NEW RECORD AND OCCURRENCE OF THE RED SEA BANNERFISH,  
HENIOCHUS INTERMEDIUS (ACTINOPTERYGII: PERCIFORMES: CHAETODONTIDAE),  
IN THE MEDITERRANEAN

Rami TSADOK1, Eli SHEMESH1, Yotam POPOVICH1, Yaniv SABAG2, Daniel GOLANI3*,  
and Dan TCHERONOV1

1 The Leon H. Charney School of Marine Sciences, University of Haifa, Israel  
2 Marine Laboratory, Israel Electric Corporation, Haifa, Israel  
3 Department of Evolution, Ecology and Behavior and the National Natural Collection, The Hebrew University  
of Jerusalem, Jerusalem, Israel

of the Red Sea bannerfish, Heniochus intermedius (Actinopterygii: Perciformes: Chaetodontidae),  

Abstract. In the present paper we document the first record of a Red Sea (Lessepsian migrant) species—the Red  
Sea bannerfish, Heniochus intermedius Steindachner, 1893, from Israel which constitutes the third record of this  
fish from the Mediterranean. The presently reported three specimens of this species from the Levant, in addition  
to several observations, indicate that this species has established a small population in this region.

Keywords: fish, new record, Lessepsian migration, exotic

The phenomenon of Red Sea species invading the Mediterranean, often called Lessepsian migration, is well  
documented. Among fish, the number of Lessepsian migrant species has already exceeded 90 (Golani 2010, Golani et al.  
2015, Anonymous 2014). It is clear that the first record of a Red Sea species in the Mediterranean is published imme-  
diately upon discovery and is of great interest. However, in order to follow the spread, population dynamics, and estab-  
lishment of such migrant species in their new region, it is imperative to document subsequent records. In the present  
paper we document the third record of the Red Sea bannerfish, Heniochus intermedius Steindachner, 1893, in the  
Mediterranean and the first from Israel. On 12 July 2014, a 84.1 mm SL (98.5 mm TL) specimen of  
Heniochus intermedius weighing 27.9 g (Fig. 1) was speared at the depth  
of 6 m at Sdot Yam, Israel (32º29′34.54″N 34º53′14.40″E). The specimen was deposited at the Fish Collection of the 
National Natural Collection of the Hebrew University and received the catalogue number HUJ 20346.

Family CHAETODONTIDAE Rafinesque, 1815  
Genus Heniochus Forsskål, 1775  
Heniochus intermedius Steindachner, 1893  
Heniochus intermedius Steindachner, 1893: 150  
Anz. Akad. Wiss. 30 (14) (Suez, Red Sea)  

Description of the Mediterranean specimen from  
Israel (HUJ 20346). Body deep and very compressed; its  
depth (from origin of dorsal fin to origin of anal fin ray  
portion) 1.04 times in SL. Small head (3.16 in SL) with  
pointed snout; 2.58 in Head length (HL). Large eye (3.24  
in HL) and narrow interorbital (4.09 in HL). Small mouth  
with small and sharp tightly-packed brush-like teeth. Head  
upper profile concave. Dorsal fin with 11 spines, fourth  
spine very elongated (sub-equal to SL), ray portion round;  
Anal fin triangular with three spines and 17 rays. Caudal  
fin truncated. Pectoral fin with 16 rays reaching back be-  
hind anus. Pelvic fin with one spine and five rays. Colour  
of fresh specimen: Body: greyish becoming yellow-brown  
on lower posterior part with two broad black vertical  
bands. First band from dorsal fin origin running through  
eye to pelvic fin. Second band from spine portion of dorsal  
fin to rear part of anal fin. Ray portion of dorsal fin, caudal  
and pectoral fins yellow. Anal fin dark grey with black  
margin. Pelvic fin black.

Molecular comparison. A molecular comparison be-  
tween the Mediterranean specimen and a specimen of  
H. intermedius from the Red Sea (HUJ 20393) was car-  
rried out. Partial sequence (540 bp) of the mitochondrial  
cytochrome c oxidase I (CO I) gene was amplified using
the FishBCL and Fish BCH primers and revealed that the two specimens were identical.

**Remarks.** All counts, measurements, and colour pattern agree with descriptions of *Heniochus intermedius* provided by other authors (Randall 1983, Golani and Darom 1997, Allen et al., 1998). The lack of bony tubercles between the eyes is due to the fact that the Mediterranean specimen (HUJ 20346) was sub-adult before these tubercles developed (Randall 1983). We examined a similar sized (65.9 mm SL) specimen from the Red Sea (HUJ 20345) which also lacked these tubercles.

The family Chaetodontidae is represented in the Red Sea by 17 species (Golani and Bogorodsky 2010) of which three have invaded the Mediterranean. *Heniochus intermedius* was first recorded in the Mediterranean by Gökoğlu et al. (2003) from the Gulf of Antalya, Turkey. Later, Bariche (2011) reported another specimen from Lebanon. Salameh et al. (2011) reported a single specimen of *Chaetodon larvatus* Cuvier, 1831 from the southern edge of Haifa Bay, Israel. In the same year, Goren et al. (2011) recorded *Chaetodon austriacus* Rüppell, 1836 from the Port of Ashdod, Israel. In subsequent years, this species was observed and photographed several times along the Israeli coast (unpublished data).

Species of the genus *Heniochus* Cuvier, 1816 are distinguished from other chaetodontids by the elongated fourth dorsal spine. Two species of the genus *Heniochus*, namely *Heniochus intermedius* Steindachner, 1893 and *Heniochus diphreutes* Jordan, 1903, inhabit the Red Sea (Golani and Bogorodsky 2010). The former can be distinguished from the latter by having 11 dorsal spines (vs. 12–13 in *H. diphreutes*), the adults having bony tubercles (“horns”) in the upper edge of the eyes and the anterior edge of the first vertical band reaching or even covering the eye (vs. not reaching the eye in *H. diphreutes*).

The original distribution of *Heniochus intermedius* was restricted to the Red Sea and the Gulf of Aden. Usually, this species lives in pairs but often forms small aggregations near rocky or coral substrate. Its diet is primarily composed of zooplankton and small benthic invertebrates. The presently reported record and several observations of *Heniochus intermedius*, by the senior author (RT) and other observers in localities some distance from each other, were reported to the authors (see Table 1). Other observations of additional specimens of *Heniochus intermedius* along the Israeli coast indicate that this species has established a small population in the eastern Mediterranean.

---

**Fig. 1.** *Heniochus intermedius* (HUJ 20346), 84.1 mm SL, 12 July 2014, Sdot Yam, Israel (photograph: D. Golani)

---

**Table 1**

<table>
<thead>
<tr>
<th>Locality</th>
<th>Coordinates</th>
<th>Date</th>
<th>Depth [m]</th>
<th>Observer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sdot Yam</td>
<td>32°29′28.09″N, 34°53′8.43″E</td>
<td>2 May 2014</td>
<td>6</td>
<td>Rami Tsadok</td>
</tr>
<tr>
<td>Achziv</td>
<td>33°03′20.81″N, 35°06′7.57″E</td>
<td>8 July 2014</td>
<td>7</td>
<td>Yaniv Aluma</td>
</tr>
<tr>
<td>Ma’agan Michael</td>
<td>32°53′18.81″N, 34°54′7.39″E</td>
<td>10 July 2014</td>
<td>5</td>
<td>Hagai Nativ</td>
</tr>
<tr>
<td>Nachsholim</td>
<td>32°36′27.45″N, 34°54′52.61″E</td>
<td>11 July 2014</td>
<td>5</td>
<td>Hagai Nativ</td>
</tr>
<tr>
<td>Michmoret</td>
<td>32°24′6.55″N, 34°51′53.16″E</td>
<td>12 July 2014</td>
<td>5</td>
<td>Rami Tsadok</td>
</tr>
</tbody>
</table>
Occurrence of *Heniochus intermedius* in the Mediterranean

**REFERENCES**


DOI: 10.3391/bir.2012.1.1.12


DOI: 10.3391/bir.2015.4.2.12


Golani D., Darom D. 1997. Madrich haDagim shel Israel. [Handbook of the fishes of Israel.] Keter Publications House, Jerusalem, Israel. [In Hebrew.]


DOI: 10.3391/ai.2011.6.S1.032


DOI: 10.1560/BCCJ-7RNL-EXRP-7P8Y


DOI: 10.3391/ai.2011.6.S1.012


Received: 13 February 2015

Accepted: 6 June 2015

Published electronically: 30 September 2015