

## Short Communication

# A new record of the rare *Hyleurochilus bananensis* (Poll 1959) (Actinopterygii: Blenniidae) with a review of its distribution and ecology in Italian seas

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**Abstract** - This study documents the presence of *Hyleurochilus bananensis* in a new area within the Tyrrhenian Sea, located about 30 km south of the closest occurrence locality known to date. Providing novel insights into its habitat, the observations here reported, at “Caterina Beach” (Sant’Agnello) on 29<sup>th</sup> and 30<sup>th</sup> December 2023, revealed the presence of four individuals close to a port beach area, in an artificial habitat represented by rusted iron pipes. These findings contribute valuable data to the limited knowledge on this rare species, providing new distributional and habitat notes.

**Keywords:** blenny, cryptobenthic fish, Mediterranean Sea, rare fish species, Tyrrhenian Sea.

**Riassunto** - Una nuova segnalazione del raro *Hyleurochilus bananensis* (Poll 1959) (Actinopterygii: Blenniidae) con una revisione della sua distribuzione ed ecologia nei mari italiani.

Questo studio documenta la presenza di *Hyleurochilus bananensis* in una nuova area nel Mar Tirreno, situata a circa 30 km a sud dell’area più vicina conosciuta fino a oggi. Fornendo nuovi approfondimenti sul suo habitat, le osservazioni qui riportate, presso la “Spiaggia Caterina” (Sant’Agnello) il 29 e 30 dicembre 2023, hanno rivelato la presenza di quattro esemplari vicini a una zona di spiaggia portuale, in un habitat artificiale rappresentato da tubi di ferro arrugginiti. Questi risultati contribuiscono con dati di rilievo alla conoscenza limitata di questa rara specie, fornendo nuovi dati sulla distribuzione e sull’habitat.

**Parole chiave:** blennide, pesce criptobentonico, Mar Mediterraneo, Mar Tirreno, specie rara di pesce.

The Blenniidae family, a diverse group comprising approximately 400 species, stands as one of the largest families among fishes, showcasing a global distribution across tropical and temperate waters (Tiralongo, 2020; Froese & Pauly, 2023). Thriving predominantly in the shallow waters, these fishes can be also found in brackish and freshwater environments (Tiralongo *et al.*, 2016a). Italy hosts 21 documented Blenniidae species, with 20 inhabiting marine waters, including brackish ones, and one, *Salariopsis fluviatilis* (Asso 1801), carving its niche in freshwaters (Kottelat & Freyhof, 2007; Relini & Lanteri, 2010; Azzurro *et al.*, 2018). Recent explorations and records shed light on the distribution of these species (Falzon, 2009; Bilecenoglu *et al.*, 2013; Falzon & Falzon, 2013; Tiralongo & Baldacconi, 2015), with a recent first record of a non-indigenous species namely *Ophioblennius atlanticus* (Valenciennes 1836) in Lampedusa Island (Azzurro *et al.*, 2018), and more recently reported also for the Sicilian Ionian Sea (Ragkousis *et al.*, 2020).

In the intricate world of combtooth blennies, identification within their natural habitat is often achievable by experts only. Noteworthy are the distinctive features of each species, such as the morphology of ocular cirri and other “cephalic tentacles”, along with the head’s morphology and the presence of some unique, consistent color patterns (Orlando-Bonaca & Lipej, 2010; Tiralongo, 2015; Tiralongo, 2020).

The genus *Hyleurochilus* Gill, 1861 comprises 11 species of Atlantic origin, and reveals complexities in morphological and coloration similarities, posing challenges to precise species identification in their natural environment. With the recent addition of a new species from Brazil (Pinheiro *et al.*, 2013), the genus’s distribution spans the western and eastern parts of the Atlantic Ocean. Notably, *Hyleurochilus bananensis* (Poll 1959) is the only representative of the genus in the Mediterranean Sea, extending its distribution to the eastern central Atlantic. However, the relationships between the genera *Hyleurochilus* and *Parablennius* are not unanimously resolved, with *Hyleurochilus* found to be nested within *Parablennius* spp. (Vecchioni *et al.*, 2019).

The history of this species traces back to its initial description in Congo by Poll (1959), followed by a misidentification along the Algerian coast, where it was erro-

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neously described as a new species (Bath, 1965). Within the Mediterranean Sea, *H. bananensis* appears to be a rare presence. Several sightings have been documented in Israel (Ben-Tuvia, 1971), Tunisia (Gharred *et al.*, 1998), Italy (Tortonese, 1975; Catalano, 1978; Langeneck, 2013; Tiralongo & Villani, 2014; Tiralongo *et al.*, 2016b), and Spain (Tsagarakis *et al.*, 2021). However, Italian records are limited to the Tyrrhenian and Ionian seas, usually in coastal waters and lagoons. Due to its rarity, data on biology and ecology of this species are scarce, and only recently Tiralongo *et al.* (2016b) provided new data on different aspects of this fish, such as taxonomy, habitat preference and sexual dimorphism.

During the observation period (29<sup>th</sup>-30<sup>th</sup> December 2023), at “Caterina Beach” (Sant’Agnello) (40.63805 N, 14.39973 E - Tyrrhenian Sea, Fig. 1), four individuals of *H. bananensis* were encountered during snorkeling activities. These specimens were found near a beach sited in a marina, where they were observed at depths ranging from 0.50 to 2.5 m. All observed individuals could be easily identified following the description and taxonomical keys reported in Tiralongo *et al.* (2016b) and Tiralongo (2020): in particular, the presence of a robust body, well-developed and highly ramified ocular cirri, branched nasal cirri, and the characteristic tubercles on the nape region. In addition, the marbled color pattern of the body matched with the species features (Fig. 2).

On 29<sup>th</sup> December 2023, one individual was observed positioned on an iron pipe supporting the pier fences, at a depth of approximately 0.5-0.8 m. This individual displayed a confident behaviour, allowing close approach and even permitting close-range photography. The observation occurred at 10:57 a.m.

On the morning of the 30<sup>th</sup> December 2023, the species was still present at the same location with a total of three individuals found inside rusted iron pipes located at a depth between 0.5 and 2.5 m in cavities ranging in diameter from 3

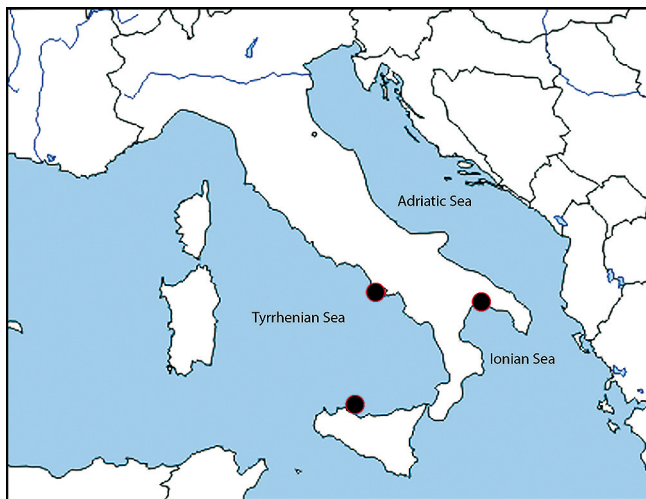


Fig. 1 - Known distribution of *Hypleurochilus bananensis* in Italian waters updated to January 2024 (records of this study are included). Black circles indicate areas where the species was recorded. For details see Table 1. / Distribuzione nota di *Hypleurochilus bananensis* nelle acque italiane aggiornata al gennaio 2024 (sono incluse le registrazioni di questo studio). I cerchi neri indicano le aree in cui la specie è stata registrata. Per i dettagli si veda la Tabella 1.

to 7 cm. Unlike the previous day, these individuals were more elusive, retreating into their burrows upon the approach of the observer. Two out of the three observed individuals were inside pipes colonized by various algae and filtering organisms, including ascidians and bivalves. Interestingly, the observed individuals did not seem intimidated by the presence of the crab *Eriphia verrucosa* (Forskål 1775). Indeed, one of the individuals even shared its den with the crab. By contrast, conflicts were observed with the crab *Pachygrapsus marmoratus* (Fabricius 1787), which occupied the remaining pipe openings. There were no submerged rocks around the pier, only a sandy area with the remains of crustacean skeletons and empty shells discarded by fishermen as by-catches. The water temperature ranged 15-18 °C, and during the dives the wave motion was barely noticeable. Additionally, due to the presence of a prominent rocky ledge emerging from sea level, the area is mostly shaded. This fact agrees with the previous observations reported by Tiralongo *et al.* (2016b), in which several individuals of *H. bananensis* were observed in areas with no direct exposure to sunlight, indicating the shaphilous nature of this fish species. When they were alarmed, the individuals would retreat into the den and position themselves belly-up on the vault of the cavity.

No eggs were observed inside the burrows occupied by *H. bananensis* individuals, supporting the hypothesis that the reproductive period does not extend to colder months, as typically reported for fishes of the Blenniidae family (Tiralongo, 2020). In particular, for this species, parental males guarding eggs were observed in the coastal lagoon of the Lake Miseno in the period between June and September (Tiralongo *et al.*, 2016b). During the summer, the sexual dimorphism of the species is marked, with males showing well-developed ocular cirri and a bright blue color on the head and a red tinge on the caudal fin.

In Italian seas, *H. bananensis* is found only in some coastal lagoons of the Tyrrhenian and Ionian seas, forming stable populations despite the limited number of recorded individuals. In the Tyrrhenian Sea, the species was only known from a small canal connecting Lake Miseno and the sea, although direct observations confirmed its presence in the nearby Lake Lucrino and possibly in other coastal lagoons of the Phlegraean Fields area (Tiralongo *et al.*, 2016b). In the Ionian Sea, the species was only recorded in the Mar Piccolo lagoon (Taranto, Apulia). Recent reports of *H. bananensis* from other Italian coastal areas are absent, including the site in Palermo (Tyrrhenian Sea) where Tortonese (1975) first observed the species, are absent (Tab. 1). Indeed, in Italian seas, this species has been constantly observed in or near harbours, in regions recognized as “hotspots” for the introduction of alien species (Occhipinti-Ambrogi, 2010). This pattern could explain the species’ presence exclusively in the areas around Naples-Salerno, Palermo, and Taranto, whose major ports are distinguished by the size of their merchant traffic. Fishes of the Blenniidae family are particularly susceptible to transport through ballast water (Wonham *et al.*, 2000), thus providing further support to the previous consideration. However, it is not possible to rule out also their transport in fouling on ship hulls, being this species cryptic (cryptobenthic *sensu* Miller, 1979) and therefore easily transported among encrusting organisms. Future

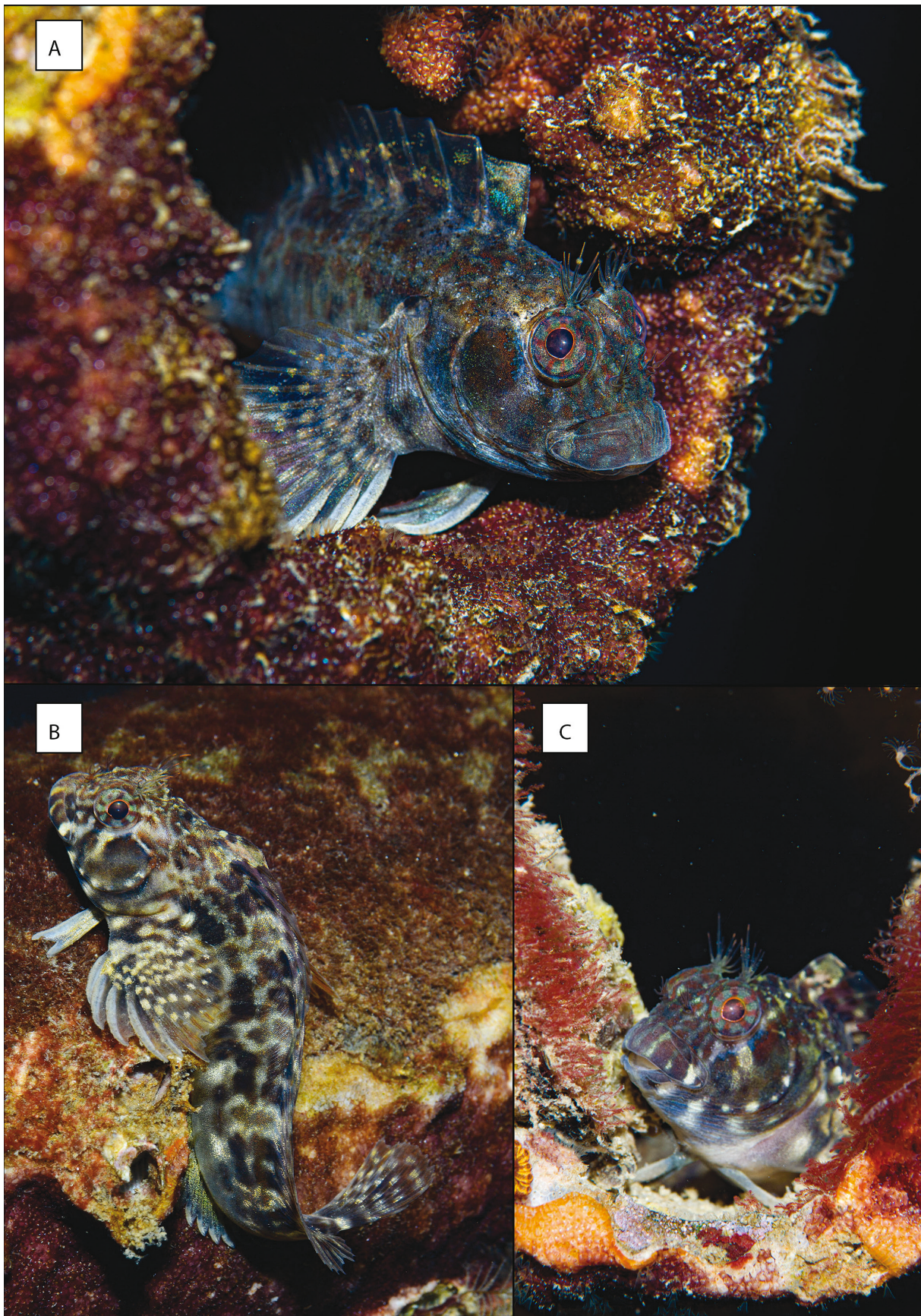


Fig. 2 - Individuals of *H. bananensis* observed in the Tyrrhenian Sea in the present study observed on 30<sup>th</sup> December 2023 (A and C) and on 29<sup>th</sup> December 2023 (B). / Individui di *Hypseurochilus bananensis* osservati il 30 dicembre 2023 (A e C) e il 29 dicembre 2023 (B) e riportati nel presente studio (Mar Tirreno).

Table 1. Historical and new records of *Hypleurochilus bananensis* in Italian waters. / Dati storici e nuovi record di *Hypleurochilus bananensis* nelle acque italiane.

Year	Location	Sea	Reference
1883	Napoli	Tyrrhenian	Tortonese, 1975
1977	Palermo	Tyrrhenian	Catalano <i>et al.</i> , 1979
2011	Taranto	Ionian	Langeneck, 2013
2013	Napoli	Tyrrhenian	Tiralongo & Villani, 2014
2014	Napoli	Tyrrhenian	Tiralongo <i>et al.</i> , 2016b
2014	Taranto	Ionian	Tiralongo <i>et al.</i> , 2016b
2023	Sorrento	Tyrrhenian	Tiralongo, 2024 (present study)

investigations should focus on habitats such as ports and coastal lagoons adjacent to ports and marinas. This could potentially unveil the presence of the species in additional locations, providing a more comprehensive understanding of its biology, ecology, and distribution.

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