

ANNALES

Anali za istrske in mediteranske študije
Annali di Studi istriani e mediterranee
Annals for Istrian and Mediterranean Studies
Series Historia Naturalis, 32, 2022, 1





ANNALES

Anali za istrske in mediteranske študije
Annali di Studi istriani e mediterranee
Annals for Istrian and Mediterranean Studies

Series Historia Naturalis, 32, 2022, 1

ISSN 1408-533X
e-ISSN 2591-1783

UDK 5

Letnik 32, leto 2022, številka 1

**UREDNIŠKI ODBOR/
COMITATO DI REDAZIONE/
BOARD OF EDITORS:**

Alessandro Acquavita (IT), Nicola Bettoso (IT), Christian Capapé (FR), Darko Darovec, Dušan Devetak, Jakov Dulčić (HR), Serena Fonda Umani (IT), Andrej Gogala, Daniel Golani (IL), Danijel Ivajnskič, Mitja Kaligarič, Marcelo Kovačič (HR), Andrej Kranjc, Lovrenc Lipej, Vesna Mačič (ME), Alenka Malej, Patricija Mozetič, Martina Orlando-Bonaca, Michael Stachowitsch (AT), Tom Turk, Al Vrezec

**Glavni urednik/Redattore capo/
Editor in chief:**

Darko Darovec

**Odgovorni urednik naravoslovja/
Redattore responsabile per le scienze
naturali/Natural Science Editor:**

Lovrenc Lipej

Urednica/Redattrice/Editor:

Martina Orlando-Bonaca

Prevajalci/Traduttori/Translators:

Martina Orlando-Bonaca (sl./it.)

**Oblikovalec/Progetto grafico/
Graphic design:**

Dušan Podgornik, Lovrenc Lipej

Tisk/Stampa/Print:

Založništvo PADRE d.o.o.

Izdajatelj/Editori/Published by:

Zgodovinsko društvo za južno Primorsko - Koper / Società storica del Litorale - Capodistria®

Inštitut IRRIS za raziskave, razvoj in strategije družbe, kulture in okolja / Institute IRRIS for Research, Development and Strategies of Society, Culture and Environment / Istituto IRRIS di ricerca, sviluppo e strategie della società, cultura e ambiente®

**Sedež uredništva/Sede della redazione/
Address of Editorial Board:**Nacionalni inštitut za biologijo, Morska biološka postaja Piran / Istituto nazionale di biologia, Stazione di biologia marina di Pirano / National Institute of Biology, Marine Biology Station Piran
SI-6330 Piran / Pirano, Fornace/Fornace 41, tel.: +386 5 671 2900, fax +386 5 671 2901;
e-mail: annales@mbss.org, **internet:** www.zdjp.si

Redakcija te številke je bila zaključena 30. 06. 2022.

**Sofinancirajo/Supporto finanziario/
Financially supported by:**

Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS) in Mestna občina Koper

Annales - Series Historia Naturalis izhaja dvakrat letno.

Naklada/Tiratura/Circulation:

300 izvodov/copie/copies

Revija Annales, Series Historia Naturalis je vključena v naslednje podatkovne baze / La rivista Annales, series Historia Naturalis è inserita nei seguenti data base / Articles appearing in this journal are abstracted and indexed in: BIOSIS-Zoological Record (UK); Aquatic Sciences and Fisheries Abstracts (ASFA); Elsevier B.V.: SCOPUS (NL); Directory of Open Access Journals (DOAJ).

To delo je objavljeno pod licenco / Quest'opera è distribuita con Licenza / This work is licensed under a Creative Commons BY-NC 4.0.



Navodila avtorjem in vse znanstvene revije in članki so brezplačno dostopni na spletni strani <https://zdjp.si/en/p/annalesshn/>
The submission guidelines and all scientific journals and articles are available free of charge on the website <https://zdjp.si/en/p/annalesshn/>
Le norme redazionali e tutti le riviste scientifiche e gli articoli sono disponibili gratuitamente sul sito <https://zdjp.si/en/p/annalesshn/>



VSEBINA / INDICE GENERALE / CONTENTS 2022(1)

SREDOZEMSKI MORSKI PSI
SQUALI MEDITERRANEI
 MEDITERRANEAN SHARKS

Farid HEMIDA, Christian REYNAUD & Christian CAPAPÉ

Observations on Thresher Shark, *Alopias vulpinus* (Chondrichthyes: Alopiidae) from the Coast of Algeria (Southwestern Mediterranean Sea) 1
Opazovanja morskih lisic, Alopias vulpinus (Chondrichthyes: Alopiidae) ob alžirski obali (jugozahodno Sredozemsko morje)

Elif ÖZGÜR ÖZBEK & Hakan KABASAKAL

Notes on Smoothback Angel Shark, *Squatina oculata* (Squatiniiformes: Squatinidae) caught in the Gulf of Antalya 9
Zapis o pegastih sklatih, Squatina oculata (Squatiniiformes: Squatinidae), ujetih v Antalijskem zalivu

Alessandro PAGANO & Alessandro DE MADDALENA

Underwater Observations of the Rare Angular Roughshark *Oxynotus centrina* (Chondrichthyes: Squalidae) in the Waters of Santa Tecla (Sicily, Italy) 17
Podvodna opazovanja redkega morskega prašiča, Oxynotus centrina (Chondrichthyes: Squalidae) v vodah Sante Tecele (Sicilija, Italija)

Deniz ERGÜDEN, Deniz AYAS & Hakan KABASAKAL

Morphometric Measurements of Three Young Carcharhinid Species from Northeastern Levant (Mediterranean Sea) 25
Morfometrične meritve mladičev treh vrst morskih psov iz družine Carcharhinidae iz severnovzhodnega Levanta (Sredozemsko morje)

Hakan KABASAKAL

Projections on the Future of Deep-Sea Sharks in the Sea of Marmara, Where Deep Zones Are Threatened by Deoxygenation: a Review 35
Napovedi o prihodnosti globomorskih morskih psov v Marmarskem morju, ogroženem zaradi pomanjkanja kisika: pregled

BIOINVAZIJA

BIOINVASIONE

BIOINVASION

Alan DEIDUN, Bruno ZAVA & Maria CORSINI-FOKA

Distribution Extension of *Lutjanus argentimaculatus* (Lutjanidae) and *Psenes pellucidus* (Nomeidae) to the Waters of Malta, Central Mediterranean Sea 49
Širjenje areala vrst Lutjanus argentimaculatus (Lutjanidae) in Psenes pellucidus (Nomeidae) v malteške vode (osrednje Sredozemsko morje)

Sami M. IBRAHIM, Abdulrazziq A. ABDULRAZIQ, Abdulghani ABDULGHANI, Sara A.A. AL MABRUK, David SALVATORI, Bruno ZAVA, Maria CORSINI-FOKA & Alan DEIDUN

First Record of *Enchelycore anatina* (Muraenidae) from Libyan Waters and an Additional Record from Southern Italy (Western Ionian Sea) 59
Prvi zapis o pojavljanju kavljazobe murene Enchelycore anatina (Muraenidae) iz libijskih voda in dodatni zapis za južno Italijo (zahodno Jonsko morje)

Rasha Ali HENEISH & Samir Ibrahim RIZKALLA

Morphometric and Meristic Characteristics of a New Record of Bluespot Mullet *Crenimugil seheli* (Pisces: Mugilidae) in Egyptian Mediterranean waters 67
Novi zapis o pojavljanju vrste Crenimugil seheli (Pisces: Mugilidae) v egiptovskih sredozemskih vodah in njene morfolometrične in meristične značilnosti

Yana SOLIMAN, Adib SAAD, Vienna HAMMOUD & Christian CAPAPÉ

Heavy Metal Concentrations in Tissues of *Siganus rivulatus* (Siganidae) from the Syrian Coast (Eastern Mediterranean Sea) 75
Vsebnost težkih kovin v tkivih marmoriranega morskega kunca Siganus rivulatus (Siganidae) iz sirske obale (vzhodno Sredozemsko morje)

IHTIOLOGIJA
 ITTIOLOGIA
 ICHTHYOLOGY

Jihade ALAHYENE, Brahim CHIAHOU, Hammou EL HABOUZ & Abdelbasset BEN-BANI

Length Based Growth Estimation of the Blue Shark *Prionace glauca* from the Moroccan Central Atlantic Coast 85
Dolžinsko-masni odnos in ocena rasti pri sinjem morskem psu (Prionace glauca) iz osrednje atlantske obale Maroka

Okan AKYOL, Altan LÖK & Funda ERDEM

Occurrence of *Cubiceps gracilis* (Nomeidae) in the Eastern Mediterranean Sea 101
Pojavljanje klateža, Cubiceps gracilis (Nomeidae), v vzhodnem Sredozemskem morju

Farid HEMIDA, Boualem BRAHMI, Christian REYNAUD & Christian CAPAPÉ

Occurrence of the Rare Driftfish *Cubiceps gracilis* (Nomeidae) from the Algerian Coast (Southwestern Mediterranean Sea) 107
Pojavljanje redkega klazeža Cubiceps gracilis (Nomeidae) z alžirske obale (jugozahodno Sredozemsko morje)

Deniz ERGÜDEN & Cemal TURAN

A Rare Occurrence of *Carapus acus* (Carapidae) in the Eastern Mediterranean, Turkey 113
Redko pojavljanje strmorinca Carapus acus (Carapidae) v vzhodnem Sredozemskem morju (Turčija)

Laith JAWAD, Murat ŞIRIN, Miloslav PETRTÝL, Ahmet ÖKTENER, Murat ÇELİK & Audai QASIM

Skeletal Abnormalities in Four Fish Species Collected from the Sea of Marmara, Turkey 119
Skeletne anomalije pri štirih vrstah rib iz Marmarskega morja (Turčija)

RAZMNOŽEVALNA EKOLOGIJA
 ECOLOGIA RIPRODUTTIVA
 REPRODUCTIVE ECOLOGY

Amaria Latefa BOUZIANI, Khaled RAHMANI, Samira AIT DARNA, Alae Eddine BELMAHI, Sihem ABID KACHOUR & Mohamed BOUDERBALA

Gonadal Histology in *Diplodus vulgaris* from the West Algerian Coast 137
Histologija gonad pri navadnem šparu (Diplodus vulgaris) iz zahodne alžirske obale

Cheikhna Yero GANDEGA, Nassima EL OMRANI, Rezan O. RASHEED, Mohammed RAMDANI & Roger FLOWER

The Growth and Reproduction of Two Sparidae, *Pagrus caeruleostictus* and *Pagellus bellottii* in Northern Mauritanian Waters (Eastern Tropical Atlantic) 143
Rast in razmnoževanje dveh vrst pagrov, Pagrus caeruleostictus in Pagellus bellottii v severnih mavretanskih vodah (vzhodni tropski Atlantik)

Nassima EL OMRANI, Hammou EL HABOUZ, Abdellah BOUHAIMI, Jaouad ABOU OUALID, Abdellatif MOUKRIM, Jamila GOUZOU, Mohammed RAMDANI, Roger FLOWER & Abdelbasset BEN-BANI

The Reproductive Biology of the Pouting *Trisopterus luscus* from the Atlantic Coast of Morocco 155
Reproduktivna biologija francoskega moliča (Trisopterus luscus) iz atlantske obale Maroka

Mourad CHÉRIF, Rimel BENMESSAOUD & Christian CAPAPÉ

Growth Patterns and Age Structure of *Mullus surmuletus* (Mullidae) from the Northern Coast of Tunisia (Central Mediterranean Sea) 173
Rastni parametri in starostna struktura progastih bradačev Mullus surmuletus (Mullidae) iz severne tunizijske obale (osrednje Sredozemsko morje)

FLORA

FLORA

FLORA

Martina ORLANDO-BONACA, Erik LIPEJ, Romina BONACA & Leon Lojze ZAMUDA

Improvement of the Ecological Status of the *Cymodocea nodosa* Meadow near the Port of Koper 185
Izboljšanje ekološkega stanja morskega travnika kolenčaste cimodoceje (Cymodocea nodosa) v bližini kopskega pristanišča

FAVNA

FAVNA

FAVNA

Manja ROGELJA, Martin VODOPIVEC & Alenka MALEJ

Cestum veneris Lesueur, 1813 (Ctenophora) – a Rare Guest in the Northern Adriatic Sea 197
Cestum veneris Lesueur, 1813 (Ctenophora) – redek gost v severnem Jadranu

Adla KAHRIĆ, Dalila DELIĆ & Dejan KULIJER

Notospermus annulatus (Nemertea: Lineidae), a New Record for Bosnia and Herzegovina 205
Notospermus annulatus (Nemertea: Lineidae), prvi zapis o pojavljanju za Bosno in Hercegovino

Andrea LOMBARDO & Giuliana MARLETTA

Report of an Interesting *Trapania* (Gastropoda: Nudibranchia: Goniodorididae) Specimen from Central Eastern Sicily 211
Zapis o zanimivem primerku iz rodu Trapania (Gastropoda: Nudibranchia: Goniodorididae) iz osrednje vzhodne Sicilije

Abdelkarim DERBALI & Othman JARBOUI

Stock Assessment, Cartography and Sexuality of the Wedge Clam *Donax trunculus* in the Gulf of Gabes (Tunisia) 217
Ocena staleža, kartografija in spolnost klinaste školjke Donax trunculus v gabeškem zalivu (Tunizija)

Abdelkarim DERBALI, Aymen HADJ TAIEB & Othman JARBOUI

Length-Weight Relationships and Density of Bivalve Species in the Shellfish Production Area of Zarzis (Tunisia, Central Mediterranean Sea) 229
Dolžinsko-masni odnos in gostota školjk na gojišču školjk v predelu Zarsisa (Tunizija, osrednje Sredozemsko morje)

Toni KOREN

The Diversity of Moths (Lepidoptera: Heterocera) of Significant Landscape Donji Kamenjak and Medulin Archipelago, Istria, Croatia 237
Raznolikost nočnih metuljev (Lepidoptera: Heterocera) Pomembne pokrajine Donji Kamenjak in Medulinski arhipelag, Istra, Hrvaška

OCENE IN POROČILA

RECENSIONI E RELAZIONI

REVIEWS AND REPORTS

Ines Mandić Mulec & Nives Ogrinc

Recenzija knjige: Mikrobn biogeokemija vod 263

Kazalo k slikam na ovitku 265

Index to images on the cover 265

received: 2022-01-26

DOI 10.19233/ASHN.2022.11

OCCURRENCE OF *CUBICEPS GRACILIS* (NOMEIDAE) IN THE EASTERN MEDITERRANEAN SEA

*Okan AKYOL & Altan LÖK*Ege University Faculty of Fisheries, 35440 Urla, İzmir, Türkiye
e-mail: okan.akyol@ege.edu.tr*Funda ERDEM*

Directorate of Agriculture and Forestry, Döşemealtı, Antalya, Türkiye

ABSTRACT

*This paper reports an additional record of *Cubiceps gracilis* (Lowe, 1843) indicating the extension of the species' distribution into the eastern Mediterranean Sea. On 7 January 2022, a single specimen of *C. gracilis* was caught by bottom trawl at a depth of about 400 m off Antalya in the southern coasts of Turkey. This oceanic fish is still very rare in the eastern Mediterranean Sea. This is the fourth record of *C. gracilis* in the eastern Mediterranean Basin, the first after 2006.*

Key words: Driftfish, additional record, measurements, Antalya

PRESENZA DI *CUBICEPS GRACILIS* (NOMEIDAE) NEL MEDITERRANEO ORIENTALE

SINTESI

*L'articolo riporta un nuovo ritrovamento di *Cubiceps gracilis* (Lowe, 1843), che indica l'estensione della distribuzione della specie nel Mediterraneo orientale. Il 7 gennaio 2022, un singolo esemplare di *C. gracilis* è stato catturato con una rete a strascico ad una profondità di circa 400 m, al largo di Antalya lungo le coste meridionali della Turchia. Questo pesce oceanico è ancora molto raro nel Mediterraneo orientale. Si tratta del quarto ritrovamento di *C. gracilis* nel bacino del Mediterraneo orientale, il primo dopo il 2006.*

Parole chiave: Centrolofo alalunga, nuovo ritrovamento, misurazioni, Antalya

INTRODUCTION

The driftfish (or longfin cigarfish), *Cubiceps gracilis* (Lowe, 1843) is an oceanic, epipelagic and mesopelagic fish species. Its young sometimes associate in groups with medusae, while adults generally occur singly (Haedrich, 1986).

C. gracilis commonly occurs both in Canada (northwest Atlantic) and the northeast Atlantic as far south as about 20°N off the African coast, including

western Mediterranean (Froese & Pauly, 2021). It has recently expanded its distribution range throughout the Mediterranean, from Gibraltar to the Adriatic (Dulčić, 2002; Pešić *et al.*, 2021), Antalya Bay (Golani *et al.*, 2008), as well as the Bays of Sığacık and Fethiye in the Aegean Sea (Filiz *et al.*, 2007; Irmak *et al.*, 2007).

This paper presents a new and additional record of *C. gracilis* as a very rare species in the eastern Mediterranean Sea.



Fig. 1: *Cubiceps gracilis* caught off Antalya (ref. ESFM-PIS/2022-001, scale bar: 50 mm, photo: O. Akyol).

Sl. 1: Klatež, *Cubiceps gracilis*, ujet v vodah pri Antalyji (ref. ESFM-PIS/2022-001, merilo 50 mm, foto: O. Akyol).

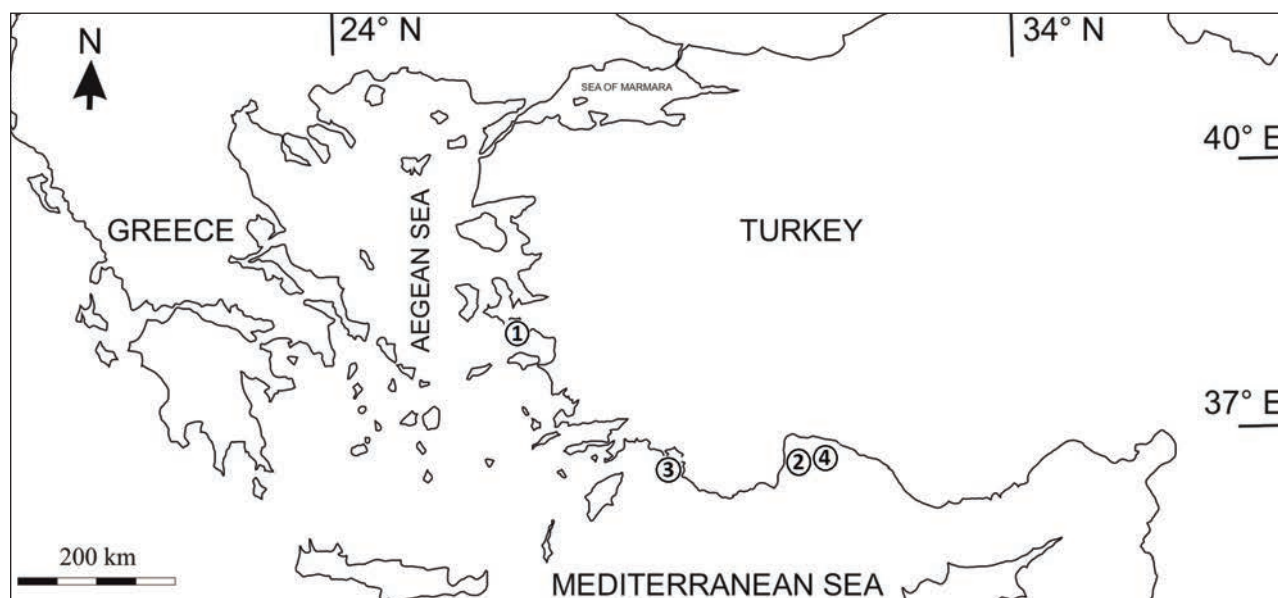


Fig. 2: Map showing records of *Cubiceps gracilis* in the eastern Mediterranean: (1) Sığacık Bay, Sept. 2005, (2) Gulf of Antalya, March 2006, (3) Fethiye Bay, July 2006, (4) Gulf of Antalya, Jan. 2022.

Sl. 2: Zemljevid z označenimi zapisi o pojavljanju klateža v vzhodnem Sredozemskem morju: 1) zaliv Sığacık, September 2005, (2) zaliv Antalya, Marec 2006, (3) zaliv Fethiye, Julij 2006, (4) zaliv Antalya, Januar 2022.

Tab. 1: Morphometric measurements as percentages of total length (TL%) and meristic counts recorded in the *Cubiceps gracilis* captured off Antalya.**Tab. 1: Morfometrične meritve, izražene kot delež celotne dolžine (%TL) in meristična štetja na primerku klateža, ujetega pri Antalyji.**

Measurements	Size (mm)	Proportion (TL%)
Total length (TL)	190	
Fork length (FL)	169	88.9
Standard length (SL)	155	81.6
Pre-dorsal fin length	54	28.4
Pre-anal fin length	90	47.4
Pre-pectoral length	46	24.2
Head length	46	24.2
Eye diameter	12	6.3
Preorbital length	9	4.7
Meristic counts		
1st Dorsal fin rays	XI	
2nd Dorsal fin rays	I+22	
Anal fin rays	II+20	
Pectoral fin rays	20	
Ventral fin rays	I+5	
Weight (g)	61.2	

MATERIAL AND METHODS

On 7 January 2022, a single specimen of *Cubiceps gracilis* (Fig. 1) was captured by a bottom trawler at a depth of about 400 m in the Gulf of Antalya (Fig. 2) on the southern coasts of Turkey. The specimen was fixed in a 6% formaldehyde solution and deposited in the fish collection of Ege University, Fisheries Faculty (ESFM-PIS/2022-001).

RESULTS AND DISCUSSION

The specimen was measured to the nearest millimetre. It was 190 mm in TL and weighed 61.2 g. The morphometric measurements as percentages of total length (TL%) and the meristic counts recorded in *C. gracilis* are presented in Table 1. The specimen was identified via the combination of the following characters: two dorsal fins, the first with eleven spines, the second with one spine and 22 soft rays. Anal fin with two small spines, and soft ray portion with 20 rays. Long pectoral fin with 20 rays. Ventral fin with one spine and five rays. Scales on head extending forward almost to nostrils. Colour: brown and blackish. All measurements, counts, proportions, and colour patterns determined are in accordance with the descriptions of Haedrich (1986), Filiz *et al.* (2007), Golani *et al.* (2008), and Froese & Pauly (2021).

It is obvious that *Cubiceps gracilis* is gradually extending its range into the eastern basin of the Mediterranean. In fact, fishermen state that the species has been sporadically observed for a decade. The recent intermittent records of *C. gracilis* are shown in Table 2.

The maximum total length (TL) of *C. gracilis* is 107 cm, common TL length 18 cm (Froese & Pauly, 2021). Length at sexual maturity is 20 cm (Haedrich, 1986). The specimen in the present study must have been a juvenile since its length was inferior to 20 cm; by analogy, all the records in Table 2 are of juveniles as well. These records suggest that there may be a spawning-stock biomass of *C. gracilis* in

Tab. 2: Records of *Cubiceps gracilis* in the eastern Mediterranean Sea.**Tab. 2: Zapisi o pojavljanju klateža v vzhodnem Sredozemskem morju.**

Area	Date	n	TL (mm)	Depth (m)	References
Siğacık Bay, Aegean Sea	11 September 2005	8	161-180	150-473	Filiz <i>et al.</i> (2007)
Gulf of Antalya	1 March 2006	2	165-167	250	Golani <i>et al.</i> (2008)
Fethiye Bay, Aegean Sea	17 July 2006	1	100*	10	Irmak <i>et al.</i> (2007)
Gulf of Antalya	7 January 2022	1	190	400	This study

* standard length SL

the eastern Mediterranean Sea. In conclusion, the oceanic fish *C. gracilis* is still very rare in the eastern Mediterranean Sea; in fact, the present is only the fourth record of the species in this region.

ACKNOWLEDGEMENTS

The authors thank Mr. Erkan Biçer for his bringing the fish our attention.

POJAVLJANJE KLATEŽA, *CUBICEPS GRACILIS* (NOMEIDAE), V VZHODNEM SREDOZEMSKEM MORJU

Okan AKYOL & Altan LÖK
Ege University Faculty of Fisheries, 35440 Urla, İzmir, Türkiye
e-mail: okan.akyol@ege.edu.tr

Funda ERDEM
Directorate of Agriculture and Forestry, Döşemealtı, Antalya, Türkiye

POVZETEK

Avtorji poročajo o dodatni najdbi klateža, *Cubiceps gracilis* (Lowe, 1843), ki kaže na širjenje areala v vzhodno Sredozemsko morje. Sedmega januarja 2022 so v vlečno mrežo na južni turški obali pri Antalyji ulovili primerek klateža na globini približno 400 m. Ta oceanska riba je še vedno zelo redka v vzhodnem Sredozemskem morju, saj gre šele za četrto najdbo, prvo po letu 2006.

Ključne besede: klatež, nova najdba, meritve, Antalya

REFERENCES

- Dulčić, J (2002):** New additional records of *Cubiceps gracilis* (Lowe, 1843) (Pisces, Nomeidae) in the eastern Adriatic. *Acta Adriat.*, 43(2), 93-96.
- Filiz, H., E. Irmak, S.C. Akcinar & E. Uluturk (2007):** The driftfish, *Cubiceps gracilis* (Lowe, 1843) (Pisces: Nomeidae): A new record for the Aegean Sea. *Rapp. Comm. Mer. Medit.*, 38, 476.
- Froese, R. & D. Pauly (eds.) (2021):** FishBase. [version 08/2021] [http:// www.fishbase.org](http://www.fishbase.org).
- Golani, D., M. Gökoglu & O. Güven (2008):** Two new records of deep water fish species from the eastern Mediterranean. *Mar. Biodivers. Rec.*, 1, e46, 1-3.
- Haedrich, R.L. (1986):** Nomeidae. In: Whitehead, P.J.P., M.-L. Bauchot, J.-C. Hureau, J. Nielsen & E. Tortonese (eds.): *Fishes of the North-eastern Atlantic and the Mediterranean*, Vol. 3. Unesco, Paris, pp. 1183-1188.
- Irmak, E., H. Filiz, B. Bayhan, S.C. Akçınar & E. Ulutürk (2007):** A rare fish species for Turkish Seas, caught from Fethiye Bay (Mediterranean Sea): *Cubiceps gracilis* (Lowe, 1843). *Türk Sucul Yaşam Dergisi*, 3, 124-127. (in Turkish).
- Pešić, A., Z. Ikica, A. M. Đurović, J. Tomanić & S. Ralević (2021):** Rare and endangered fish species in the Adriatic Sea. In: Joksimović, A., M. Đurović, I.S. Zonn, A.G. Kostianoy & A.V. Semenov (eds.): *The Montenegrin Adriatic coast: Marine biology*. Hdb. Env. Chem. 109, Springer Nature Switzerland, pp. 573-602.