Sunagocia sainsburyi, a new flathead fish (Scorpaeniformes: Platycephalidae) from northwestern Australia

Leslie W. Knapp and Hisashi Imamura

(LWK) Department of Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560-0159, U.S.A.; e-mail: knappl@si.edu;

(HI) Hokkaido University Museum, Faculty of Fisheries, Hokkaido University, 3-1-1 Minato-cho, Hakodate, Hokkaido 041-8611, Japan, e-mail: imamura@museum.hukudai.ac.jp

Abstract.—Based on two specimens taken by bottom trawl from northwestern Australia, Sunagocia sainsburyi differs from its congeners in having: 4–5 preorbital spines; 5 total gill rakers on first arch; a bony expansion of suborbital ridge base on cheek bearing 1–2 rows of small spines; and no papillae on upper surface of eye. It also tends to have more spines on the ethmoid and on the supraorbital and suborbital ridges. A table compares features of the new species to the other three species currently included in the genus Sunagocia.

Imamura (1996) erected the genus Eurycephalus for three species formerly placed in the genus Thysanophrys Ogilby, 1898; E. arenicola (Schultz, 1966), E. carbunculus (Valenciennes in Cuvier & Valenciennes, 1833), and E. otaitensis (Cuvier & Valenciennes, 1833), and E. otaitensis (Cuvier (ex Parkinson) in Cuvier & Valenciennes, 1829). The primary features distinguishing the new genus were: suborbital ridge bearing four or more distinct spines; iris lappet finger-like or branched; lateral-line scale pores with two openings posteriorly; and sensory tubules weakly developed or absent from the cheek region. Recently, Imamura (2003) learned that the name Eurycephalus was preoccupied by the cerambycid beetle genus Eurycephalus Gray in Cuvier & Giffith, 1832 and proposed Sunagocia as a replacement name.

During the trawling surveys of northwestern Australia conducted by the F/V Courageous in 1978 and by the F/V Soela in 1980, two small specimens of an undescribed species of Sunagocia were taken. Comparisons of features distinguishing these specimens from the other three species of Sunagocia appear in Table 1. The two collections of the new species represent

Table 1.—Comparison of features in species of Sunagocia (value for paratype in parentheses).

<table>
<thead>
<tr>
<th>Character</th>
<th>arenicola n = 20</th>
<th>carbunculus n = 8</th>
<th>otaitensis n = 21</th>
<th>sainsburyi n = 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SL (mm)</td>
<td>37–135</td>
<td>70–116</td>
<td>83–159</td>
<td>86 (97)</td>
</tr>
<tr>
<td>Total gill-rakers</td>
<td>6</td>
<td>6–7</td>
<td>6–7</td>
<td>5</td>
</tr>
<tr>
<td>Preocular spines</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Preorbital spines</td>
<td>0, rarely 1–2</td>
<td>1, rarely 2</td>
<td>0, rarely 1</td>
<td>4</td>
</tr>
<tr>
<td>Maxilla reaches to eye</td>
<td>just past front</td>
<td>anterior ¼ of eye</td>
<td>just past front</td>
<td>mid-eye</td>
</tr>
<tr>
<td></td>
<td>of eye</td>
<td>eye</td>
<td>of eye</td>
<td></td>
</tr>
<tr>
<td>Ocular flaps</td>
<td>absent</td>
<td>present</td>
<td>absent</td>
<td>absent</td>
</tr>
<tr>
<td>Labial papillae</td>
<td>absent</td>
<td>absent</td>
<td>present</td>
<td>absent</td>
</tr>
<tr>
<td>Suborbital ridge upper base</td>
<td>smooth, scaled</td>
<td>smooth, scaled</td>
<td>smooth, scaled</td>
<td>bony expansion with 1–2 rows of small spines</td>
</tr>
</tbody>
</table>
Fig. 1. Paratype of *Sunagocia sainsburyi*, CSIRO H 5856-01, Northern Australia, 97 mm SL.

Fig. 2. Cranial spines of holotype of *Sunagocia sainsburyi*, WAM 26230-007.
Fig. 3. Head of holotype of *Sunagocia sainsburyi*, right side, showing lack of sensory tubules on cheek below suborbital ridge.

Methods

Counts and measurements were taken according to Hubbs & Lagler (1949). Measurements were made with calipers and rounded to the nearest mm. Vertebrae were counted from radiographs. Terminology of head spines follows Knapp et al. (2000). Institutional acronyms follow Leviton et al. (1985) except for South African Institute for Aquatic Biodiversity (SAIAB), formerly RUSI. Standard length and head length are abbreviated as SL and HL, and lateral-line as LL.

*Sunagocia sainsburyi*, new species

Sainsbury’s flathead

Fig. 1

Holotype.—WAM 26230-007, 86 mm SL, Western Australia, 125 km NE of Port Hedlund, 19°07´S, 119°25´E, F.V. Courageous, 28 May 1978, 73-74 m, K. Sainsbury et al.

Paratype.—CSIRO H 5856-01, 97 mm, Northern Australia, near Darwin, 11°53´S 131°15´E, F.V. Soela, Cr. 5, Sta. 49, 6 July 1980, trawl, 20–22 m.


**Diagnosis.**—A species of *Sunagocia* with 4–5 preorbital spines; 5 total gill rakers on the first arch; a bony expansion of the suborbital ridge upper base on cheek bearing 1–2 rows of small spines; maxilla reaching to below middle of eye; no papillae on upper surface of eye; a series of spines on the ethmoid and several pairs of nasal spines (Fig. 2); and smaller, more numerous spines on the supraorbital and suborbital ridges. Sensory tubules are absent from the cheek area below the suborbital ridge (Fig. 3).

**Description.**—Data for holotype given, followed by that of paratype in parentheses when differing. Dorsal-fin damaged in holotype, last 1–2 spines missing, VII(IX), 11; anal-fin rays 12; pectoral-fin rays 2 unbranched + 14 branched + 3 unbranched (2+13+4) = 19; pelvic fin with 1 spine and 5 rays, innermost is unbranched; caudal-fin branched rays 8; vertebrae 27; total gill rakers on first arch 5; pored scales in LL 52, anterior 3 scales bearing a small spine; 6 rows of scales between 2nd dorsal fin origin and LL. Number of oblique scale rows above LL about equal to number of LL scales. LL
scale pores with two openings to the exterior (Fig. 4). Relationship of LL scales to adjacent scale rows is shown in Fig. 5. Iris lappet bears short branches with bifurcate tips (Fig. 6). Lip margins without papillae.

Body depressed, upper body covered with ctenoid scales, breast scales largely cycloid. Interopercular flap lacking. HL 2.8 (2.9) in SL; orbit going 1.1 times in snout. Ratios of least interorbital width into snout length for the four species of *Sunagocia* appear in Fig. 7. Villiform teeth in bands on jaws and palatines, in two separate patches on vomer.

Top and sides of head armed with numerous spines (Fig. 2). Preopercular spines 3, uppermost longest, not bearing an accessory spine on base; a pair of stout nasal spines, with 2–3 smaller spines running anteriorly to each; base of opercular spines covered by scales, not bearing serrae. Suborbital ridge with about 17–20 serrae.

Color observations were taken on the paratype after it thawed, prior to preservation. Dorsum brownish, with about six darker bands crossing back, venter whitish. Two brown infraorbital bands and two brown suborbital bands present. Cheek below suborbital ridge with a series of brown blotches. A brown band angling back from anterior ethmoid to front of eye. Dorsal-fin spines and rays bearing small dark spots; pectoral fin with several vertical brownish bands above, clear below; pelvic fin with four reddish-brown bands; and caudal fin with about four vertical dark brown bands.

**Etymology.**—The species is named in honor of Keith J. Sainsbury, collector of the holotype and other flatheads later during the F.V. *Soela* cruises.
Acknowledgments

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Literature Cited


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