

SHORT COMMUNICATION

An old Mediterranean record of *Gaidropsarus granti* (Regan, 1903)

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Abstract

Two individuals of a rare fish species, *Gaidropsarus granti*, were collected in 1991 in the central Mediterranean Sea at 450 m depth. This species is considered typical of seamounts and deep-coral habitats, although it has been occasionally collected on soft bottoms. The insufficient records do not allow to ascertain its biogeographical status, and it is generally considered as a cryptogenic species. The present finding should be considered chronologically the third record of *G. granti* from the Mediterranean.

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Seamounts are peculiar seabed structures that provide unique features and offer a suitable habitat to a vast array of pelagic and benthic organisms (Pitcher *et al.* 2007). While pelagic biota associated with such habitats is not qualitatively different from the surrounding water column, benthic organisms find conditions that allow for a high rate of endemism (Stocks and Hart 2007). Pelagic and benthopelagic fish tend to aggregate around seamounts and support valuable deep-sea fisheries that are the object of dedicated surveys and management actions (Morato and Clark 2007), but smaller sized benthic fish often remain overlooked and are much less known due to the difficulties inherent in sampling deep, rough-bottom habitats. Grant's rockling, *Gaidropsarus granti* (Regan, 1903) (Teleostei, Gaidropsidae), is an example of this offshore benthic fish fauna. The genus *Gaidropsarus* currently includes 14 species, 9 of which occur in the northeastern Atlantic and the Mediterranean, and is considered a problematic group in need of taxonomic revision (Francisco *et al.* 2014; Barros-García *et al.* 2022). Until the mid-1980s *G. granti* was known only from the

Azores and Canaries (NE Atlantic), where it was depicted as “probably” living between 20 and 50 m depth (Svetovidov 1986). Almost 20 records published successively, most of which from the Mediterranean, come from a depth range between 120 and 900 m and from a variety of habitats on both soft and hard bottoms (see Bañón *et al.* 2020 for a map of NE Atlantic and Mediterranean findings until then).

The present note reports a 1991 finding of *G. granti* from the central Mediterranean that remained overlooked and unpublished until now.

On March 12, 1991 two individuals of *Gaidropsarus granti* (Figure 1) were caught during a bottom trawl survey conducted by CNR-ITPP with the F/V Sant’Anna in the Strait of Sicily at about 450 m depth, 67 km NW of Gozo (36.244305°N 13.469280°E) (Figure 2). The habitat is unknown, but due to grasping and consequent damage to the trawl net during its hauling, it is very likely that there was a rocky formation of limited extension amid the surrounding muddy bottom.



Figure 1. *Gaidropsarus granti* collected in the Strait of Sicily. Specimen of 245 mm (total length).

The two specimens were measured 258 and 245 mm (total length), 238 and 222 mm (standard length), 129.8 and 112.8 g (total weight), respectively. Following Bañón *et al.* (2022) the principal morphometric measurements and meristic counts were collected on the 258 mm specimen (Table 1), but not on the 245 mm specimen because of partial body deformation after preservation. Most parameters fell within the known range for the species (Bañón *et al.* 2022), except for a few that diverged slightly.

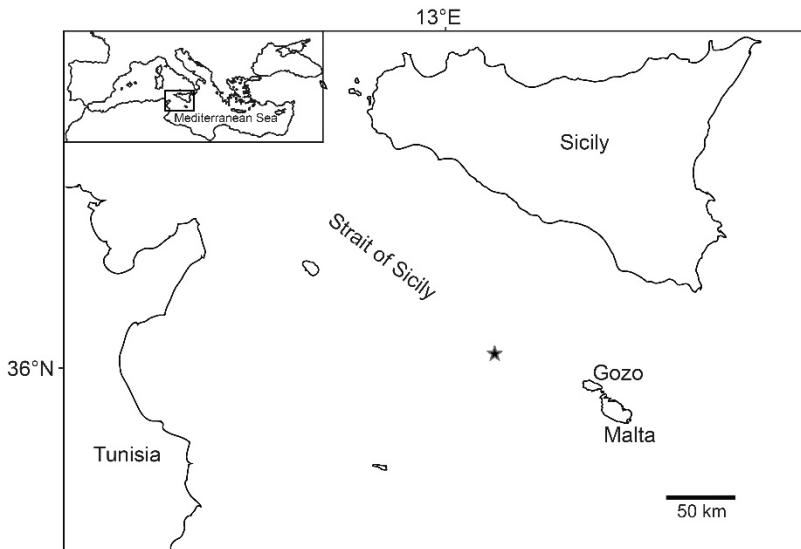


Figure 2. Map of study area. The black star indicates the collection site of the specimens of *Gaidropsarus granti*.

Both individuals were fixed in 4% formalin and seawater solution, then preserved in 70% ethanol, until their recent rediscovery in the repository of the CNR-IAS laboratory in Castellammare del Golfo (Trapani), Italy.

Our record should be considered chronologically the third Mediterranean finding of *Gaidropsarus granti*, after two individuals caught in the Ligurian Sea in 1989 and 1990 (Orsi Relini and Relini 2014). Our finding actually preceded the first Mediterranean record of November 1995, i.e. one individual caught by a professional fisherman at 360-400 m depth on a sandy bottom off Rhodes, southeastern Aegean Sea and published four years later (Zachariou-Mamalina 1999).

Gaidropsarus granti is associated with seamounts and offshore rocky bottoms (Bañón *et al.* 2010; Orsi Relini and Relini 2014; Bello 2018). Such habitats are difficult to investigate and hardly the object of scientific surveys. This could be the reason for the infrequent records of this species, generally found as single isolated individuals. It was yet noted that a part of the Mediterranean findings come from soft bottoms, generally coarse sand, gravel or detritus on the shelf break or the continental slope, which are generally target areas for commercial fishing: regardless, the records of *G. granti* are still very few and scattered in space and time. Indeed fishermen have been by far the most frequent source of samples and information about this species in the Mediterranean, with only one record from scientific fishing surveys (Mura and Cau 2003) and two from ROV (remotely operated vehicle) video-surveys (Aguilar *et al.* 2013; Bilan and Grinyó

2020), confirming the important role of citizen science, by fishermen in this case, in the monitoring of rare species at sea.

Table 1. Morphometric measurements and meristic counts in *Gaidropsarus granti* specimen collected in the Strait of Sicily. The specimen was 245 mm (total length) and 238 mm (standard length). Asterisks indicate parameters that diverge slightly from previous studies.

	As % of standard length
Head length	23.8
Third predorsal length	33.8
Second dorsal fin base length*	12.6
Anal fin base length*	40.9
Pectoral fin length	14.7
Pelvic fin length	19.5
Preanal length	53.6
Body depth*	15.9
Caudal peduncle height	6.1
	As % of head length
Snout length	24.0
Eye diameter	14.6
Postorbital length*	63.5
Interorbital space	15.5
Upper jaw length*	46.7
Lower jaw length*	43.9
Chin barbel length	26.6
First dorsal-fin ray length	13.8
	Meristic counts
Third dorsal fin rays	59
Anal fin rays	48
Pectoral fin rays	21
Pelvic fin rays	8

Due to the uncertain actual distribution area of *G. granti*, there is no agreement about its biogeographical status, i.e., an Atlantic species that has gradually extended its distribution range across the Mediterranean favored by unknown factors, or rather a native Mediterranean and eastern Atlantic species that is simply uncommon and difficult to catch or observe (Orsi Relini and Relini 2014). Both mentioned theories have some support (see Bello 2018 for a deep insight into this matter). Deidun *et al.* (2021) and Golani *et al.* (2021) consider it cryptogenic on the basis of the scanty data available. Mediterranean records, in fact, have slightly but gradually increased, with the latest published account regarding two individuals collected not far from our sampling site in May 2021 (Vella *et al.* 2021).

Morphological identification of individuals of the genus *Gaidropsarus* may be difficult due to the variable color pattern in juveniles, and to the highly conservative morphological characteristics within the genus (Bañon *et al.* 2022).

The morphometric measurements and meristic counts made on one of our specimens agree with previously published data and support the taxonomic identification (Knorrn *et al.* 2024). Also, the color pattern, which is very peculiar and recognizable (see Figure 1) is considered a good taxonomic characteristic for this species (“back brown, with irregular brown creamy blotches and spots and a whitish longitudinal sinuous band along upper flank” as described by Bañon *et al.* (2022), p. 11).

The systematics of the genus is still unclear, due to the scarcity of samples throughout their distribution range (Knorrn *et al.* 2024), although *G. granti* is currently accepted as a valid species closely related to the congeneric and partially sympatric *G. vulgaris* (Cloquet, 1824) (Barros-García *et al.* 2018).

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