The length of *H. tubulosa* specimens ranged from 23 to 26 cm and their weight ranged from 400 to 420 g, while *H. polii* specimens were smaller in size (12.5 to 14 cm and 150 to 180 g). The maximum size of both species was very close to those reported from Turkey (Gonzalles-Wangüemert et al., 2014).

Given that sea cucumbers are detritivorous invertebrates that feed on benthic microorganisms and organic particles (e.g. detritus and associated microorganisms), it is clear that both species take benefit from the organically-rich bottom and accordingly from the nutrient inputs of the nearby farm, which is operating since the early 1980s. These results partially confirm the observed increased density of *H. tubulosa* by Vafeiadou et al. (2010) in the vicinity of fish farms in the Dodecanese, suggesting a relationship of mutual benefit.

Concerning the commercial exploitation of sea cucumbers in the Mediterranean Sea, they have been sporadically consumed in some coastal villages of Apulia (southern Italy) since World War II (Sicuro & Levine, 2011). In Turkey, which is the leading Mediterranean country in sea cucumber trade, harvesting from the wild started in 1996 in the central part of the Eastern Aegean coast and it was mainly focused on *H. tubulosa* and *H. polii*. They are exported to the Asian (mainly Chinese) markets frozen, dried and salted reaching 555 tons in 2011 (Gonzáles-Wangüemert et al., 2014), where they are considered a gastronomic delicacy (Sicuro et al., 2012). Given the high export-market demand for sea cucumbers mainly for consumption (the body wall that is edible, accounts for about 56% of the total weight), cosmetics, pharmaceutical and aquarium use, the opportunities for culture of these species should be thoroughly evaluated. Despite the progress made mainly on *Holothuria scabra* and *Apostichopus japonicus* culture in other countries/regions (e.g. in China, Japan, Vietnam, Canada and the Red Sea/Persian gulf; Lovatelli et al., 2004; Al Rashdi et al., 2012), culture efforts in the Mediterranean are currently limited to a research project in Greece that is focused on experimental bottom cage integrated culture for bioremediation (nutrient reduction) beneath sea bass and sea bream cage farms (University of Thessaly, project No 185363 funded by the EU Operational Programme ‘Fisheries 2007-2013’). Accordingly, full control of the reproductive, settling and feeding cycle with appropriate hatchery and rearing techniques (e.g. integrated culture techniques and/or capture-based aquaculture) is necessary for successful culture of Mediterranean sea cucumber species.

2.3 First recorded sighting of the bull ray, *Pteromyalaeus bovinus* (Myliobatidae), in Maltese waters

By G. Nowell and L. Koehler

The Maltese Islands are located in the central Mediterranean Sea, 93 km south if Sicily and 290 km away from the north African coast of Tunisia. The total landmass of the Maltese Islands is about 320 km² and the coast-line presents several bays and lagoons. Golden Bay, also known as Ir Ramla tal-Mixquqa, is located on the North Western side of the Island. The depth of the water from the water’s edge to the mouth of the bay gradually reaches a maximum depth of 15 meters. An investigation on data for Elasmobranch species in Maltese waters by Schembrì et al. (2003) stated that 38 species of Elasmobranchs have been proven to exist in the surrounding waters; for the bull ray, however, the status was set as unconfirmed. The distribution described for the species ranges from the Eastern Atlantic, off the coast of Portugal, and Morocco and Angola, including the Canary Islands (Schwartz, 2005) and Madeira (Schwartz, 2005; Wirtz et al., 2008), from Saldanha Bay to Natal in South Africa to the waters of southern Mozambique (Compagno et al., 1989). In the Mediterranean Sea, the occurrence of *P. bovinus* was reported from Tunisian waters (Merji & Soussi, 2004; Capapè, 1977) as well as in the Adriatic (Dulčić et al., 2008) and Tyrrhenian Sea (Feretti et al., 2005). Observations by Quignard & Capaè (1975) state a higher abundance of bull rays in the southern areas of Tunisia. More recent studies in Tunisian waters showed that *P. bovinus* migrated northwards and entered brackish areas such as the Lagoon of Bizerte (Neifar et al., 1999; El Kamel et al., 2009) and Tunis Southern Lagoon (Merji & Soussi, 2004).

The sighting of three *Pteromyalaeus bovinus* (Geoffroy Saint-Hilaire, 1817) at Golden Bay, Malta, occurred at 8.39 am on Thursday 18th August 2011 during a snorkeling activity organized by Sharklab-Malta. The depth at which the rays were seen was approximately 11 metres. Digital images were captured of two of the rays – the third one was not captured (Fig. 24).

According to the IUCN Red list Conservation Status of marine Fishes of the Mediterranean Sea, *Pteromyalaeus bovinus* belongs to the native species, but remains categorized as “data deficient” for the regional and global red list (Abdul Malak et al., 2011). The population trend is

Fig. 24: Image of the first *Pteromyalaeus bovinus* (Geoffroy Saint-Hilaire, 1817) observed at Golden Bay, Malta on 18th August 2011.
considered as unknown (Wintner, 2006). For the Mediterranean Sea, there is evidence of the occurrence of the bull ray at several locations, including Tunisia, where in some the places it is even considered as frequent (e.g. Capapé, 1977; Meriji & Soussi, 2004).

Pteromylaeus bovinus (Geoffroy Saint-Hilaire, 1817) has not yet, to our knowledge, been confirmed as being present in Maltese territorial waters. The observation of Pteromylaeus bovinus (Geoffroy Saint-Hilaire, 1817) in coastal Maltese waters is valuable as it adds to the list of confirmed species present, helps to identify an existing habitat of this species, and requires further research to ensure the possibility of a regular presence.

2.4 New record of Lobotes surinamensis (Bloch, 1790) from Maliakos Gulf (Central Aegean Sea, Greece)

By S. Kavadas and P. Bekas

A new record of Lobotes surinamensis (Bloch, 1790) in the Maliakos Gulf is reported (Fig. 25). The species is generally distributed in tropical and subtropical waters (Whitehead et al., 1986). It was caught by a professional fisherman on 11 September 2014 close to the Sperchios river estuary (38.86110°N, 22.57932°E) using static nets with a mesh size of 32 mm at approximately 2 m depth. The total length was 409 mm and the total weight 1497 gr. According to the local fishermen, the species was unknown to them. A previous finding of a specimen caught by hand-line at a depth of 5 m in Chalkida (38.46643°N, 23.59213°E) was acknowledged to the authors in October 2011. Nowadays, the presence of Lobotes surinamensis has been sporadically reported in several areas in Greece (Athis, Thermaikos Gulf, Dodecanesos islands) (Papaconstantinou, 2014). In the Mediterranean Sea, the species has been reported in the southern part of Spain, eastern part of Morocco, Gulf of Lion, Tyrrenhenian Sea, Sicily, Central Adriatic Sea and Israel (Froese & Pauly, 2014). The collected specimen is stored in a freezer at the Laboratory of the Institute of Marine Biological Resources and Inland Waters of HCMR.

Fig. 25: The specimen of Lobotes surinamensis from Maliakos Gulf (Central Aegean Sea, Greece).

Acknowledgements

R. Hoffman is a VATAT-supported post-doctoral fellow at the Steinhardt Museum of Natural History and National Research Center, and at the Department of Molecular Biology & Ecology of Plants Tel Aviv University; this research was supported by an Israeli Taxonomy Initiative grant. B. Ahmet Balci and M. Rüştü Özен are thankful to the Turkish Scientific and Technical Research Council (TÜBİTAK) that supported the project (Project Nr. 113O374) and funded the research vessel’s expenses, General Directorate of Fisheries and Aquaculture (BSGM), for permitting experimental fishing in the area; and Prof. Dr. Nalan Gökoğlu, dean of Fisheries Faculty of Mediterranean University, for assigning the research vessel for the study. S. Yapici, Ü. Acar and A. Türker were supported by Muğla Sıtkı Koçman University Scientific Research Fund (BAP 13/06); they thank the Republic of Turkey, Ministry of Agriculture and Rural Affairs, General Directorate of Protection and Control for permitting diving, photo and video recording during the survey. F. Russo is grateful to Fabio Crocetta (Italy) for the critical review and bibliographic help. S. Tunçer and U. Onal thank Mr. Hasan Doğuş Tunç, who kindly donated the specimen to ÇOMU, Piri Reis Museum, Dr. Ronald Fricke, for his valuable contributions to the manuscript, and Dr. Daniel Golani for confirming the identification of the specimen of Logocephalus sceleratus. A. Izquierdo-Muñoz and D. Izquierdo-Gomez wish to thank the secretary of the Fishermen’s Association of Denia (Alicante), Miguel Dalmau, the crew of the trawler ‘Astraleta’, Elena Martinez and Alfonso A. Ramos for the information provided and the delivery of the specimen. E. Konstantinidis, C. Perdikaris and B. Sicuro would like to thank Nick & Chris Georgiou, owners of the fish farming company K. Georgiou S. A. and particularly the diver Josef J. Spilka for their valuable help during the collection of the specimens. Nurçin Gülşahin, Ahmet Nuri Tarakan and Cemal Turan thank Halit Filiz and Anıl Gülsha hin for their help in diving; their study was supported by the Muğla Sıtkı Koçman University Scientific Research Project Coordination Unit, with project number 12/14. M. Triantaphyllou and M. Dimiza aknowledge the support of the project ‘EU FP7 PERSEUS: Policy-Oriented Marine Environmental Research for the Southern European Seas’. Finally, we thank all the anonymous reviewers for their helpful and constructive comments.

References

Ahyong, T.S., Galil, S.B., 2006. First Mediterranean record of