Acta Ichthyologica et Piscatoria 56, 2026, 467–474 | DOI 10.3897/aiep.56.208815

PENSOFT

ACTA ICHTHYOLOGICA ET PISCATORIA

New record of the long-fin mirror dory, *Zenopsis filamentosa* (Actinopterygii, Zeiformes, Zeidae), from Taiwan, with notes on *Z. stabilispinosa*

Yu-Chieh HSU[1], Hsuan-Ching HO[2,3,4], Yo SU[2,5], Tzu-Yung LIN[2]

1 *Department of Biological Sciences, National Sun Yat-sen University, Kaohsiung, Taiwan*
2 *Department of Aquaculture, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan*
3 *Australian Museum, Sydney, New South Wales, Australia*
4 *National Museum of Marine Biology and Aquarium, Checheng, Pingtung, Taiwan*
5 *International Doctoral Program of Marine Science and Technology, National Sun Yat-sen University, Kaohsiung, Taiwan*

https://zoobank.org/0C26C7EA-0D5E-4CD0-B23B-B5F68EBB2D09

Corresponding author: Tzu-Yung Lin (plextorx0428@nkust.edu.tw)

Academic editor: Ronald Fricke ♦ **Received** 21 July 2026 ♦ **Accepted** 9 September 2026 ♦ **Published** 3 November 2026

Citation: Hsu Y-C, Ho H-C, Su Y, Lin T-Y (2026) New record of the long-fin mirror dory, *Zenopsis filamentosa* (Actinopterygii, Zeiformes, Zeidae), from Taiwan, with notes on *Z. stabilispinosa*. Acta Ichthyologica et Piscatoria 56: 467–474. https://doi.org/10.3897/aiep.56.208815

Abstract

Two specimens of a dory were recently collected from Taiwan, representing the first specimen-based record of the species in the region. Based on the extremely long filaments on the spinous dorsal fin along with other morphological characters, these specimens were identified as the long-fin mirror dory, *Zenopsis filamentosa* Kai et Tashiro, 2019, a species previously described from Japan and the South Pacific Ocean. Our specimens fill a major distribution gap around Taiwan between Japan and the South Pacific. Here, we provide a detailed description and photographs of these specimens, as well as a comparison with other recorded specimens. Additionally, we include notes on the morphological variation of a specimen of *Zenopsis stabilispinosa* Nakabo, Bray et Yamada, 2006 newly collected from Taiwan.

Keywords

Biodiversity, ichthyology, morphology, taxonomy, deep-sea fish

Introduction

The dory family (Zeidae) is a small group of deep-bodied, laterally compressed fishes represented by two genera and six or seven nominal species (Kai and Tashiro 2019). Two species, *Zeus faber* Linnaeus, 1758 and *Zenopsis nebulosa* (Temminck et Schlegel, 1845), are commonly recorded from Taiwanese waters (Koeda 2019). Another rare species, *Zenopsis stabilispinosa* Nakabo, Bray et Yamada, 2006, was originally described from the South China Sea and Western Australia, with its paratypes collected in southwestern and northeastern Taiwan (Nakabo et al. 2006).

Recently, two small specimens of *Zenopsis filamentosa* Kai et Tashiro, 2019 were collected from Taiwan. Kai and Tashiro (2019) noted that a photograph labeled *Zeus faber* in Shen (1984) was a misidentification of *Z. filamentosa*; however, this record was omitted from the distribution map in their original description. Moreover, Shen (1984) did not provide the catalog number of the specimen, and no other specimens from Taiwan have been formally documented to date. The present specimens therefore represent the first confirmed specimen-based records of *Z. filamentosa* from Taiwan. In the present study, we formally document the species and provide a detailed description. In addition, another specimen of *Zenopsis stabilispinosa* was collected from Taiwan. The morphological variation of this specimen is also discussed.

Copyright *Hsu et al.* This is an open access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Materials and methods

Specimens were collected from the fish landing ground and transported to the lab for further preservation. Preserved specimens were deposited at the National Museum of Marine Biology and Aquarium, Pingtung, Taiwan (NMMB-P) and the National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan (NKUST-HO).

Counts and measurements follow those of Hubbs and Lagler (1958) and Heemstra (1980). Numbers of gill rakers and pseudobranchial filaments were generally taken from the right side of the specimens unless the character is damaged and those on the left side were adopted and noted. All measurements were measured point to point by calipers. **Standard length (SL)** is measured from tip of snout to caudal-fin base (posterior margin of hypural plate). **Body depth** is measured between origins of dorsal and anal fins. **Snout length** is measured from tip of snout to anterior margin of eye. **Eye diameter** is measured from horizontal distance of anterior and posterior margin of eye. **Suborbital depth** is measured from lower margin of eye to lower margin of first suborbital bone (right above upper jaw). **Interorbital width** is the narrowest distance between upper margins of both eyes. **Post-orbital length** is measured from posterior margin of eye to posteriormost margin of gill cover (including skin flap). **Upper jaw** is measured from tip of snout to posterior end of maxilla. **Lower jaw** is measured from tip of lower jaw to posterior joint of articular. **Predorsal, prepectoral, prepelvic, and preanal lengths** are measured from tip of snout to origin of the fin, respectively. **Lengths of dorsal- and anal-fin bases** are measured from the origin to the end of the base, respectively. **Lengths of dorsal- and anal-fin spines** are measured from base to tip of each spine, respectively. **Lengths of dorsal-fin filaments** are measured from base of each spine to tip of its filament, respectively. **Caudal-peduncle length** is measured from end of anal-fin base to middle of caudal fin base. **Caudal-peduncle depth** is the narrowest distance between upper and lower margins of caudal peduncle. **Caudal-fin length** is measured from middle of caudal-fin base to tip of upper fin lobe.

Results

Family Zeidae

Zenopsis filamentosa Kai et Tashiro, 2019

New Chinese name: 長絲鰭雨印鯛
(Figs. 1, 2, 3; Tables 1, 2)

Zenopsis filamentosa Kai et Tashiro, 2019.—Kai and Tashiro (2019): 341, figs. 1a, 2a, 3a (Type locality: Tosa Bay, off Okitsu, Kochi Prefecture, Japan, ca. 33.1°N, 133.3°E, 280 m).—Wada et al. (2021): 43 (southwestern Satsuma Peninsula, Kagoshima Prefecture, Japan).—Koeda et al. (2022): 78 (catalog of specimens).—Koreeda and Motomura (2025): 28 (Koshiki Islands, Kagoshima Prefecture, Japan).

Zeus faber (non Linnaeus).—Shen (1984): 26, pl. 26, 249-1a (in part, northeastern Taiwan).

Specimens examined. NMMB-P35905, 114.9 mm SL, off Daxi fishing port (24°53′37″N, 121°55′26″E), Yilan, northeastern Taiwan, 13 Aug. 2021, coll. Y. Su. NKUST-HO 00002, 69.7 mm SL, off Nan-fang-ao fishing port (24°35′N, 121°52′E), Yilan, northeastern Taiwan, 18 May 2026, coll. W.-C. Lin.

Description of Taiwanese specimens. Meristic and morphometric data are shown in Tables 1–2.

Dorsal-fin rays IX, 24–25. Anal-fin rays III, 23–24. Pectoral-fin rays 12/12, all unbranched. Pelvic-fin rays I, 5. Principal caudal-fin rays 6 + 7; procurrent caudal-fin rays 1 and 1–2 on upper and lower lobes, respectively. Gill rakers 3–4 + 7–8 = 10–12. Pseudobranchial filaments 17. Body extremely deep and compressed, rhombus in outline, deepest between origins of dorsal and anal fins; dorsal and ventral profiles strongly convex.

Head somewhat rectangular, dorsal margin of head slightly concave (nearly straight in smaller individual). Snout moderately long, broadly triangular. Orbit rounded, except for small convexity at dorsal-anterior corner; dorsal rim with bony ridge, anterior end of frontal forming spine, posterior portion 2 or 3 blunt, flat spines; and one short ridge on lateral ethmoid, situated in front of eye at about level of lower 1/3 of eye, ended with one blunt spine on orbital rim.

Mouth superior, moderately large, strongly oblique and protrusible; mandible not fully included when mouth closed, posterior maxilla truncate, its end well in front of eye. Mandible long, with two small spines at front and one large triangular plate behind, ended by a strong spine. Two small knob-like spines on joint of mandible and preopercle. Small knob-like spines on upper ends of hyomandibula and post-temporal.

Two nostrils close to each other, situated right in front of upper corner of eye; anterior nostril rounded, posterior a kidney-shaped pore. Teeth small and caniniform, those on upper jaw arranged in 2 irregular rows anteriorly, followed by a gap, and then in single row posteriorly; those on lower jaw forming single row of small teeth. No teeth on vomer and palatines.

Upper portion of four gill arches connected to each other by membranes, posterior margin of fourth arch entirely attached to body; gill filaments well developed in all gill arches. Gill rakers short and blunt, present in all four gill arches. Lateral line strongly arched below spinous portion of dorsal fin; posteriorly running along body axis. Pseudobranch well developed with long filaments.

Dorsal fin with long base, its origin before vertical through posterior margin of opercle; dorsal-fin spines long, with third longest; anterior seven spines with filamentous membranes, extremely long on second to fourth, more than twice SL; eighth and ninth spines bearing short filament at tips; soft rays uniformly short. Anal fin with long base, about symmetrical to soft-rayed portion of dorsal fin; three short, robust spines, first spine longest, third spine short and movable, not fused with supporting pterygiophore. Pectoral fin situated below posterior 1/3 of eye, with narrow base, fin rays not especially long, upper rays longer, gradually shorter on lower portion. Pelvic fin extremely long, extending to

Figure 1. Fresh coloration of *Zenopsis filamentosa*, NKUST-HO 00002, 69.7 mm SL.

about 1/3 of anal-fin base; its spine also long and slender. Caudal fin slightly emarginate (truncate in smaller specimen).

Dorsal-fin base with 13–14 large bucklers along dorsal-fin base, 6–7 on spinous portion, 7 on soft-rayed portion; 6th or 7th to 13th or 14th bucklers bearing strong spine directed upward, no spines on anterior 4–5 bucklers. Four bucklers (1 single + 3 pairs) on ventral midline anterior to pelvic fin; one single buckler right behind pelvic-fin base followed by two rows of bucklers, 6–7 in each row, on ventral margin between pelvic fins and anus; each buckler bearing a single posteriorly directed spine. One row of 7 or 8, with last one small, large bucklers along base of soft-rayed part of anal fin, each buckler with single spine directed posteroventrally; no bucklers above anal-fin spines.

Body smooth, without scales, except for small scales on lateral line.

Coloration (Figs. 1, 2). When fresh, body silvery white with many rounded markings. Spinous dorsal fin with black blotches, with filamentous rays black, occasionally with white blotches; soft-ray portion of dorsal fin pale; dorsal-fin base dusky, with two indistinct blotches. Pectoral fin slightly dusky, its base black. Pelvic fin with about 5 alternating pairs of pale and black stripes. Anal fin with blotches along its base and on membrane between first two spines; soft-ray portion pale. Caudal fin slightly dusky, with its base and distal margin black. When preserved, color similar to fresh. Dorsal margins of head, nape, and dorsal- and anal-fin bases dark. Oral cavity, including underside of tongue pale, slightly dusky; gill arches, rakers, and peritoneum pale.

Distribution. As no voucher specimens were indicated in Shen (1984), our specimens represent the first specimen-based record from Taiwan. This species appears to be widely distributed in the western Pacific, including Japan, Kyushu–Palau Ridge, Taiwan, Fiji, Tonga, and New Zealand (Kai and Tashiro 2019; Fig. 3).

Figure 2. Preserved coloration of *Zenopsis filamentosa*, NMMB-P35905, 114.9 mm SL.

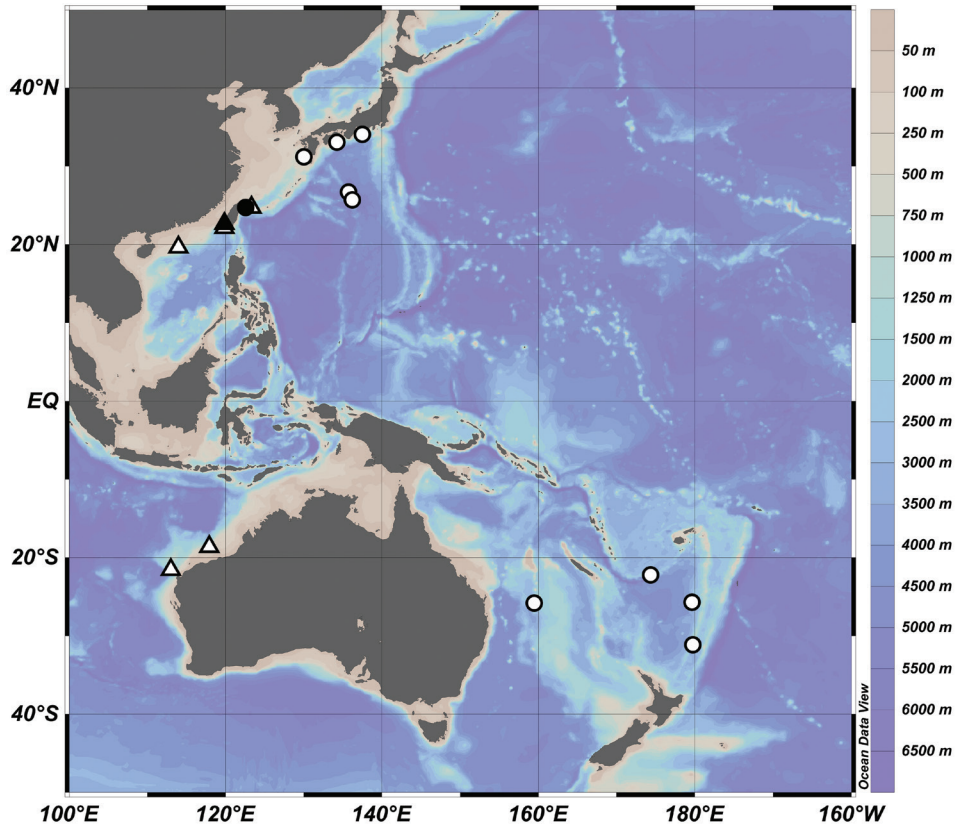

Figure 3. Distribution map of *Zenopsis filamentosa* (circles) and *Z. stabilispinosa* (triangles). Closed symbols represent this study, open symbols are previous records (James and Inada 1990; Kai and Tashiro 2019). Map was generated from Ocean Data View (Schlitzer 2026).

Table 1. Meristic characters of *Zenopsis filamentosa*, with comparison to literature records.

Character	This study		Kai and Tashiro 2019		Wada et al. 2021
	NMMB-P35905	NKUST-HO 00002	HT	PT + NT (*n* = 33)	NT (*n* = 1)
Dorsal-fin rays	IX, 25	IX, 24	IX, 25	IX, 24–27	IX, 26
Pectoral-fin rays	12/12	12/12	12	11–13	12
Pelvic-fin rays	I, 5/I, 5	I, 5/I, 5	—	—	I, 5
Anal-fin rays	III, 24	III, 23	III, 24	III, 24–25	III, 25
Gill rakers	4 + 8 = 12	3 + 7 = 10	3 + 7 = 10	2–4 + 7–10	4 + 8 = 12
Pseudobranchial filaments	17	17[L]	—	—	—
Dorsal bucklers*	7 + 7/7 + 7	6 + 7/6 + 7	4 + 6	4–7 + 6–9	5 + 8
Ventral bucklers**	4 + 7 + 7/4 + 7 + 8	4 + 8 + 7/4 + 7 + 7	5 + 7 + 7	3–5 + 6–9 + 6–8	5 + 7 + 7

Paired characters are presented as left/right whenever available. [L]data taken from left side. *On spinous + soft dorsal-fin base. ** Anterior to pelvic fin + between pelvic and anal fins + on anal-fin base. HT, holotype; NT, non-type(s); PT, paratypes.

Table 2. Morphometric characters of *Zenopsis filamentosa*, with comparison to literature records.

Character	This study		Kai and Tashiro 2019		Wada et al. 2021
	NMMB-P35905	NKUST-HO 00002	HT	PT + NT (*n* = 33)	NT (*n* = 1)
Absolute values [mm]					
Standard length (SL)	114.9	69.7	249.0	48.8–345.8	151.9
Relative values [% SL]					
Body depth	68.0	75.6	60.6	56.1–69.8	66.8
Head length	41.6	42.3	38.6	36.4–42.1	39.1
Snout length	21.0	21.2	19.0	17.9–20.4	19.6
Suborbital depth	12.5	12.6	—	—	—
Eye diameter	9.8	11.0	9.1	8.8–12.0	10.5
Interorbital width	7.5	7.9	7.7	6.3–7.7	6.9
Post-orbital length	15.1	13.6	11.0	10.1–12.3	10.8
Upper-jaw length	17.9	19.1	16.1	15.9–19.8	18.2
Lower-jaw length	27.3	26.5	25.4	23.9–29.8	27.6
Predorsal length	42.1	43.2	39.2	38.3–45.0	43.7
Prepectoral length	34.3	32.4	—	—	—
Prepelvic length	40.3	38.5	37.1	32.5–47.4	34.5
Preanal length	73.3	74.2	63.4	56.8–75.9	66.1
Dorsal-fin base	58.5	61.7	—	—	—
1st dorsal-fin spine	37.3	31.4	39.2	28.1–43.7	38.7
2nd dorsal-fin spine	43.6	—	54.9	47.4–67.6	50.7
3rd dorsal-fin spine	43.7	—	54.4	46.7–70.5	53.5
4th dorsal-fin spine	—	—	48.6	45.9–65.1	—
5th dorsal-fin spine	37.5	33.4	43.6	37.9–60.3	42.0
Pectoral-fin length	18.4	17.6	17.7	15.6–18.8	17.8
Pelvic-fin spine	40.8	36.9	—	—	—
Pelvic-fin length	54.8	68.6	45.5	40.1–61.1	51.0
Anal-fin base	48.8	51.2	—	—	—
1st anal-fin spine	10.0	11.8	8.7	4.0–11.8	8.2
2nd anal-fin spine	7.7	8.8	7.1	4.3–9.4	6.5
3rd anal-fin spine	5.1	5.9	6.0	3.2–7.0	3.7
Caudal-peduncle length	9.4	9.3	11.8	8.6–11.5	9.9
Caudal-peduncle depth	5.2	5.6	4.9	4.7–5.7	5.3
Caudal-fin length	24.8	25.1	22.5	19.8–26.2	24.1
Longest dorsal-fin filament	252.4	200.9	—	—	307.0

HT, holotype; NT, non-type(s); PT, paratypes.

Discussion

Comparison of other specimens of *Z. filamentosa*. Our specimens were identified as *Z. filamentosa* based on their elongated dorsal-fin filaments—which exceed twice the SL—and the absence of bucklers above the anal-fin spines (Kai and Tashiro 2019; Wada et al. 2021). The morphometric and meristic data of our specimens generally agree with previous records; however, the smaller specimen (NKUST-HO 00002, 69.7 mm SL) exhibits a distinctly greater body depth (75.6%, vs. 56.1%–69.8% SL; Table 2) and a longer pelvic fin (68.6%, vs. 40.1%–

61.1% SL), which need further confirmation, as such differences appear not to be related to growth or different geographic populations. Other measurements of our specimens also fall outside the known ranges: post-orbital length (13.6–15.1% vs. 10.1–12.3% SL), snout length (21.0–21.2% vs. 17.9–20.4% SL), head length (41.6–42.3% vs. 36.4–42.1% SL), and interorbital width (7.5–7.9% vs. 6.3–7.7% SL). Besides, the lengths of the second, third, and fifth dorsal-fin spines are shorter than previously recorded (43.6% vs. 47.4–67.6% SL; 43.7% vs. 46.7–70.5% SL; 37.5% vs. 37.9–60.3% SL, respectively). These discrepancies, along with the two measurements mentioned above, warrant further investigation to determine whether they stem from variations in measurement methods. Additionally, although previous literature (Kai and Tashiro 2019; Wada et al. 2021) reported nine dorsal-fin spines, the terminal dorsal-fin spine in our specimens is soft and segmented, closely resembling a soft ray. Nevertheless, we follow Kai and Tashiro (2019) and Wada et al. (2021) in regarding it as a spine. Lastly, given their small size, both specimens are juveniles, displaying body markings that are notably darker and more distinct than those of the adults in the original description.

Notes on *Z. stabilispinosa* Nakabo, Bray et Yamada, 2006. A specimen of *Zenopsis* (NKUST-HO 00003,

Figure 4. Fresh coloration of *Zenopsis stabilispinosa*, NKUST-HO 00003, 157.0 mm SL.

Table 3. Meristic characters of *Zenopsis stabilispinosa*, with comparison to type series.

Character	This study	Nakabo et al. 2006	
	NKUST-HO 00003	HT	PT (*n* = 9)
Dorsal-fin rays	VII, 26	VII, 26	VII, 27
Pectoral-fin rays	13/13	12/12	12–13
Pelvic-fin rays	I, 5/I, 5	6 (total elements)	6 (total elements)
Anal-fin rays	III, 23	III, 23	III, 23
Gill rakers	3 + 9 = 12	3 + 7 = 10	3–4 + 8–10
Pseudobranchial filaments	25	—	—
Dorsal bucklers*	2 + 5/2 + 5	4 + 6	3–4 + 5–6
Ventral bucklers**	5 + 5 + 5/5 + 5 + 5	6 + 6 + 5	5–6 + 6–7 + 5–6

Paired characters are presented as left/right whenever available. *On spinous + soft dorsal-fin base. ** Anterior to pelvic fin + between pelvic and anal fins + on anal-fin base. HT, holotype; PT, paratypes.

Table 4. Morphometric characters of *Zenopsis stabilispinosa*, with comparison to type series.

Character	This study	Nakabo et al. 2006	
	NKUST-HO 00003	HT	PT (*n* = 9)
Absolute values [mm]			
Standard length (SL)	157.0	381.1	82.2–356.8
Relative values [% SL]			
Body depth	61.1	55.8	54.5–79.6
Head length	37.8	36.1	36.4–41.5
Snout length	18.2	18.8	19.2–20.5
Suborbital depth	13.1	—	—
Eye diameter	8.8	7.1	7.3–10.6
Interorbital width	7.0	5.6	5.4–8.3
Post-orbital length	13.7	14.2	11.2–15.2
Upper-jaw length	16.3	—	—
Lower-jaw length	25.0	—	—
Predorsal length	41.1	39.0	21.3–45.0
Prepectoral length	31.8	—	—
Prepelvic length	42.1	—	—
Preanal length	70.8	63.5	67.4–80.8
Dorsal-fin base	56.4	—	—
1st dorsal-fin spine	23.7	17.6	20.2–23.9
2nd dorsal-fin spine	—	—	—
3rd dorsal-fin spine	27.1	—	—
4th dorsal-fin spine	21.5	—	17.1–18.0
5th dorsal-fin spine	15.4	13.0	9.9–20.6
Pectoral-fin length	15.0	14.1	13.3–15.8
Pelvic-fin spine	17.6	—	—
Pelvic-fin length	28.1	21.4	20.6–40.6
Anal-fin base	48.3	—	—
1st anal-fin spine	6.7	4.6	4.3–9.4
2nd anal-fin spine	4.8	4.3	3.4–8.5
3rd anal-fin spine	3.1	2.6	3.2–5.8
Caudal-peduncle length	10.7	10.8	7.7–11.1
Caudal-peduncle depth	5.0	5.5	4.6–6.0
Caudal-fin length	24.2	21.7	20.2–26.2
Longest dorsal-fin filament	118.5+	—	—

HT, holotype; PT, paratypes.

157.0 mm SL; Fig. 4) was recently collected from southwestern Taiwan and identified as *Z. stabilispinosa* based on the presence of VII dorsal-fin spines and an immovable third anal-fin spine (Nakabo et al. 2006; Tables 3–4). Compared to the data of type series (Nakabo et al. 2006; Tables 3–4), our specimen closely aligns with those of type series, with the exception that our specimen possesses slightly fewer bucklers in ventral series. However, our specimen possesses an elongated dorsal-fin membrane exceeding 118.5% SL (with tip

broken), a feature strongly reminiscent of *Z. filamentosa*. Additionally, the two specimens depicted in Koeda (2019) (KAUM–I. 110239, 172 mm SL and KAUM–I. 115148, 108 mm SL) also show slightly elongated dorsal-fin membrane, but apparently less than SL. It is likely that the elongated dorsal-fin membrane in our specimen represents an unusual intraspecific variation within *Z. stabilispinosa*.

Comparative material. *Zenopsis stabilispinosa*. NKUST-HO 00003, 157.0 mm SL, off Dong-gang fishing port, Pingtung, southwestern Taiwan, 14 Jun. 2026, coll. K.-H. Wu.

Acknowledgments

We thank W.-C. Lin and K.-H. Wu (NSYSU) for specimen collection; Po-Na Lee (NMMB-P) for curatorial assistance; K. Kumaki (BSKU) for literature searching. This study was supported by the National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan.

References

Heemstra PC (1980) A revision of the zeid fishes (Zeiformes: Zeidae) of South Africa. Ichthyological Bulletin of the J. L. B. Smith Institute of Ichthyology No. 41: i–iii + 1–18, pls. 1–2.

Hubbs CL, Lagler KF (1958) Fishes of the Great Lakes region. University of Michigan Press, Ann Arbor, MI, USA, 213 pp. https://doi.org/10.3998/mpub.12946839

James GD, Inada T (1990) Zeidae. In: Amaoka K, Matsuura K, Inada T, Takeda M, Hatanaka H, Okada K (Eds.) Fishes collected by the R/V Shinkai maru around New Zealand. Japan Marine Fishery Resource Research Center, Tokyo, 213–218.

Kai Y, Tashiro F (2019) *Zenopsis filamentosa* (Zeidae), a new mirror dory from the western Pacific Ocean, with redescription of *Zenopsis nebulosa*. Ichthyological Research 66(3): 340–352. https://doi.org/10.1007/s10228-018-00679-1

Koeda K (2019) Family Zeidae. In: Koeda K, Ho H-C (Eds.) Fishes of southern Taiwan. National Museum of Marine Biology and Aquarium, Pingtung, 479–480.

Koeda K, Aizawa M, Sakamoto K, Ueshima R (2022) Report on the specimens of family Zeiformes (Teleostei) deposited in the Department of Zoology, The University Museum, The University of Tokyo. University Museum, University of Tokyo Material Reports No. 129: 75–85.

Koreeda R, Motomura H (2025) An annotated checklist of marine and freshwater fishes of the Koshiki Islands and adjacent waters, Kagoshima, southern Japan, with 353 new records. Bulletin of the Kagoshima University Museum 21: 1–119.

Nakabo T, Bray DJ, Yamada U (2006) A new species of *Zenopsis* (Zeiformes: Zeidae) from the South China Sea, East China Sea and off Western Australia. Memoirs of Museum Victoria 63(1): 91–96. https://doi.org/10.24199/j.mmv.2006.63.11

Schlitzer R (2026) Ocean Data View. Version ODV 5.8.6. https://odv.awi.de/ [Accessed on 10 September 2026]

Shen S-C (1984) Coastal fishes of Taiwan. Department of Zoology, National Taiwan Museum, Taipei. 380 pp. [In Chinese and English]

Wada H, Itou M, Motomura H (2021) First record of *Zenopsis filamentosa* (Zeidae) from the Satsuma Peninsula, Kagoshima Prefecture, Japan, and an assessment of the diagnostic characters of *Z. nebulosa*. Ichthy, Natural History of Fishes of Japan 13: 43–49.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Artificial Intelligence (AI) use

The authors accept full responsibility for the content of the manuscript, including the disclosure of any use of AI.
Regarding the use of AI in the preparation of this manuscript, the authors declare the following: Gemini
Used for: Language, style and writing
Part of the text was reviewed by the AI, with correction on English and grammar, but not fully accepted.

Funding

This study was supported by the National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan.

Author contributions

Hsu and Ho developed the study and prepared the manuscript; Hsu and Su prepared photos and taking data; Lin provided research resource.

Author ORCIDs

Y.-C. Hsu https://orcid.org/0009-0000-1905-4656
H.-C. Ho https://orcid.org/0000-0003-1154-601X
Y. Su https://orcid.org/0000-0002-3576-9229
T.-Y. Lin https://orcid.org/0000-0002-9034-4397

Data availability

All of the data that support the findings of this study are available in the main text.