



***Sueviota pyrios*, a new species of coral-reef dwarfgoby from the Red Sea (Teleostei: Gobiidae)**

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Abstract

Sueviota pyrios is described as a new gobiid fish from a single male specimen, 16.5 mm SL, collected from the Gulf of Aqaba in the Red Sea. It is distinct from other described species of the genus in being bright orange-red in life, in having two vertically aligned, well-separated, reddish clusters of chromatophores on the pectoral-fin base (each with a blackish mark in the center of the cluster), the first two spines of the dorsal fin filamentous, 8 dorsal-fin soft rays, 8 anal-fin soft rays, 16 pectoral-fin rays (all unbranched), the fifth pelvic-fin ray with two branches, no pelvic frenum, 25 lateral scale rows, and the following cephalic sensory-canal pores: POP, NA, AITO, PITO, SOT, and AOT. This is the first record of the genus *Sueviota* from the Red Sea.

Key words: taxonomy, systematics, ichthyology, coral-reef fishes, Indian Ocean, Israel, *Eviota*.

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Introduction

The Indo-Pacific genus *Sueviota*, described by Winterbottom & Hoese (1988), is currently represented by six valid described species: *S. aprica* Winterbottom & Hoese, 1988; *S. atrinasa* Winterbottom & Hoese, 1988; *S. bryozophila* Allen, Erdmann & Cahyani, 2016; *S. lachneri* Winterbottom & Hoese, 1988; *S. larsonae* Winterbottom & Hoese, 1988; and *S. tubicola* Allen & Erdmann, 2017. *Sueviota lachneri* is the only species known from the Indian Ocean, found from the Chagos Archipelago and Maldives eastward to the Pacific Ocean.

In 1972, the second author visited the Heinz Steinitz Marine Laboratory (now Interuniversity Institute for Marine Sciences in Eilat) in Israel, located at the northern end of the Gulf of Aqaba, Red Sea, where he collected and photographed a single specimen of a new species of *Sueviota*, which is described herein. It represents the first record of the genus from the Red Sea.

The new species fits the definition of the genus *Sueviota* (Winterbottom & Hoese 1988), differing from the similar genus *Eviota* in having the fifth pelvic-fin ray branched (vs. unbranched or absent in *Eviota*). As discussed by Allen & Erdmann (2017), the validity of the genus *Sueviota* as it relates to *Eviota* is under question, and is currently being studied by Luke Tornabene (University of Washington, WA, USA).

Materials and Methods

Counts and measurements, descriptions of fin morphology and the cephalic sensory-canal pore patterns follow Lachner & Karnella (1980) and Jewett & Lachner (1983). Dorsal/anal fin-ray formula counts (d/a) only include segmented rays. Measurements were made to the nearest 0.1 mm using an ocular micrometer or dial calipers, and are presented as percentage of Standard Length (SL). All specimen lengths are SL in mm. Cyanine Blue 5R (acid blue 113) stain and an airjet was used to make the pores more obvious (Akihito *et al.* 1993, 2002, Saruwatari *et al.* 1997). The format of the description follows Allen *et al.* (2016) for ease of comparison.

Methods of measurements follow Allen *et al.* (2016: 77): “Standard length (SL) was measured from the median anterior point of the upper lip to the base of the caudal fin (posterior end of the hypural plate); body depth from the origin of the pelvic; head length was taken from the upper lip to the posterior end of the opercular membrane; eye diameter is the greatest fleshy diameter; snout length was measured from the median anterior point of the upper lip to the nearest fleshy edge of the eye; caudal-peduncle depth is the least depth, and caudal-peduncle length the horizontal distance between verticals at the rear base of the anal fin and the caudal-fin base; lengths of spines and rays are measured to their extreme bases; caudal- and pectoral-fin lengths are the length of the longest ray; pelvic-fin length is measured from the base of the pelvic spine to the tip of the longest segmented ray”.

Sueviota pyrios, n. sp.

Fiery Dwarfgoby

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Figures 1–3.

Holotype. BPBM 13361, 16.5 mm SL, male, Red Sea, Gulf of Aqaba, Israel, Eilat, off Heinz Steinitz Marine Laboratory (now Interuniversity Institute for Marine Sciences in Eilat), 29.502° N, 34.929° E, 10.5 m, quinaldine, 2 June 1972.

Diagnosis. A species of *Sueviota* with the following combination of characters: dorsal-fin rays VI + I,8, first two spines filamentous; anal-fin rays I,8; pectoral-fin rays 16 (all unbranched); pelvic fins long, longest ray reaching middle of urogenital papilla, all rays branched; no pelvic frenum; cephalic sensory-canal pores POP,

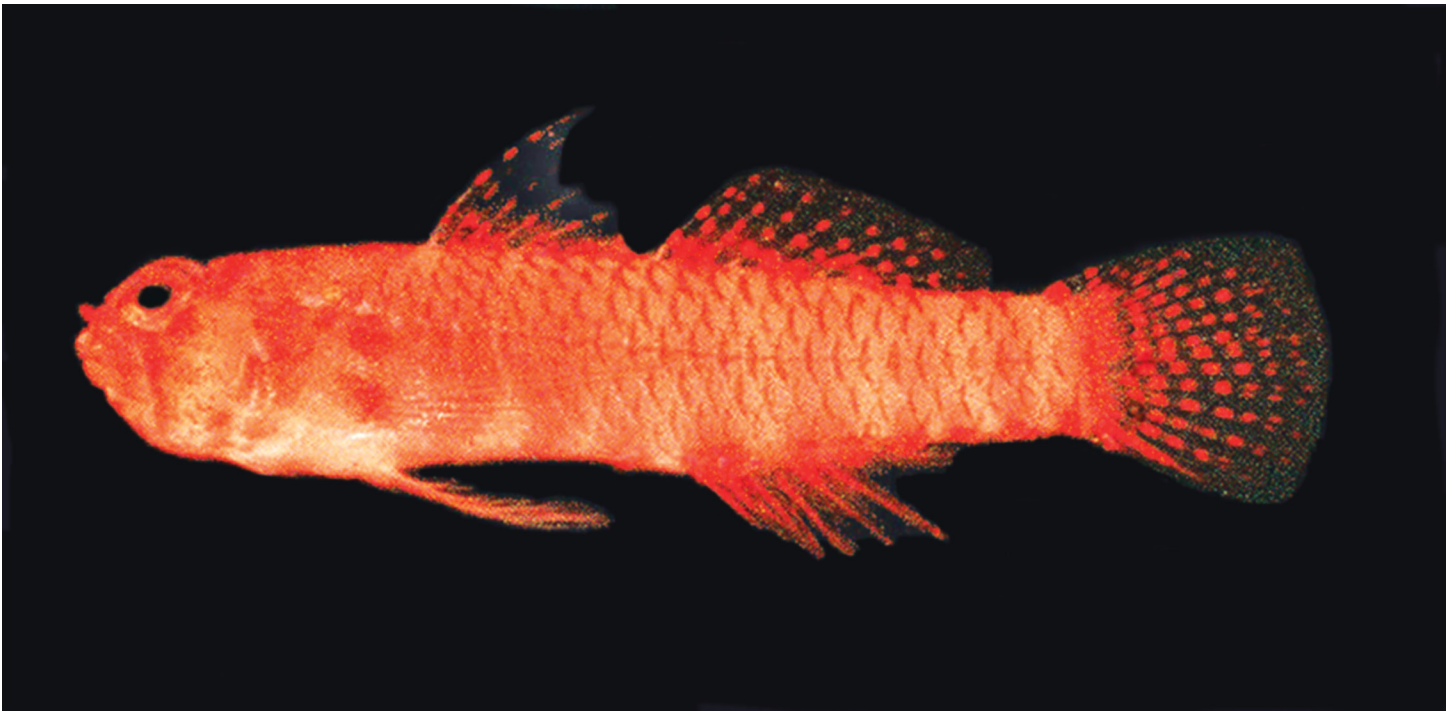


Figure 1. *Sueviota pyrios*, fresh holotype, BPBM 13361, 16.5 mm SL, Eilat, Gulf of Aqaba; filamentous dorsal-fin spines are not visible in photograph (J.E. Randall).

NA, AITO, PITO, SOT, and AOT present; color in life light orange-red, each scale with a bright orange-red arc, prominent rows of red spots on dorsal-fin and caudal-fin elements, and two vertically aligned, well-separated, reddish clusters of chromatophores on pectoral-fin base (each with a blackish mark at center of cluster).

Description. Dorsal-fin elements VI+I,8; first dorsal fin triangular, first two spines filamentous, extending to base of third segmented ray of second dorsal fin; anal-fin elements I,8; pectoral-fin rays 16, all unbranched; pelvic-fin elements I,5, all branched, fifth ray with two branches, subequal to fourth, no frenum; caudal fin with 17 segmented rays; branched rays broken.

Lateral scale rows 25; transverse scale rows 7; scales mostly lost, only pockets remaining, no evidence of scales present on head, thorax, and along ventral midline of abdomen; anterior extent of scales to top of pectoral-fin base (Fig. 3).

Front of head with rounded snout, forming an angle of about 65° to horizontal body axis; mouth terminal, inclined slightly obliquely upwards, forming an angle of about 50° to horizontal body axis; lower jaw not projecting; maxilla extending posteriorly to a vertical through posterior edge of pupil; teeth as illustrated by Winterbottom & Hoese (1988: Fig. 2); anterior tubular nares about one-third diameter of pupil in length, posterior nares with elevated rim; gill opening extending forward to below center of operculum; cephalic sensory-canal pores as shown for *S. lachneri* (Winterbottom & Hoese [1988]: Fig. 7) with POP, NA, AITO, PITO, SOT, and AOT pores present.

Urogenital papilla of male smooth, elongate, tapering, and pointed, reaching anal-fin base.

Measurements (percentage of SL; based on holotype, 16.5 mm SL): body slender, its depth 20.6; head length 28.2; origin of first dorsal fin 35.7, lying slightly behind posterior margin of pectoral-fin base; origin of second dorsal fin 57.0, well in advance of anal-fin origin; origin of anal fin 61.2; caudal-peduncle length 24.2; caudal-peduncle slender, with depth 12.7; eye diameter 10.0; snout length 3.9; pectoral-fin length 32.1; pelvic-fin length 30.3.

Color of fresh holotype. (Fig. 1) Background color of head and body orange-red, overlaid by darker orange-red on scale edges and other areas of body; snout and area around eye darker orange-red; a slightly oblique, orange-red bar below center of eye, passing posterior to corner of mouth; a dark reddish-orange area behind corner of eye; pupil of eye black, iris orange-red; cheek lighter orange-red with scattered darker small orange-red spots; operculum darker orange-red, as are bars crossing nape; pectoral-fin base with two vertically aligned, well



Figure 2. *Sueviota pyrios*, preserved holotype, BPBM 13361, 16.5 mm SL, Eilat, Gulf of Aqaba (D.W. Greenfield).

separated red spots, made up of clusters of chromatophores, each with a blackish collection of melanophores in center of cluster; body crossed by six internal red-orange bars, four postanal; seven bright-red spots spaced along ventral midline of body from anal-fin origin rearward, posteriormost at caudal-fin base, matched by similar spot dorsally; pelvic fins orange-red; both dorsal fins and caudal fin with large red spots arranged in rows along spines and soft rays; spines and rays of anal fin uniform red.

Color of preserved holotype. (Figs. 2 & 3) Background color of head and body light yellow; melanophores on body light brown, faded after 45 years in preservative; most obvious dark marks on body comprise two clusters of melanophores on pectoral-fin base, one dorsal and one ventral, and a scattering of melanophores on nape, top of head, and cheek; snout, jaws and area around eyes more translucent than rest of head; pupil of eye translucent, iris black; pelvic fins immaculate; pectoral fins with a few scattered melanophores along edges of rays, none on membranes; caudal fin with scattered melanophores on membranes; first dorsal fin with black areas on basal third of membrane, scattered melanophores on remainder of fin; second dorsal and anal fins with scattered melanophores.

Etymology. The specific epithet is from the Greek, *pyrios*, one of the four horses that pulled the chariot of the sun god Helios across the sky; in reference to the orange-red coloration of the species. It is a noun in apposition.

Distribution. The new species is currently known only from the type locality, the Gulf of Aqaba at the northern end of the Red Sea.

Comparisons. The new species has POP pores and dorsal/anal-fin 8/8, distinguishing it from *S. atrinasa* and *S. aprica*, which are missing the POP pores and have dorsal/anal-fin 9/8 and 10/9, respectively. The remaining four species all have POP pores, but can be distinguished vs. *S. pyrios* as follows: *S. tubicola* has dorsal/anal-fin 9/8 (vs. 8/8) and some branched pectoral-fin rays (vs. all unbranched); *S. larsonae* has a frenum and usually has



Figure 3. *Sueviota pyrios*, preserved and stained holotype, BPBM 13361, 16.5 mm SL, Eilat, Gulf of Aqaba (D.W. Greenfield).

dorsal/anal-fin 9/8 (vs. no frenum and 8/8); *S. bryozophila* shares dorsal/anal-fin 8/8 and unbranched pectoral-fin rays with *S. pyrios*, but the segmented pelvic-fin rays are unbranched, except for a single branching of the fifth ray (vs. all branched), and the fifth pelvic-fin rays are joined together by a membrane (vs. none), additionally *S. bryozophila* has only a single pair of mid-interorbital pores on the dorsal surface of the head (vs. anterior and posterior interorbital pores in *S. pyrios*); *S. lachneri* usually has dorsal/anal-fin 9/8 (vs. 8/8), some pectoral-fin rays branched (vs. unbranched), first dorsal-fin spines not elongate (vs. first two spines filamentous), and a single transverse line of melanophores on the center of the pectoral-fin base (vs. two vertically aligned dark spots). The fresh and preserved coloration of *S. lachneri* is also different (Fig. 4). The distinctive uniform red-orange fresh coloration of *Sueviota pyrios* also differs from all other described species.



Figure 4. *Sueviota lachneri*, fresh (above) and preserved (below), CAS 243689, 16.8 mm SL, female, Fiji (D.W. Greenfield).

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References

- Akihito, Sakamoto, K., Iwata, A. & Ikeda, Y. (1993) Cephalic sensory organs of the gobioid fishes. *In*: Nakabo, T. (Ed.), *Fishes of Japan with pictorial keys to the species*. Tokai University Press, Tokyo, Japan, pp. 1088–1116. [In Japanese]
- Allen, G.R. & Erdmann, M.V. (2017) *Sueviota tubicola*, a new species of coral-reef goby (Teleostei: Gobiidae) from Papua New Guinea. *Journal of the Ocean Science Foundation*, 25, 1–7. <http://dx.doi.org/10.5281/zenodo.262097>
- Allen, G.R., Erdmann, M.V. & Cahyani, N.K.D. (2016) *Sueviota bryozophila*, a new species of coral-reef goby from Indonesia (Teleostei: Gobiidae). *Journal of the Ocean Science Foundation*, 20, 76–82. <http://dx.doi.org/10.5281/zenodo.50519>
- Jewett, S.L. & Lachner, E.A. (1983) Seven new species of the Indo-Pacific genus *Eviota* (Pisces: Gobiidae). *Proceedings of the Biological Society of Washington*, 96 (4), 780–806.
- Lachner, E.A. & Karnella, S.J. (1980) Fishes of the Indo-Pacific genus *Eviota* with descriptions of eight new species (Teleostei: Gobiidae). *Smithsonian Contributions to Zoology*, 315, 1–127. <http://dx.doi.org/10.5479/si.00810282.315>
- Saruwatari, T., Lopez, J.A. & Pietsch, T.W. (1997) Cyanine blue: a versatile and harmless stain for specimen observations. *Copeia*, 1997 (4), 840–841. <http://dx.doi.org/10.2307/1447302>
- Winterbottom, R. & Hoese, D.F. (1988) A new genus and four new species of fishes from the Indo-West Pacific (Pisces; Perciformes; Gobiidae), with comments on relationships. *Royal Ontario Museum, Life Sciences Occasional Paper*, 37, 1–17.



Figure 5. Classical Greek vase with painting of Helios, the sun god, and his four chariot horses, Pyrios, Aethon, Aeos, and Phlegon; British Museum, London (photograph by Sebastià Giralt, Flickr, no changes were made, <https://creativecommons.org/licenses/by-nc-sa/2.0/legalcode>).