may bear it on only one side. The observed pattern of supraocular spination among the specimens examined here does not support the recognition of a separate species.

Therefore, we agree with the suggestions of Chikuni (1975), Kanayama and Kitagawa (1983) and Quast (in press), and judge that *Sebastes*

(*Acutomentum*) *paucispinosus* is a junior synonym of *Sebastes alutus*.

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### オトメヌケはアラスカメヌケのシノニム

石田 実・尼岡邦夫

アラスカメヌケ *Sebastes alutus* (Gilbert) は、模式産地が米国カリフォルニア州南部, Santa Barbara 諸島で、北部北太平洋に広く分布する。本種と、宮城県気仙沼で得られた完模式標本以外に採集例がないオトメヌケ *S. paucispinosus* Matsubara との関係について、両種の完模式標本と、各地から得た 85 個体の標本を比較したところ、両者に差異は認められなかった。従って、オトメヌケはアラスカメヌケのシノニムであり、Barsukov (1964) の提唱した *S. alutus alutus* 及び *S. a. paucispinosus* は認められないと判断した。

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