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A new species of *Suezichthys* (Teleostei: Perciformes: Labridae) from the south-eastern Pacific, with a redefinition of the genus and a key to species

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Abstract

A new species of the fish family Labridae, *Suezichthys rosenblatti*, is described from specimens collected at Isla San Felix, Isla Juan Fernandez and Isla San Ambrosio, off the coast of Chile. *Suezichthys rosenblatti* is distinct in having a combination of 11 dorsal fin soft rays and 11 anal fin soft rays. It falls in the group of species that has 1½ scale rows above the lateral line and lack a scaly sheath at the base of the dorsal and anal fins (*S. aylingi* Russell, *S. caudovittatus* Russell, *S. gracilis* (Steindachner & Döderlein) and *S. soelae* Russell). Unlike other members of this group, *S. rosenblatti* has haemal arches on vertebrae 10–11 (versus haemal arch only on vertebra 10). The monotypic *Nelabrichthys ornatus* (Carmichael) is now included in the genus *Suezichthys* and a revised generic description and key to species of *Suezichthys* is provided. The occurrence of *S. rosenblatti* in the south-eastern Pacific and *S. ornatus* in the south-western Indian Ocean and south Atlantic Ocean represent major range extensions of the genus *Suezichthys*.

Key words: Labridae, *Suezichthys rosenblatti*, new species, south-eastern Pacific

Abstract

Una nueva especie de pez de la familia Labridae, *Suezichthys rosenblatti*, se describe a partir de especímenes recolectados en la Isla San Félix, Isla Juan Fernández e Isla San Ambrosio, en la costa de Chile. *Suezichthys rosenblatti* se distingue por tener una combinación de 11 rayos de la aleta dorsal y 11 rayos de la aleta anal suave. Se realiza en el grupo de especies que tiene 1½ hileras de escamas por encima de la línea lateral y la falta de una vaina escamosa en la base de las aletas dorsal y anal (*S. aylingi* Russell, *S. caudovittatus* Russell, *S. gracilis* (Steindachner y Döderlein) y *S. soelae* Russell). A diferencia de otros miembros de este grupo, *S. rosenblatti* tiene arcos hemáticos, en las vértebras 10–11 (frente al arco hemáticos sólo en la vértebra 10). Monotípico *Nelabrichthys ornatus* (Carmichael) se incluye en el *Suezichthys* género y una descripción revisada genérico y clave para las especies de *Suezichthys* proporciona. La presencia de *S. rosenblatti* en el Pacífico sur-oriental y *S. ornatus* en el Océano Índico al sur-oeste y el sur del Océano Atlántico representan extensiones importantes de la gama *Suezichthys* género.

Introduction

Labrid fishes of the genus *Suezichthys* Smith are small (maximum standard length about 140 mm SL), colourful, sexually dichromatic fishes that inhabit mainly rocky reef areas in temperate and tropical waters of the Indo-Pacific and south Atlantic. In a revision of the genus, Russell (1985) recognized eight species of *Suezichthys*, including four new species from temperate-subtropical Australia and New Zealand: *S. aylingi* Russell 1985 (north-eastern New Zealand and south-eastern Australia); *S. gracilis* (Steindachner & Döderlein 1887) (Japan, Korea, Taiwan, Vietnam, New Caledonia and south-eastern Australia); *S. soelae* Russell 1985 (north-western Australia); *S. caudovittatus* (Steindachner 1898) (Red Sea, Somalia and Persian Gulf); *S. notatus* (Kamohara 1958) (Japan,

Hawaii and north-western Australia); *S. cyanolaemus* Russell 1985 (south-western Australia); *S. arquatus* Russell 1985 (north-eastern New Zealand, New Caledonia, Norfolk Island, Lord Howe Island and south-eastern Australia); and *S. russelli* Randall 1981 (Red Sea and W. Indian Ocean). An additional new species, *S. bifurcatus* Russell 1986 was subsequently described from southern Australia (Russell 1986), and Araga *et al.* (1988) extended the range of *S. arquatus* and *S. soelae* to Japan. Kuitert (2002) also included the monotypic *Nelabrichthys ornatus* (Carmichael 1818) from Tristan da Cunha, Gough I., Vema Seamount, St Paul I. and Amsterdam I. in *Suezichthys*, regarding it as closely related to *S. arquatus* and *S. notatus* mainly on the basis of a remarkable similarity of the terminal phase colour pattern.

In the present paper, we describe a new species of *Suezichthys* collected from Isla San Felix, Isla Juan Fernandez and Isla San Ambrosio, off the coast of Chile. The new species, together with the inclusion of *S. bifurcatus* and *Nelabrichthys* (= *Suezichthys*) *ornatus*, necessitates a redefinition of the genus *Suezichthys*, which is provided below. A key to species also is included.

Methods and material

Terminology and methods follow those of Russell (1985). The terms initial phase (IP) and terminal phase (TP) refer to the two adult colour patterns: IP individuals may be male or female; TP individuals are male. In the species description, counts and measurements for the holotype are given first, followed, where different, by the range (in parentheses) for the paratypes. Type-specimens are deposited in the following institutions: Australian Museum, Sydney (AMS); Natural History Museum, London (BMNH); Bernice P. Bishop Museum, Honolulu (BPBM); Field Museum of Natural History, Chicago (FMNH); Museum and Art Gallery of the Northern Territory, Darwin (NTM); and Scripps Institution of Oceanography, La Jolla (SIO).

Genus *Suezichthys* Smith

Suezia Smith, 1957: 106 (type-species, *Labrichthys caudovittatus* Steindachner, by original designation, preoccupied in Crustacea by *Suezia* Gurney 1927).

Suezichthys Smith, 1958: 319 (type-species, *Labrichthys caudovittatus* Steindachner, replacement name for *Suezia* Smith).

Nelabrichthys Russell, 1983: 1 (type-species *Labrus ornatus* Carmichael).

Description. Dorsal-fin rays IX,11–12 (rarely 13); anal-fin rays III,10–12; caudal-fin rays 4–6+2+12+2+4–5 (rarely 6); pectoral-fin rays 12–13 (rarely 14); pelvic-fin rays I,5; lateral-line scales 25–27; scale rows above lateral line 1½–2½ (plus small basal sheath scale); scales below lateral line 7½; predorsal scales 3–6; vertebrae 9+16–17 (rarely 18), ribs ending on ninth vertebra; epineural bones ending on twelfth to fourteenth vertebra; gill rakers 15–25; branchiostegal rays 6.

Body elongate, the depth at origin of dorsal fin 3.2–5.3 in SL; mouth terminal, small, the maxilla reaching to or just beyond a vertical through anterior nostril; lips moderately fleshy, the upper lip with 4–7 longitudinal plicae and lower lip with 1–2, the anterior canines recurved; 10–15 progressively smaller canine teeth laterally in upper jaw, with an inner row of 4–8 small canines behind anterior most teeth; an enlarged canine (rarely two) at posterior end of upper jaw; lower jaw with 1–2 pair enlarged anterior canines, the second canine usually shorter than the first; 12–16 progressively smaller lateral teeth in lower jaw, with an inner row of 2–4 small canines behind anterior most teeth; lower pharyngeal plate broadly Y-shaped, the transverse limb with a medial posterior patch of large, blunt conical teeth and 2–3 rows of smaller conical teeth about one third to one half the size of other teeth; anterior median limb of lower pharyngeal narrow, with 2–3 rows of conical teeth.

Nostrils small, the anterior nostril terminating in a short membranous tube; posterior nostril without any flap or marginal ridge. Gill membranes not attached to isthmus, forming a free fold posteriorly. Preopercle entire, the free posterior margin reaching upward to or just above level of lower rim of orbit, the free lower membrane extending forward to below middle of lower rim of orbit. Opercular membrane rounded and extending posterior to pectoral base. Forehead, snout, and ventral side of head naked; cheek scales small, in 1–3 rows behind eye, and 2–4 (rarely one) rows below eye, extending forward to beneath middle of lower rim of orbit. Opercle with large scales posteriorly; anterior part of opercle and membranous opercular flap naked; subopercle naked. Body scales large,

the scales on thorax about one half to three quarters the size of body scales. Lateral line complete, bent abruptly downward beneath ninth to eleventh soft dorsal rays; laterosensory canals unbranched, bifurcate or simply branched, the canal pores terminal. Dorsal fin length 1.4–1.8 in SL, the dorsal rays progressively longer posteriorly; dorsal spines pungent, the last spine 1.5–3.0 times length of first; membrane of dorsal fin emarginate, the posterior tip of fin pointed. Anal fin length 2.4–3.6 in SL, the rays progressively longer posteriorly; anal spines pungent, the first spine 1.5–3.5 in third anal spine; last or penultimate soft ray longest, 1.1–2.4 times length of third anal spine, the posterior point pointed. Low scaly sheath at base of dorsal and anal fin present or absent. Caudal fin rounded to truncate (upper rays slightly produced to form a short point in larger TP specimens in some species). Pectoral fins rounded to pointed (upper rays longest), not reaching a vertical through anus, length of fin 0.8–2.1 in head. Pelvic fins short to moderately long, pointed, not quite reaching to or reaching beyond tips of pectoral fins, length 1.2–3.2 in head.

Remarks. *Suezichthys* superficially resembles the temperate labrid genus *Pseudolabrus*, but is osteologically distinct in having the following characters: anterior preneural zygopophyses fused, slightly expanded (versus separate, small); urohyal with a posteroventral spike-like extension (versus no spike); and laterosensory canal tube simple tubular, bifurcate or branched (versus bifurcate or multi-branched). In these characters it appears most closely related to the genus *Halichoeres*, but differs in having anal-fin rays III,10–12 (versus anal-fin rays III,11–13 in *Halichoeres*), cheeks scaly (versus naked in *Halichoeres*), and gill membranes forming a free fold across the isthmus (versus broadly attached in *Halichoeres*).

Russell (1983, 1988) considered *Suezichthys* to be closely related to the genus *Nelabrichthys*, and separated the latter mainly on the basis of its higher dorsal and anal fin ray counts, greater number of vertebrae, and having branched lateral-line tubes. Kuitert (2002), however, pointed out the remarkable similarity of the TP colour pattern of the monotypic *Nelabrichthys ornatus* (Carmichael 1818) to *Suezichthys arquatus* and *S. notatus*, and assigned it to *Suezichthys*.

With the inclusion now of *Suezichthys bifurcatus* and the new species described below it is clear that the genus *Suezichthys* shows much greater meristic range in fin ray and vertebral numbers than previously described (Russell 1985). All species of *Suezichthys*, however, share the following derived traits: (1) anterior preneural zygopophyses fused mesially; (2) urohyal with a spike-like posteroventral projection; and (3) well-developed haemal arches on the first one or two caudal vertebrae (V10–11) (Russell 1983). The same morphological characters are also present in *Nelabrichthys*, and based on these synapomorphies we here include *Nelabrichthys* in the genus *Suezichthys*.

Key to the species of *Suezichthys*

1. Scale rows above lateral-line 1½, no scaly sheath at base of dorsal and anal fins 2
- Scale rows above lateral line 2½, low scaly sheath at base of dorsal and anal fins 6
2. Anal fin rays III,11 (Isla San Felix, Isla Juan Fernandez and Isla San Ambrosio) *S. rosenblatti* n.sp.
- Anal fin rays III,10 3
3. Horizontal cheek scale rows behind eye 1; horizontal cheek scale rows below eye 2, rarely 1 (S.E. Australia, N.E. New Zealand) *S. aylingi*
- Horizontal cheek scale rows behind eye 2–3; horizontal cheek scale rows below eye 3 4
4. Black spot present on basal half of membrane between first 2 or 3 dorsal spines in IP and TP; TP with diagonal black band or series of black spots from upper part of caudal fin base to posterior edge of caudal fin 5
- Black spot not present on anterior part of dorsal fin in IP, but present in TP; TP lacking dark diagonal band or spots on caudal fin (Korea, Japan, Vietnam, S.E. Australia, New Caledonia) *S. gracilis*
5. Brown band from middle of upper lip to anterior margin of eye; upper lobe of caudal fin slightly produced in TP; TP with series of 4–6 black spots in an arc from upper part of caudal fin base to middle outer two thirds of fin (N.W. Australia; Japan) *S. soelae*
- No brown band in front of eye; caudal fin rounded; TP with diagonal black band from upper part of caudal fin base to posterior edge of caudal fin (Red Sea, W. Indian Ocean) *S. caudovittatus*
6. Dorsal fin rays IX,11 7
- Dorsal fin rays IX,12–13 (Tristan da Cunha, Gough I., Vema Seamount, St Paul I., Amsterdam I.) *S. ornatus*
7. Lateral-line scales with simple, unbranched laterosensory canal tube 8
- Lateral-line scales with bifurcate laterosensory canal tube (S. Australia) *S. bifurcatus*
8. IP and TP with black blotch or blotches above dorsoposterior margin of eye (Japan, Hawaii, N.W. Australia) *S. notatus*
- IP and TP lacking dark blotches above eye 9
9. IP with black spot on caudal peduncle about equal in size to diameter of pupil; TP with 3 slightly oblique blue bands extending downward from lower part of preopercle onto interopercle (S.W. Australia) *S. cyanolaemus*

- IP with black spot on caudal peduncle less than size of diameter of pupil; TP with 1 or 2 oblique bands extending downward from lower part of preopercle onto opercle 10
- 10. IP with dark scribblings on nape above and behind eye; TP with 2 slightly oblique blue bands extending downward from lower part of preopercle onto interopercle (N.E. New Zealand, New Caledonia, Norfolk I., Lord Howe I., S.E. Australia; Japan) . . .
..... *S. arquatus*
- IP lacking dark scribblings on nape; TP with 1 lavender-pink band extending downward from corner of preopercle onto interopercle (Red Sea, W. Indian Ocean) *S. russelli*

***Suezichthys rosenblatti*, new species**

Proposed name: spotted rainbow wrasse

(Fig. 1)

Holotype. FMNH 120653, male, 77.7mm TL, 66.1 mm SL, Eastern Pacific Ocean, Isla San Ambrosio, Caleta Las Moscas, 26° 20' 5" S, 79° 53' 25" W, field # IOC 97-20, shallow rocky reef where rocks meet sand, 10–15m, rotenone, M. Westneat and M. Hale, 23 February 1997. Fig. 1A, C.

Paratypes (24 specimens). AMS I.32297-001 (ex SIO 65-629), 2: 45.4–57.0 mm SL, Eastern Pacific Ocean, Isla San Felix, Cathedral Rocks (26° 16' 10" S, 80° 06' 30" W), 33m, chemfish, W. Baldwin and party, 7 December 1965. BMNH 2012.8.8.1-2, (ex SIO 65-629), 2: 39.1–61.2 mm SL, Eastern Pacific Ocean, Isla San Felix, Cathedral Rocks (26° 16' 10" S, 80° 06' 30" W), 33m, chemfish, W. Baldwin and party, 7 December 1965. FMNH 109197, 13: 31.6–69.8mm SL, Eastern Pacific Ocean, Isla San Ambrosio, Caleta Las Moscas, 26° 20' 5" S, 79° 53' 25" W, field # IOC 97-20, shallow rocky reef where rocks meet sand, 10–15m, rotenone, M. Westneat and M. Hale, 23 February 1997. NTM S.17339-001, 2: 49.2–51.4 mm SL, Eastern Pacific Ocean, Isla San Felix, Cathedral Rocks (26° 16' 10" S, 80° 06' 30" W), 33m, chemfish, W. Baldwin and party, 7 December 1965. SIO 65-629, 3: 47.1–53.5 mm SL, Eastern Pacific Ocean, Isla San Felix, Cathedral Rocks (26° 16' 10" S, 80° 06' 30" W), 33m, chemfish, W. Baldwin and party, 7 December 1965. SIO 65-659, 5: 55.8–75.7 mm SL, Eastern Pacific Ocean, Isla Juan Fernandez, S.E. of Bacalao Point (33° 38' 20" S, 78° 47' 15" W), 26 m, chemfish, B. Walker and party, 16 December 1965.

Diagnosis. Dorsal-fin rays IX,11; anal-fin rays III,11 (III,11 rarely 10); branched caudal-fin rays 12; pectoral fin branched rays 12–13; pelvic-fin rays I,5; lateral-line scales 26; scale rows above lateral line 1½/7½; predorsal scales 5 (4–6, rarely 3); cheek scale rows behind eye 1 (1–2); cheek scale rows below eye 2; gill rakers 17 (15–16); vertebrae 9+16, ribs ending on ninth vertebra; epineural bones ending on twelfth to fourteenth vertebra; haemal arch present on vertebrae 10–11.

Description. Dorsal-fin rays IX,11; anal-fin rays III,11 (III,11 rarely 10); branched caudal-fin rays 12; pectoral fin branched rays 12–13; pelvic-fin rays I,5; lateral-line scales 26; scale rows above lateral line 1½/7½; predorsal scales 5 (4–6, rarely 3); cheek scale rows behind eye 1 (1–2); cheek scale rows below eye 2; gill rakers 17 (15–16); branchiostegal rays 6; vertebrae 9+16, ribs ending on ninth vertebra; epineural bones ending on twelfth to fourteenth vertebra; haemal arch present on vertebrae 10–11.

Body depth 4.7 (4.5–5.1) in SL; head length 3.5 (3.4–3.9); snout length 4.7 (4.3–5.3) in head length; diameter of orbit 4.7 (4.2–5.0) in head; interorbital width 1.4 (1.2–1.4) in head; suborbital depth 2.3 (2.2–3.9) in head; dorsal-fin length 1.5 (1.5–1.6) in SL; ninth dorsal spine 1.7 (1.4–2.2) times length of first; longest dorsal ray 1.4 (1.2–1.5) times length of ninth dorsal spine; anal-fin length 2.9 (2.6–3.2) in SL; first anal spine 8.9 (5.2–10.2) in head; third anal spine 2.3 (1.3–2.9) times length of first; longest anal ray 1.4 (1.3–1.7) times length of third anal spine; pectoral-fin length 1.6 (1.4–1.6) in head; pelvic-fin length 2.2 (1.9–2.3) in head. No scaly sheath at base of dorsal and anal fins; caudal fin truncate.

Mouth terminal, small, the maxilla reaching to or just beyond a vertical through anterior margin of eye; lips moderately fleshy, a pair of slightly enlarged recurved canines in upper jaw; 10–14 progressively smaller canine teeth laterally in upper jaw, with an inner row of 4–7 small canines behind anterior most teeth; an enlarged forwardly pointing canine (rarely 2) at posterior end of upper jaw; lower jaw with 1–2 pair enlarged anterior canines, the second canine usually shorter than the first; 12–14 progressively smaller lateral teeth in lower jaw, with an inner row of 2–4 small canines behind anterior most teeth; lower pharyngeal plate broadly Y-shaped, the transverse limb with a medial posterior patch of large, blunt conical teeth and 2–3 rows of smaller conical teeth about one third to half the size of other teeth; anterior median limb of lower pharyngeal narrow, with 2–3 rows of conical teeth. Nostrils small, the anterior nostril terminating in a short membranous tube; posterior nostril without

any flap or marginal ridge. Gill membranes not attached to isthmus, forming a free fold posteriorly. Preopercle entire, the free posterior margin reaching upward to or just above level of lower rim of orbit, the free lower membrane extending forward to below middle of lower rim of orbit. Opercular membrane rounded and extending posterior to pectoral base. Forehead, snout, and ventral side of head naked; cheek scales small, in 1–3 rows behind eye, and 2 rows below eye, extending forward to beneath middle of lower rim of orbit. Opercle with large scales posteriorly; anterior part of opercle and membranous opercular flap naked; subopercle naked. Body scales large, the scales on thorax about one half to three quarters the size of body scales. Lateral line complete, bent abruptly downward beneath ninth to eleventh soft dorsal rays; laterosensory canals simple unbranched, the canal pores terminal. dorsal fin length 1.5 (1.5–1.6) in SL; ninth dorsal spine 1.7 (1.4–2.2) times length of first; longest dorsal ray 1.4 (1.2–1.5) times length of ninth dorsal spine; anal fin length 2.9 (2.6–3.2) in SL; first anal spine 8.9 (5.2–10.2) in head; third anal spine 2.3 (1.3–2.9) times length of first; longest anal ray 1.4 (1.3–1.7) times length of third anal spine; pectoral fin length 1.6 (1.4–1.6) in head; pelvic fin length 2.2 (1.9–2.3) in head. No scaly sheath at base of dorsal and anal fins; caudal fin truncate.

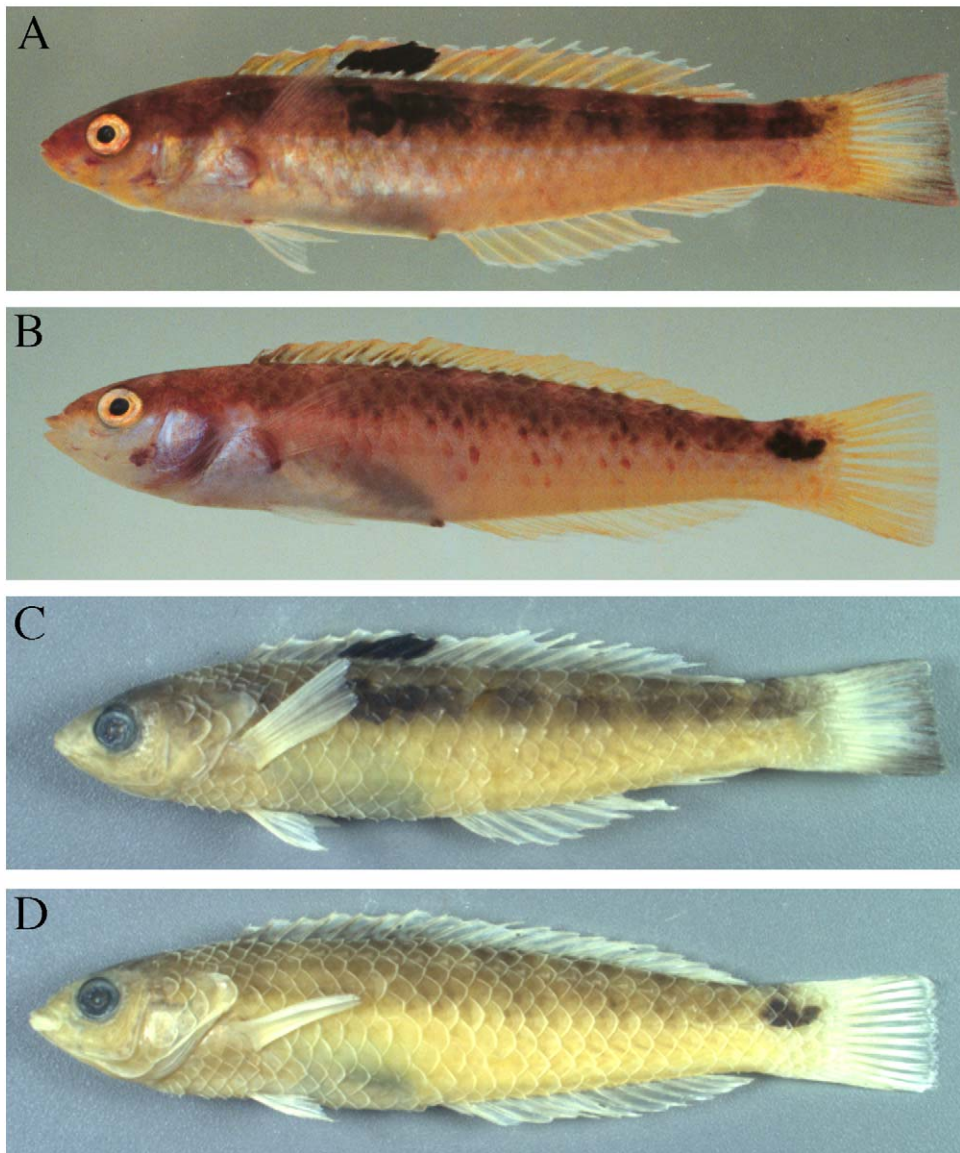


FIGURE 1. *Suezichthys rosenblatti*, the spotted rainbow wrasse. A. Holotype: FMNH 120653, male colouration when fresh. B. *Suezichthys rosenblatti*, FMNH 109197, fresh colouration of female from the paratype series. C. Holotype: FMNH 120653, same specimen as in A, preserved colouration. D. *Suezichthys rosenblatti*, FMNH 109197, same specimen as in B, preserved colouration.

Colour of fresh specimens (Fig. 1). TP (Fig. 1A) light brown ventrally and dark brown dorsally, dorsal dark area broken into 7 distinct dark blotches, the second above belly with a dark black centre; the last of these blotches forms a black spot on upper caudal peduncle that reaches dorsal edge of peduncle; brown spot in lower posterior corner of preopercle; silvery colour extending from belly to area anterior and ventral to pectoral fin and the gill cover. Head pale below, brown above, brown area more extensive on top of snout and upper lip, around ventral edge of eye and onto dorsal edge of gill cover. Iris of eye silvery and reflective. Fins clear to pale yellow-brown, a large black spot in spinous portion of dorsal fin from spine 5–8; dorsal, ventral, and posterior edges of caudal fin dark. IP (Fig. 1B) light brown ventrally and dark brown dorsally, dorsal half of body slightly mottled; reddish blotch on posterior portion of some scales; area anterior and ventral to pectoral fin and gill cover silver; brown spot in lower posterior corner of preopercle; large anteroposteriorly lengthened black spot on upper caudal peduncle, not quite reaching dorsal edge of peduncle. Head pale below, brown above, brown area extending from top of snout and upper lip through eye just below centre and onto dorsal edge of gill cover. Iris of eye silvery and reflective. Fins clear to pale yellow-brown, a few dusky dark markings extending onto dorsal fin in anterior half.

Colour in alcohol. TP (Fig. 1C) mostly brown; mottled and darker above and lighter below, dark upper half concentrated into black spot on upper scaly base of caudal peduncle; black blotch above belly; large black spot in spinous portion of dorsal fin from spine 5–8; edges of caudal fin faintly pigmented. IP (Fig. 1D) mostly brown; mottled and darker above with 5–6 patches of more darkly pigmented scales on midbody; lighter brown on lower body; black spot, about same diameter as eye, on upper scaly base of caudal peduncle.

Distribution. Specimens in the SIO collection were collected from Isla Juan Fernandez and Isla San Felix. Other specimens in the FMNH were collected from Isla San Ambrosio of the Desventuradas group. *Suezichthys rosenblatti* is the only species of *Suezichthys* from the eastern Pacific and it represents a considerable range extension for the genus.

Etymology. Named from honour of Dr Richard Rosenblatt for his contributions to Eastern Pacific ichthyology and who drew the attention of the first author to the existence of this new species in the SIO collection.

Comparisons. *Suezichthys rosenblatti* is distinct from all other species of the genus in having 11 anal fin soft rays. It falls in the group of species that have 1½ scale rows above the lateral line and lack a scaly sheath at the base of the dorsal and anal fins (*S. aylingi*, *S. caudovittatus*, *S. devisi*, *S. gracilis* and *S. soelae*). Unlike other members of this group, however, *S. rosenblatti* has haemal arches on vertebrae 10–11 (versus haemal arch present only on vertebra 10).

Remarks. This species inhabits mixed rock and sand bottoms in depths of 10–33 m. Male (TP) specimens ranged in size from 53.5–58.0 mm SL; females (IP) from 45.4–75.7 mm SL (3 females 45.4–57.0 mm ripe).

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