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Saurenehelys gigas sp. nov., a new nettastomatid eel (Teleostei, Anguilliformes, Nettastomatidae) from the western central Pacific

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Abstract

Some large *Saurenehelys* specimens collected from Daxi, Yilan, NE Taiwan, and Da Nang, Vietnam, by bottom trawl at depths of 100–200 m, are described as *Saurenehelys gigas* new species. They differ from all known adult *Saurenehelys* species by predorsal length 40.9–46.8, head length 36.8–39.3 in % of preanal length, 38–40 preanal vertebrae, 63–70 pre-caudal vertebrae, 38–42 preanal lateral-line pores, 56–63 preanal dorsal fin rays, and larger size (the maximum size 1155 mm TL).

Key words: new species, taxonomy, Nettastomatidae, large, Pacific

Introduction

Saurenehelys is a genus within the family Nettastomatidae characterized by the absence of pectoral fins, the position of the posterior nostrils at mid-eye level, and the presence of pterygoid teeth. Like other nettastomatid eels, the species of *Saurenehelys* inhabit tropical and subtropical offshore waters of the continental shelf and slope worldwide (Nelson, 2006).

The convoluted history of this genus was summarized by Smith (1989:591). It was originally described by Peters (1864) for his new species *Saurenehelys cancrivora*. There was initial confusion over where this specimen was collected, but subsequent studies indicate that it was from India. Since then, seven additional species have been described from adult specimens: *S. petersi* Day, 1878; *S. fierasfer* (Jordan & Snyder, 1901); *S. finitima* (Whitley, 1935); *S. elongata* (Kotthaus, 1968); *S. cognita* Smith, 1989; *S. meteori* Klauswitz & Zajonz, 2000; and *S. taiwanensis* Karmovskaya, 2004. In addition, there are two names based on larvae: *S. stylura* (Lea, 1913) and *S. lateromaculata* (D'Ancona, 1928).

The taxonomy of this genus is still poorly known, and the status of the nominal species is uncertain. The differences between species are subtle, and some characters, such as vertebral counts, are not visible externally. In addition, there are a number of undescribed species. More work needs to be done, but the new species described in this paper is the most distinctive, and we choose to describe it now and treat the other species in a subsequent paper.

Materials And Methods

The type specimens from Taiwan were fixed in 95% ethanol or 10% formalin and then transferred into 70% ethanol, and are now deposited at National Taiwan Ocean University, Laboratory of Aquatic Ecology, Taiwan

(TOU-AE); National Museum of Marine Biology & Aquarium, Taiwan (NMMBP); and National Museum of Natural History, Washington, DC, U.S.A. (USNM). They were collected by commercial fishing trawlers in water depths of about 100–200 m.

Measurements are straight-line (point to point) and made with dial calipers to the nearest 0.1 mm. The morphometric measurements and vertebral counts are as in Böhlke (1989); vertebral counts were taken from radiographs. Cephalic pore terminology follows that of Smith *et al.* (1981) and Karmovskaya (1994). Illustrations and photographs are by James Lin.

Abbreviations are as follows: IO, infraorbital pores; POM, preoperculomandibular pores; SO, supraorbital pores; ST, supratemporal pores; LL, lateral line; PALL, preanal lateral-line pores; PDLL, predorsal lateral-line pores; PADR, preanal dorsal fin rays; TV, total vertebrae; PAV, preanal vertebrae; PDV, predorsal vertebrae; PCV, precaudal vertebrae; PAM, preanal myomeres; TM, total myomeres; TL, total length; PAL, preanal length; TR, trunk length; PDL, predorsal length; HL, head length; IOW, interorbital width; UJ, length of upper jaw; LJ, length of lower jaw; E, diameter of eye; S, snout length; DGO, depth at gill-opening; DA, depth at anus. The proportional measurements and meristic counts are given in Table 1 and Table 2.

TABLE 1. Comparison of characters in *Saurenehelys gigas* with holotypes of five other species of *Saurenehelys*. Except where noted, data for *S. cancrivora*, *S. fierasfer*, and *S. elongata* from Klausewitz & Zajonz, 2000; data for *S. taiwanensis* from Karmovskaya, 2004; data for *S. finitima* provided by J. Pogonoski. ¹From Karrer, 1983: page 65. *From paratype, USNM 49728. **From largest paratype.

Character	<i>S. gigas</i>	<i>S. cancrivora</i>	<i>S. fierasfer</i>	<i>S. elongata</i>	<i>S. taiwanensis</i>	<i>S. finitima</i>
PAV	38–40	30	27	31	34	27
PDV	9–12	6	6	7	5	8
PCV	63–70	51 ¹	49*	50 ^{**}	59	ca. 45
PALL	38–42	30	27	34	32	28
PADR	58–63	40	38	44	62	ca. 38
TR in % PAL	59.8–67.3	57.5	54.6	54.1	57.5	52.8
PDL in % PAL	40.9–46.8	46.9	50.8	49.3	40.6	51.0
HL in % PAL	36.8–39.3	42.6	45.2	45.9	42.3	47.2
E in % HL	7.5–11.3	12.8	9.3	8.6	9.7	10.5
S in % HL	31.9–37.3	35.1	39.2	35.3	33.3	36.3

DNA extractions were performed with the QuickGene DNA tissue kit S (DT-S). A barcode fragment of approximately 590 base pairs (bp) was amplified from the 5' region of the mitochondrial cytochrome c oxidase subunit I gene (COI) by using the universal primer of Ivanova *et al.* (2007). Sequences (590bp) were aligned using CLUSTAL W. Sequence divergence was calculated using MEGA 4 with the Kimura 2-parameter (K2P) model (50,000 bootstrap) generating a mid-point rooted neighbor-joining (NJ) phenogram to provide a graphic representation of the species divergence (Kimura, 1980; Tamura *et al.*, 2007). The COI gene sequences were then submitted to Genbank under the accession numbers of KT229548—KT229561.

Taxonomy

Saurenehelys gigas Lin, Smith & Shao, sp. nov.

New English name: Giant duckbill eel

Figs. 1–6; Tables 1–2

Saurenehelys sp. E: Smith & Castle, 1982:33 (part, specimen from Java).

Saurenehelys sp. 1: Tabeta & Mochioka, 1988:57.

TABLE 2. Counts and proportions (in hundredths of total length) of *Saurenehelys gigas* sp. nov., compared with *S. fierasfer* and *S. taiwanensis*.

	<i>Saurenehelys gigas</i> sp. nov.			<i>Saurenehelys fierasfer</i>		<i>Saurenehelys taiwanensis</i>	
	Holotype	Paratypes					
TL	845 (mm)	487–1155 (mm)		375–670 (mm)		312–511 (mm)	
% of TL in ca.		Range (specimens)	Mean	Range (specimens)	Mean	Range (specimens)	Mean
PAL	26.6	23.0–26.6 (6)	24.7	20.0–26.7 (5)	22.6	25.4–27.7 (4)	26.6
Tail	73.4	75.1–77.0 (6)	75.3	73.3–80.0 (5)	77.4	72.3–74.6 (4)	73.4
TR	16.6	13.8–16.6 (6)	15.5	12.7–15.5 (5)	13.9	16.9–18.9 (4)	17.9
PDL	10.9	10.5–11.4 (6)	10.9	9.7–13.9 (5)	11.3	9.4–11.5 (4)	10.5
HL	9.8	9.0–9.9 (6)	9.4	8.2–12.0 (5)	9.6	9.0–10.7 (4)	9.7
DGO	2.8	1.9–2.9 (6)	2.5	2.3–2.7 (5)	2.5	1.9–2.7 (4)	2.3
DA	2.0	2.0–2.4 (6)	2.3	1.5–2.4 (5)	1.9	1.3–2.2 (4)	1.9
% of PAL							
TR	62.2	59.8–67.3 (7)	63.3	58.0–63.8 (5)	61.9	64.3–68.7 (5)	66.7
PDL	40.9	40.9–46.8 (7)	44.3	46.1–52.0 (5)	49.9	37.2–41.3 (5)	39.5
HL	36.9	36.8–39.3 (7)	38.0	39.0–45.0 (5)	42.2	34.8–38.5 (5)	36.0
% of TR							
PDL	65.7	65.7–76.1 (7)	70.1	72.2–89.7 (5)	80.9	55.6–62.5 (5)	59.3
HL	59.3	56.0–65.7 (7)	60.1	61.1–77.6 (5)	68.3	51.1–56.3 (5)	54.0
% of HL							
IOW	6.9	6.7–8.8 (7)	7.6	4.5–6.5 (5)	5.5	5.1–7.4 (5)	6.1
UJ	49.3	45.3–52.7 (7)	49.3	50.6–56.7 (5)	54.4	46.6–54.2 (5)	51.9
LJ	44.3	41.5–47.6 (7)	44.5	45.7–50.8 (5)	48.6	44.4–50.9 (5)	48.7
E	8.5	7.5–11.3 (7)	9.4	7.8–11.9 (5)	9.5	9.2–13.2 (5)	10.9
S	34.2	31.9–37.3 (7)	34.7	39.1–41.4 (5)	40.2	35.8–38.7 (5)	37.6
Vertebrae							
		Range (specimens)	Mode	Range (specimens)	Mode	Range (specimens)	Mode
PDV	9	9–12 (7)	10	7–9 (5)	9	6–7 (5)	6
PAV	39	38–40 (7)	39	29–32 (5)	32	33–36 (5)	34
TV	189+	218 (2)	218	218 (1)	218	224 (1)	224
PCV	65	63–70 (7)	65	49–52 (5)	49	53–58 (5)	58
Lateral line							
PDLL	9	7–10 (7)	9	6–8 (5)	8	5–8 (5)	6
PALL	40	38–42 (7)	40	30–32 (5)	30	33–37 (5)	33
Soft rays							
PADR	59	56–63 (7)	56	40–48 (5)	42	63–68 (5)	63
Sensory pores							

...Continued on next page

TABLE 2. (Continued)

	<i>Saurenehelys gigas</i> sp. nov.		<i>Saurenehelys fierasfer</i>	<i>Saurenehelys taiwanensis</i>
	Holotype	Paratypes		
IO		5 + 3 (11)	5 + 3 (5)	5 + 3 (5)
POM		14 (11)	14 (5)	14 (5)
SO		5 + 1 unpaired (11)	5 + 1 unpaired (5)	5 (69), 6 (1)
ST		3 (11)	3 (5)	3 (5)

Holotype. TOU-AE 6530, 845 mm TL, mature female, with mature egg size 1–2 mm, collected from the bottom trawl fish market at Daxi, Yilan, northeastern Taiwan, at a depth of approximately 100–200 meters, 19 Jul. 2012. Collector: J. Lin.

Paratypes. 10 specimens, 487–1155 mm TL. Collected from Daxi, Yilan, NE Taiwan: USNM 408902 (formerly AE5948), 1155 mm TL, mature female, 10 Jan. 2012; USNM 408903 (formerly AE5949), 844 mm TL, mature male, 10 Jan. 2012; TOU-AE 5883, 863 mm TL, mature male, Taiwan, 28 Nov. 2011; TOU-AE 5950, 796 mm TL (tail damaged), mature female, 10 Jan. 2012; TOU-AE 6583, 834 mm TL, mature male, Taiwan, 20 Aug. 2012; TOU-AE 6645, 1040 mm TL, mature female, 16 Oct. 2012; TOU-AE 6646, 851 mm TL, mature male, 16 Oct. 2012; TOU-AE 6647, 872 mm TL, mature male, 16 Oct. 2012; TOU-AE 6648, 676 mm TL, mature female, 16 Oct. 2012. Collected from Da Nang, Vietnam: NMMP 12465: 487 mm TL, immature male, 11 Apr. 2012, coll. H.-C. Ho.



FIGURE 1. Holotype of *Saurenehelys gigas* sp. nov., TOU-AE 6530, 845 mm TL, mature female, Daxi, Yilan, Taiwan. Lateral view of whole body, bar indicates the position of anus. Bar = 10 mm.

Diagnosis. The new species *Saurenehelys gigas* distinguished from other adult *Saurenehelys* species by its predorsal length (40.9–46.8 % of PAL, 65.7–76.1 % of TR), head length (36.8–39.3% of PAL, 56.0–65.7 % of TR),

vertebrae (38–40 before anus, and 63–70 precaudal), preanal lateral-line pores 38–42, preanal dorsal-fin rays 56–63, and especially its larger size (the maximum size reaching 1155 mm TL, 33 mm DGO).

Description. Meristic features: TV 218, PAV 38–40, PDV 9–12, PCV 63–70. PALL 38–42, PDLL 7–10. PADR 56–63. SO 6, including a single median pore behind posterodorsal margin of eye, IO 5+ 3, POM 14, ST 3. Measurements in percent of TL: PAL 23.0–26.6, Tail 75.1–77.0, TR 13.8–16.6, PDL 10.5–11.4, HL 9.0–9.9, DGO 1.9–2.9, DA 2.0–2.4; in percent of PAL: TR 59.8–67.3, PDL 40.9–46.8, HL 36.8–39.3; in percent of HL: IOW 6.7–8.8, UJ 45.3–52.7, LJ 41.5–47.6, E 7.5–11.3, S 31.9–37.3.

Body and head elongate, cylindrical anteriorly, tail becoming narrow and tapering. Anus located before mid-length of body, length before anus about 4 times in total length. Pectoral fin absent. Dorsal and anal fins continuous around tail; origin of dorsal fin behind gill opening; height of both dorsal and anal fins about half body depth. Gill opening lateral and below mid body. Snout elongate, narrow, its tip soft and fleshy. Upper jaw extending beyond lower jaw and intermaxillary tooth patch. Eye well developed, shape slightly oval, located about one-third of the way between snout tip and gill opening. Rictus at or slightly level of posterior margin of eye. Anterior nostril tubular, opening laterally just behind tip of snout; posterior nostril oval, located just before anterior margin of eye at mid-eye level, with a flap anteriorly and dorsally along its rim.

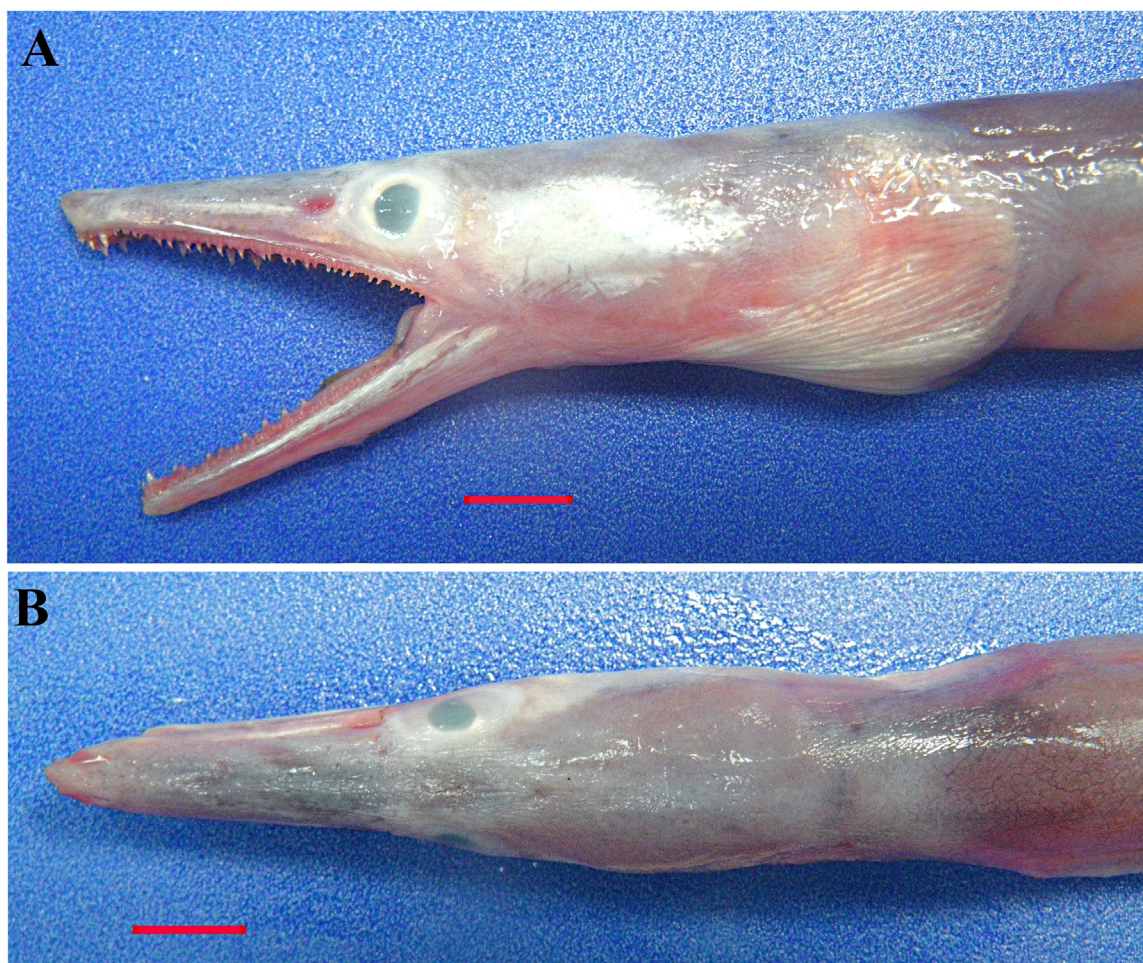


FIGURE 2. Head of *Saurenehelys gigas* sp. nov., holotype, TOU-AE6530. A. Lateral view of head; B. Dorsal view of head. Bar = 10 mm.

Cephalic sensory pores observable, especially on the larger specimens (Fig. 3). IO canal with 5 slit-like pores along edge of upper lip and 3 round pores behind posterior margin of eye: first pore slightly behind base of anterior nostril; second pore between base of anterior nostril and anterior margin of posterior nostril; third pore under level of anterior margin of posterior nostril; fourth pore under level of posterior margin of posterior nostril; fifth pore on level of rictus, slightly behind posterior margin of eye; sixth through eighth pores located above sixth pore, behind posterior margin of eye. POM pores slit-like, with 10 along lower jaw and 4 on preopercular: first pore on edge of

lower lip at tip of jaw; second pore directly behind first, along lower lip; third through tenth pores along lower lip spaced more-or-less evenly, tenth pore below and slightly behind level of rictus; eleventh pore a short distance behind tenth; twelfth behind eleventh; thirteenth behind and slightly above twelfth; fourteenth behind and above thirteenth, below mid-eyelevel between first and second lateral-line pore. First SO pore (ethmoid) on underside of snout tip followed by 5 pores on upper surface of head; second pore above first on upper side of snout before anterior nostril; third pore above base of anterior nostril; fourth pore located between anterior and posterior nostrils; fifth pore between posterior margin of posterior nostril and anterior margin of eye; sixth pore of the two sides fused into a single median pore located slightly behind posterodorsal margin of eyes. ST pores 3: one median and one on each side above first lateral-line pore.

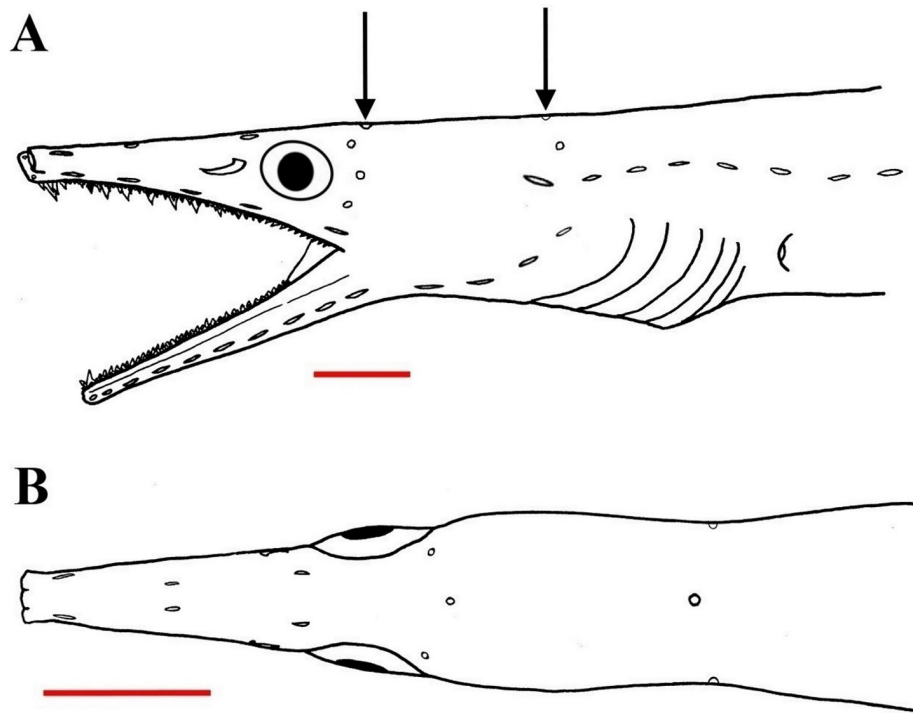


FIGURE 3. Head of *Saurenehelys gigas* sp. nov., holotype. A. Lateral view of head, showing the sensory pores on head. The arrows indicate the locations of the median supraorbital and supratemporal pores; B. Dorsal view of head. Bar = 10 mm.

Teeth exposed, dense, conical and sharp, in narrow bands on jaws (Fig. 4). The largest mature female specimens have more rows in each part. Intermaxillary tooth patch wide, triangular, the inner and posterior teeth larger. Maxillary teeth in 2 to 3 or 3 to 4 (larger specimens) rows, those of inner row larger than outer, directed backward before level of eye, then forward to posterior end. Vomerine tooth patch elongate, in 3 or 5 rows, beginning slightly behind intermaxillary teeth, reaching to level of anterior margin of eye; the median row of teeth greatly enlarged, these constituting the largest teeth in jaws; and 1 or 2 rows of much smaller teeth on each side of enlarged median teeth. Dentary teeth in 2 to 3 or 3 to 4 (larger specimens) rows, teeth of inner row larger than outer; 3 or 4 enlarged inner teeth at anterior end. Pterygoid tooth plate elongate, teeth densely distributed, small and somewhat blunt, about 5 rows; beginning at level of anterior margin of posterior nostril, and reaching to level of posterior margin of eye.

Color. Fresh specimens translucent pale pink to off white. A bright silvery bar on occiput, about half way between posterior margin of eye and gill opening. Edge of upper and lower lip with silver stripe; stripe on lower lip relatively thicker and longer than on upper. Operculum silver. A longitudinal silver stripe from behind gill opening to about one-third trunk length behind anus, below lateral-line. No observable black spots or melanin on head. Both anal and dorsal fins translucent; base of fins darkish, becoming all black posteriorly to tail tip. After preservation in ethanol, specimens change to cream color, the silver color still visible in some specimens.

Etymology. From the Latin *gigas*, giant, referring to its large size.

Distribution. Known from the central western Pacific: large, adult specimens from northeastern Taiwan; smaller, sub-adult specimen from central western Vietnam; and the leptocephali specimens *Saurenchelys* sp. E and *Saurenchelys* sp. 1 recorded from the Java Sea and East China Sea (Smith & Castle, 1982; Tabeta & Mochioka, 1988). The known geographic distribution of *S. gigas* adult specimens is shown in Fig 5.

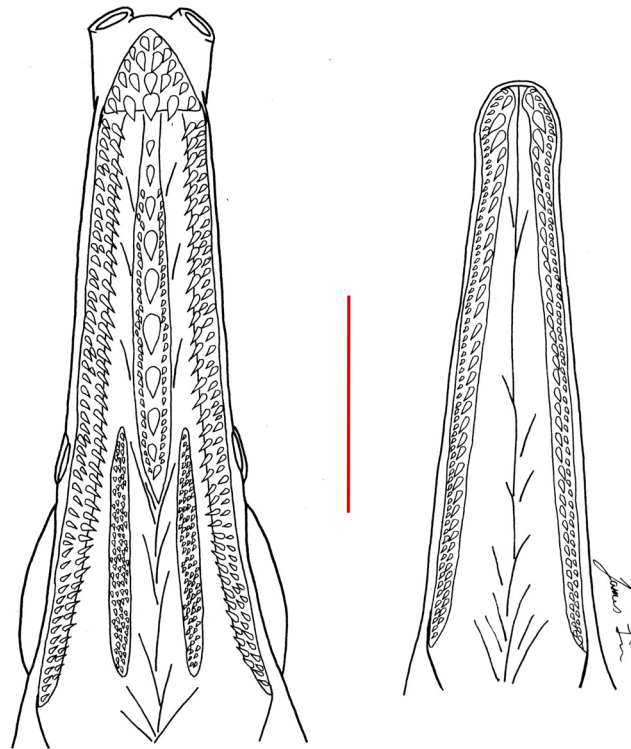


FIGURE 4. Dentition of *Saurenchelys gigas* sp. nov., holotype. Left, upper jaw; right lower jaw. Bar = 10 mm.

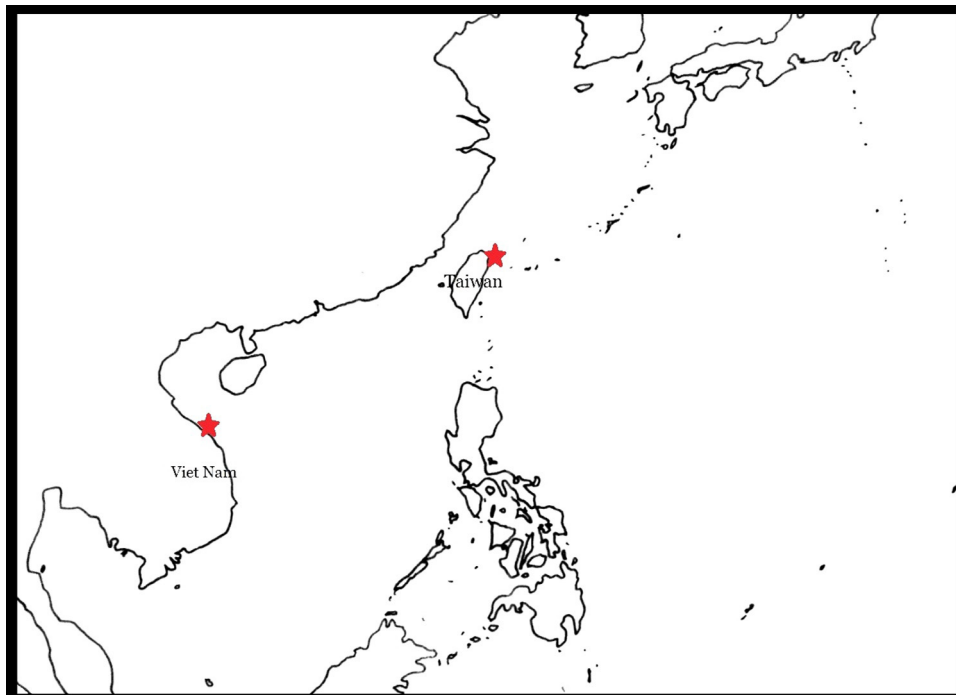


FIGURE 5. The known geographic locations of adult *Saurenchelys gigas* sp. nov.

The *Saurenehelys* sp. E larva from Java has 215 total myomeres and 69 preanal myomeres, and the *Saurenehelys* sp. 1 from Okinawa has 218 total myomeres and 66 preanal myomeres (Tabeta & Mochioka, 1988). Adult specimens of *Saurenehelys gigas* have 218 total vertebrae and 63–70 (mode 65) precaudal vertebrae; these counts are consistent with the myomere counts of the larvae. This plus the congruent geographic distribution suggests that part of *Saurenehelys* sp. E and *S.* sp. 1 probably represent the leptocephalus stage of *Saurenehelys gigas*.

Comparison with other species

Saurenehelys meteori is distinguished from *S. gigas* and all the other known species by its multiserial vomerine teeth, ranging from biserial at the anterior end to five or six irregular rows posteriorly. The middle teeth are somewhat enlarged posteriorly, but they do not form a well-defined row (Klausewitz & Zajonz, 2000:fig. 8). All the other species have a median series of greatly enlarged teeth, flanked on each side by one or two rows of much smaller teeth. Table 1 compares several characters in *S. gigas* with those of five other species (data for *S. petersi* are not available). *Saurenehelys gigas* differs from all of these in PAV (38–40 vs. 27–34), PDV (9–12 vs. 5–8), PCV (63–70 vs. 45–59), PALL (38–42 vs. 27–34), TR (59.8–67.3 % PAL vs. 52.8–57.5), and HL (36.8–39.3 % PAL vs. 42.3–47.2). Other characters will distinguish it from one or more of the other species. Table 2 gives a detailed comparison of *S. gigas* with the two other species known to occur in Taiwan.

Partial COI sequences were obtained from the mitochondrial genes. The neighbor-joining phenetic tree generated by the MEGA 4, based on a Kimura 2-parameter (K2P) model, shows that *Saurenehelys gigas*, *S. fierasfer*, and *S. taiwanensis* belong to three separate clades (Fig. 6). Within the phenetic tree, the mean pairwise distance is 10.93% (SE=0.01; minimum distance of 0.00, and maximum distance of 16.56%, n=14).

The *Saurenehelys gigas* clade differs from the *S. taiwanensis* clade by 15.99% on average (SE=0.018; minimum distance of 15.44% and maximum distance of 16.56%). The *S. fierasfer* clade differs from the *S. taiwanensis* clade by 16.03% on average (SE=0.018; minimum distance of 15.91% and maximum distance of 16.36%). The *S. gigas* and *S. fierasfer* clades differ by 14.7% on average (SE=0.017; minimum distance of 14.26% and maximum distance of 15.15%).

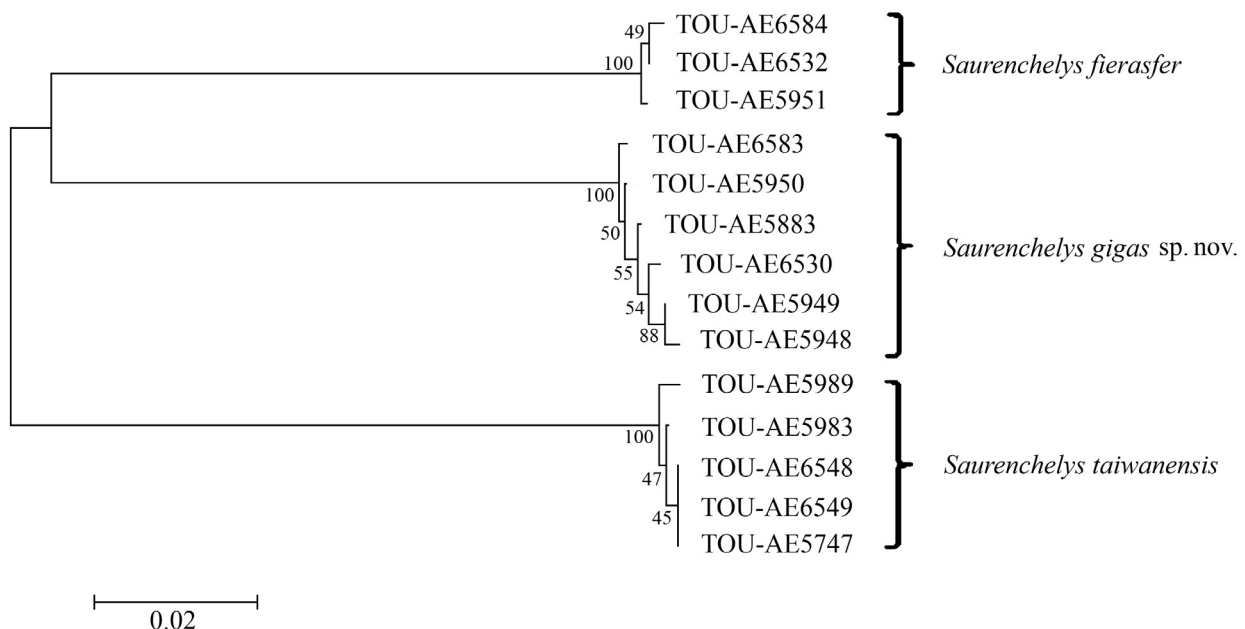


FIGURE 6. A Neighbor-joining tree of *Saurenehelys* species from COI gene sequences (DNA barcode) with 50,000 bootstrap replicates, following the Kimura two-parameter model (K2P) generated by MEGA 4.

Discussion

Until now, adult *Saurenehelys* species have been difficult to classify, because of their featureless external morphology and their slender, fragile tail, which is frequently damaged, resulting in the loss of one of the most important specific characters—total number of vertebrae. The number of preanal vertebrae and predorsal vertebrae are usually available but do not sufficiently distinguish different species. A more useful character seems to be the number of precaudal vertebrae (PCV), which might also indicate the terminal position of the kidney, swim bladder or gonads.

The PCV count clearly distinguishes each species in Taiwanese waters: 49–52 in *S. fierasfer*, 53–58 in *S. taiwanensis*, and 63–70 in *S. gigas*. Furthermore, the PCV of *Saurenehelys* is related to the PAM counts of the *Saurenehelys* leptocephali. *Saurenehelys gigas* has PCV 63–70 and TV 218, similar to *Saurenehelys* sp. E (from Java Sea) and *Saurenehelys* sp. 1 (from Japan) with PAM 66–70 and TM 215–218 (Smith & Castle 1982; Tabeta & Mochioka, 1988).

The *Saurenehelys cancrivora* reported in Lin & Chen (2011) was apparently misidentified; based on its somewhat higher PCV count, obvious melanophores behind the eyes and supratemporal, and especially the wider and elongate intermaxillary, it might represent an undescribed species in the western central Pacific region.

Karmovskaya (2004) described *Saurenehelys taiwanensis* based on the unique holotype from the Philippines. The original description states that *S. taiwanensis* has an unpaired pore located on the dorsal side behind the posterior margin of the eye (see in the original illustration fig. 14a), but on the holotype specimen MNHN 1998-0668, the dorsal head skin is broken, and it is hard to observe the sensory pore on that side. However, after examining 70 specimens of *S. taiwanensis* from Taiwanese waters, we found only one specimen (TOU-AE 5959, 404 mm TL) with 6 SO pores (the 6th pores are located posterodorsal to the eye). The other 69 specimens have 5 SO pores, and none of them have the single SO pore behind the posterior margin of the eye.

Comparative materials. *Saurenehelys fierasfer*, 5 specimens, all collected from Daxi, Yilan, NE Taiwan: TOU-AE 5737, 531 mm TL, mature female, 10 Nov. 2010; TOU-AE 5951, 375 mm TL, immature female, 10 Jan. 2012; TOU-AE 6532, 543 mm TL, mature female, 19 July 2012; TOU-AE 6536, 505 mm TL, mature male, 19 July 2012; TOU-AE 6584, 670 mm TL, mature male, 20 Aug. 2012.

Saurenehelys taiwanensis, 70 specimens, collected from Daxi, Yilan, NE Taiwan: TOU-AE 5736, 431 mm TL, mature female, 10 Nov. 2010; TOU-AE 5877, 453 mm TL, 18 Sep. 2011; TOU-AE 5890, 5891, 5892, 5908, 5910, 5917, 5918, 5920, 5921, 5925, 5926, 5927, 5930, 5931, 5932, 5933, 5934, 5935, 5936, 5937, 5939, 21 specimens, 276–473 mm TL, 28 Nov. 2011; TOU-AE 5958, 5960, 5961, 5962, 5963, 5964, 5966, 5967, 5968, 5969, 5970, 5971, 5972, 5974, 5975, 5977, 5979, 5980, 5981, 5982, 5983, 5984, 5985, 5987, 5988, 5989, 26 specimens, 293–474 mm TL, 10 Jan. 2012; TOU-AE 5959, 404 mm TL, mature female, 10 Jan. 2012; TOU-AE 6531, 6537, 2 specimens, 264, 360 mm TL, 19 July 2012; TOU-AE 6548, 6549, 6550, 6551, 4 specimens, 285–456 mm TL, 25 July 2012; TOU-AE 6851, 432 mm TL, 22 Jan. 2013. Collected from Nan-fang-ao, Yilan, NE Taiwan: TOU-AE 5742, 5743, 5744, 5745, 5746, 5747, 5748, 5778, 295–530 mm TL, 20 Dec. 2010; TOU-AE 5857, 5858, 5859, 463–518 mm TL, 5 Aug. 2011. Collected from Dong-gang, Pingtung, SW Taiwan: TOU-AE 5902, 5903, 2 specimens: 347, 352 mm TL, 12 Mar. 2012.

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