ENNEAPTERYGUS NASIMAE A NEW SPECIES OF TRIPTERYGIID FISH FROM KARACHI COAST, NORTHERN ARABIAN SEA

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ABSTRACT

*Enneapterygius nasimae* sp. nov., collected from the Karachi coast (Buleii), northern Arabian sea, is characterised by having a crescentic or triangular black preanal spot, 6-9 dark oblique bars on anal fin, 5 dark blotches along the sides of body, the largest at the caudal base, first dorsal equal to or higher than second dorsal, with fin formulae: D1 III; D2 XII-XIII (usually XII); D3 9-10 (rarely 11); A 1, 18-20; P 13-15 (usually 14; lower 7, upper 1-3 unbranched, and middle 5 branched); C 13 (lower 2, upper 2 unbranched and middle 9 branched); L1 37-40 (14-16 pored + 23-24 notched); Ltr 2-1-4.

INTRODUCTION

The tripterygiids from the Indian Ocean have been described by Day (1876, 1889), Mukerjee (1935), Herre (1944), Lal Moahan (1968, 1971), Smith (1965), Smith and Smith (1969), Qark (1979) and Hoda (1981, 1983). I collected the specimens from the intertidal pools of the Karachi coast (Buleji), northern Arabian Sea, at a depth of 0.3-1.0 m during the period between 1978-1981. In this report *Enneapterygius nasimae* sp. nov. is described and figured.

Abbreviation:

CEMBP, Centre of Excellence in Marine Biology, Pakistan;
ROM, Royal Ontario Museum, Canada.

DESCRIPTION

*Enneapterygius nasimae* sp. nov.  
(Figs. 1 A-C, 2A-C, 3 A-D)

*Specimens examined:* 12 specimens, 24-32 mm SL from intertidal pools of Karachi coast (Buleji), northern Arabian sea, 5 collections.

*Holotype:* CEMBP 208 male, 30 mm SL, tide-pools (rocks, algae) of Karachi coast (Buleji), 14-11-1979, collected by S. M. S. Hoda.

*Paratypes:* CEMBP 69, 238, 262; ROM 39315
Description: (Characters for holotype in parenthesis)

First dorsal fin equal to or higher than second in both immature and adult. D1 III, D2 XII-XIII (XIII); D3 9-10 (9) (rarely 11); A I, 18-20 (19); P 13-15 (14), usually 14, lower 7, upper 1-3 unbranched, and middle 5 branched. V I 2; C 13, lower 2, upper 2 unbranched and middle 9 branched. L 37-40 with 13-16 pored scales (14) anteriorly, reaching near the end of D2 followed 2 rows lower by 23-24 (23) notched scales (Fig. 2B) with a pored scale at caudal base, often 1-2 pored scales in the notched series, first notched scale rarely followed by one pored scale and 18th or 19th scale is pored one. Lbr 2-1-6. Scales strongly ctenoid, deciduous. Nape scaled. Vertebrae 10-124-25 (Alizarine preparation).

FIG. 1. Enneapterygius satyramus sp. nov.
A. Male, 29 mm SL, Holotype CEMBP 208.
B. Female, 28 mm SL, Paratype CEMBP 238.
C. Male, 25 mm SL, Paratype CEMBP 68.
Depth 5.25-5.96 in TL, 4.27-5.88 in SL; depth at origin of D2 1.38-1.60; at D3 1.50-2.00 in head. Head 3.73-4.14 in TL, 3.11-3.33 in SL. Eye 2.33-2.67, snout 2.67-3.50, caudal fin 1.25-1.45, caudal peduncle depth 2.33-3.20, head height 1.33-1.40 and width 1.33-1.40 in head. Preanal 2.50-2.90 in TL, 2.00-2.35 in SL; predorsal 4.34-5.80 in TL, 3.57-4.15 in SL. Pectoral fin 0.88-1.00 in head, 0.60-0.69 in caudal fin reaching to 11-12th ray of D2, 6-7th ray of anal fin, 5-6 notched scale and 1-2 scales behind pored scale. First

**FIG. 2.** *Enneaperygius nasimae* sp. nov. (Scale bar, 2 mm)

A. Head (left lateral view). Female 29 mm SL (Paratype).

B. Lateral line scales (middle part). Male 20 mm SL to show the overlapping of pored (Pd) and notched (n) scales.


D. Head (ventral view). Male 28 mm SL to show pigmentation.
Spine of D1 1.60-2.00, last spine of D1 1.97-2.67, first spine of D2 2.00-2.50, last spine of D2 3.50-4.00, first spine of D3 1.60-2.00 in head. D2 free from D3. Last ray of dorsal and anal fins free from caudal peduncle. D2 originates at 2nd or 3rd pored scales and D3 at 8th notched scale and 10th anal fin ray. Anal originates at 8th ray of D2, 10-11th pored scale or one scale anterior to notched scale.

Head massive and trigla-like. Lips prominent, orbit large, almost circular, the upper edge forming an elevated ridge, interorbital space strongly concave. Maxilla extends to level of front of pupil. Anterior nasal cirri tubular, expanding into an elongated flap on posterior edge and not divided. Orbital cirri simple, more densely pigmented than nasal cirri. Upper and lower jaw with short teeth, front teeth enlarged, with a cluster of teeth anteriorly in both jaws. Vomerine teeth minute in 2-3 rows. Gill rays short, stumpy, 3-4 on lower arm, absent on upper arm.

Cephalic canal system: (terminology after Clark, 1979). Deep supratemporal, short preotic and orbital canal. Preoperculo-mandibular canal extends and becomes confluent with a single median pore (Fig. 2 A). Caudal skeleton: preurals not fused, epural 1, hypurals 2, second preural long, reaching under and supporting 4-5 procurent rays (Fig. 2 C).

Pigmentation (Fig. 3 A, B)

In freshly dead specimens: D1: First two rays black pigmented and interspace between second and third rays reddish orange or yellow. D2: Basal or proximal region black pigmented, reddish orange pigments along middle and distal regions; two oblique streaks or black pigments along posterior 5-6 rays. D3: Basal or proximal region with reddish orange pigments, interspace between second and third rays yellow; three streaks of reddish orange pigments. Anal fin: rays yellow; 6-9 rows of black oblique bars with reddish orange colouration in between, bars formed series of 6-9 black spots when fin folded, and are continuous with anal fin base; single spinous ray black pigmented. A crescentic or triangular black preanal spot present (Fig. 2 D). Caudal fin: yellow, reddish orange pigments at base, 3-4 black spots on lower 2-3 rays. Pectoral fin: 5 rows of black pigments, each row followed by a row of reddish orange pigments in between; distal region reddish orange; rays yellow. Pelvic fin: proximal region reddish orange along with black pigments; rays yellow.

Head: Male: sides, lower region of head, pectoral base, throat and pelvic base highly dark brown pigmented. Iris of eye reddish orange. Female: head: less pigmented than male; whitish spots on cheek and lower part of head; pectoral fin base less pigmented than in male. An orange oblique bar from corner of eye to end of maxilla. In both sexes, dorsal side of head orange. Between pectoral fins on lower side, along ventral fin bases, 4 dark small blotches with colourless
space in between (Fig. 2D). 5 dark blotches along sides of body, first below middle rays of D2, second below last rays of D2, third below anterior 3-4 rays of D3, fourth below posterior of D3 and fifth large, expanded along caudal fin base; blotches less prominent in males than in females (Fig. 1A, B). 7-8 white small spots along anal fin base; 1-2 dark small spots along lower side of caudal peduncle. In fixed specimens the reddish orange or yellow colouration disappear. Number of eggs counted in a 35 mm TL fish was found to be 188 (93 + 95).

FIG. 3. Enneapterygius nasimae sp. nov. (Diagrammatic sketch)
A. Male, 25 mm SL (Scale bar, 2 mm).
B. Female 28 mm SL (Scale bar, 2 mm).
C. Enneapterygius ventermaculus Holleman

Remark
My specimens resemble E. altipinnis, E. destai and E. n. sp. 2 (Clark 1979), E. clarkae and E. ventermaculus (Holleman 1982) (Table 1) in having
Table 1. Selected characters of related species of genus, Enneapterygius.

<table>
<thead>
<tr>
<th>Character</th>
<th>E. nasimae</th>
<th>E. ventermaculatus</th>
<th>E. destai</th>
<th>E. n. sp.2</th>
<th>E. clarkae</th>
<th>E. elegans</th>
<th>E. n. sp.1</th>
<th>E. altipinnis</th>
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<tbody>
<tr>
<td>Second dorsal fin</td>
<td>XII-XIII (XII)</td>
<td>XI-XIII (XII)</td>
<td>XI-XIII (XII)</td>
<td>XI-XIII (XII)</td>
<td>XI-XIII (XII)</td>
<td>XI-XIII (XII)</td>
<td>XII-XIV (XII)</td>
<td>XI-XIII (XII)</td>
</tr>
<tr>
<td>Third dorsal fin</td>
<td>9-10 (9)</td>
<td>9-10</td>
<td>8-9</td>
<td>8 or 9</td>
<td>8-10 (9)</td>
<td>8-10 (9)</td>
<td>8-9</td>
<td>8-9</td>
</tr>
<tr>
<td>Unbranched upper/lower</td>
<td>1-3/7</td>
<td>1-3/7</td>
<td>5/4</td>
<td>3/4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Branched, middle</td>
<td>5</td>
<td>4-6</td>
<td>6</td>
<td>8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>5</td>
</tr>
<tr>
<td>Anal</td>
<td>1.18-20 (19)</td>
<td>17-20 (19)</td>
<td>15-17 (16)</td>
<td>15-17</td>
<td>16-17 (16)</td>
<td>16-17 (16)</td>
<td>12-17</td>
<td>1, 15-17</td>
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<tr>
<td>Lateral Scale pored scales</td>
<td>14-16 (14)</td>
<td>13-16 (15)</td>
<td>8-12</td>
<td>12-13</td>
<td>11-12</td>
<td>16-18 (17)</td>
<td>12-13</td>
<td>10-12 (12)</td>
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<tr>
<td>Notched scales</td>
<td>23-24 (23)</td>
<td>21-25 (22)</td>
<td>21-23</td>
<td>22</td>
<td>20-22 (22)</td>
<td>16-18 (17)</td>
<td>22</td>
<td>21-23 (21)</td>
</tr>
<tr>
<td>Head in S1</td>
<td>3.07-3.70</td>
<td>3.4-4.00</td>
<td>2.6-3.5</td>
<td>3.2-3.6</td>
<td>3.3-3.9</td>
<td>3.4-3.7</td>
<td>2.9-3.4</td>
<td>2.9-3.4</td>
</tr>
<tr>
<td>Eye in head</td>
<td>2.33-2.67</td>
<td>3.0-3.7</td>
<td>2.3-3.6</td>
<td>2.8-3.6</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Snout in head</td>
<td>2.67-3.50</td>
<td>3.0-3.4</td>
<td>3.7-4.9</td>
<td>—</td>
<td>—</td>
<td>—</td>
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</tr>
</tbody>
</table>

Data taken from Clark (1979) and Holleman (1982) except E. nasimae.
a conspicuous series of 6-9 black oblique bars on anal fin and a black preanal spot, but differ from them in absence of a vertical band or two at caudal fin base (as in *E. destai*) and pattern of blotches on body (as in *E. n. sp. 2*) and a dark spot on second dorsal fin between 5th and 7th rays (as in *E. altipinnis*) Hollerman (1982) redescribed and refigured *E. n. sp. 2* (Clark 1982) and named it *E. clarkae*. My specimens differ from *E. ventermaculus* in possessing a row of 5 regular dark blotches along lateral mid-line (vs irregular blotches in *ventermaculus*), the last large, broad blotch at caudal fin base not at all divided ventrally (vs a dark bar divided ventrally to form an inverted 'Y'), 6-9 spots on anal fin continued as bars across fin (vs pigments on anal fin rays only); 1-2 spots on caudal peduncle below; blotches on body more conspicuous in females than males (sexual dichromatism). Arrangement of pigments on throat (Fig. 2D) is different from *E. ventermaculus*. Hence, the present specimens of *E. nasimae* described and figured from Karachi coast is considered as new species different from *E. ventermaculus*, described and figured from Zululand (Fig. 3C).

**Diagnostic characters**

A black preanal spot, 6-9 series of black oblique bars on anal fin, 5 blotches along sides of body, broader and more conspicuous in females than in males, the last one large at caudal base. D1 III; D2 XII-XIII; D3 9-10; A I, 18-20; P 13-15 (usually 14); L1 14-15 + 23-24. Ltr 2-1-6.

**Etymology:** Named after Prof. Dr. Nasima M. Tirmizi, Director of Centre of Excellence in Marine Biology, University of Karachi. Suggested common name: Nasima's triple fin.

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**References**


ENNEAPTERYGIUS SP. NOV.


