





beautiful areas of the Mediterranean Sea since it is a regional biotope with a wealth of biological diversity. More study is necessary because, regrettably, not many scientific studies have been conducted on Libya's coastal biotopes (El-Drawany 2013, Mahdy et al. 2020, Fitori et al. 2021, Fitori et al. 2022). There is a dearth of literature-based knowledge regarding Libyan snails. 344 species of molluscs were found along the Libyan coast up until the first half of 2020. The most common taxon was the gastropod, which was followed by the bivalvia, cephalopoda, polyplacophora, and scandophorida (Bek-Benghazi et al. 2020). Thus, the goal of this work is to enhance the gastropod dataset from Libyan waters. Furthermore, this project uses educational, scientific, and social communication to emphasise the biodiversity and ecological significance of the Libyan coast.

### Material and methods

The studied specimen of *Algarvia alba* GARCÍA-GÓMEZ & CERVERA, 1989, was collected during scuba diving on August, 2023 from Al-Bardi region near the Libyan-Egyptian border (figure.1) at 15 -20 m depth. The sample was carefully transported to the lab in seawater, photographed, and shared with one of us (AF) for identification.



Fig.1. Location where *Algarvia alba* species was collected in Al-Bardi region, Libyan waters



Fig. 2. collected *Algarvia alba* during this study with distinct morphological features

### Results and discussion

During our survey, the aeolid nudibranch species *Algarvia alba* (García-Gómez & Cervera, 1989) was first recorded crawling on sand-rocky ground at a depth of about 15 -20 m from Al-Bardi region in the Mediterranean Sea off the Libyan coast. the aeolid nudibranch species *Algarvia alba* T is characterized by elongated ,small body that is 11 mm long. The Body covered with cerata arranged in dorsolateral bundles , and milky white in color ,the upper half of the rhinophores, veil, and oral tentacles, which are orange in color. The head has a trapezoidal anterior cephalic veil, and the anterolateral ends of the veil are where the long, conical, and pointed oral tentacles emerge. The little-known nudibranch mollusk *Algarvia alba* García-Gómez & Cervera, 1989 (Aeolidioidea: Facelinidae) lives along the Iberian Peninsula's Atlantic coast on rocky and sandy substrates. Only three specimens of this species are known to exist; two were obtained in the Algarve (Portugal) and correspond to the type series, while the third specimen was captured on camera in a Basque country (Urgorri et al.2023). In the northwest Mediterranean region of Spain, in L'Escala, a single specimen of *Algarvia alba* (6 mm long) was recently photographed and collected. This specimen perfectly matched the original description (García-Gómez & Cervera, 1989), making it an easily identifiable species with its white body colour, one coloured patch on each side of the head, and partially orange rhinophores. This specimen was discovered surrounded by red algae on a stone at a depth of roughly 15 metres, in an environment that was obviously phytophilous. The recent studies in the Mediterranean Sea have placed emphasis on the diversity of molluscs, both native and exotic. *Algarvia alba* was not detected in any of the multisource data that Bek-Benghazi et al. (2020) collected about marine molluscs in Libyan waters between 2005 and 2017. In terms of biodiversity, population dynamics, biological invasion, species distribution, endemism, migration, and other environmental concerns, climate change is garnering global attention. For example, thermophilic species often spread and increase their ranges in poleward orientations in response to sea surface temperatures (Yapici et al. 2020). Due to its position, the Mediterranean Sea is an interesting hotspot. Many species with subtropical affinities call it home, and it



receives water from the Atlantic through the Straits of Gibraltar (Bianchi 2007). Numerous species have been documented to migrate to the Egyptian shore from the Red Sea, where the Mediterranean Sea and the Red Sea meet via the Suez Canal (Corsini et al. 2005, Bentur et al. 2008, Zakaria 2015, Fitori et al. 2021). When these bio-ecological processes come together, they suggest "tropicalization," which was previously noticeable in the Mediterranean Sea's southeast corner (Bianchi et al. 2018). Finally, it is imperative that the distribution of gastropoda species in the Mediterranean region be closely monitored. In order to improve our understanding of regional biodiversity as a primary objective and even report exotic species, it is imperative that we regularly monitor the environmental factors and climatic shifts in the nearby waters and that we step up scientific efforts along the coasts of North Africa in order to increase the distribution and richness of species in the future.

### Conclusion

Geographically, there is presently a climatic shift occurring in the Mediterranean Sea, which is known to encourage biological invasion and biodiversity loss. *Algarvia alba* (García-Gómez & Cervera, 1989), was found and studied for the first time in the current study near the coast of Libya.

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