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A checklist of the deep sea fishes of the Levant Sea, Mediterranean Sea

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Abstract

We list sixty five fish species collected at depths greater than 500 m in the Levant Basin, including 10 depth records. The Levantine bathyal ichthyofauna is characterized by its eurybathy, with an upper bathymetric boundary that permitted penetration of the shallow Gibraltar and Siculo-Tunisian sills, and a much lower bathymetric boundary than recorded for conspecifics elsewhere. The opportunistic and resilient ichthyofauna re-colonized recently the deep-sea following the last anoxic event (~ 6 kyr), forming assemblages notably distinct from those in the western Mediterranean. The exploration and production of deep seabed hydrocarbons have raised the specter of severe direct impacts to the deep habitats. There is an urgent need for documenting the full extent of deep-sea biodiversity, and for providing information for the development of competent and pragmatic management plans and effective conservation policies.

Key words: Biodiversity, Eastern Mediterranean

Introduction

In their review of the deep Mediterranean benthos Fredj & Laubier (1985) rightly stated "...the southern part of the Levant Sea has practically never been studied". Indeed, no systematic collection of demersal deep sea fishes was attempted till the late 1980s save for three fishery-motivated surveys: a photographic survey of fish and sharks attracted to bait at depths of 280–1490 m at six stations between Israel and Cyprus (Gilat & Gelman, 1984), a survey using bottom long-lines at depths of 200–1440 m off the coast of Israel (Golani, 1987; Pisanty & Golani, 1995), and a 10 days survey of deep-sea biota between Crete, Cyprus and Israel by the German research vessel 'Meteor' in 1987 (Klausewitz, 1989). By the late 1980s only 11 species had been collected in the Levant in waters deeper than 500 m: *Bathypterois dubius* Vaillant, 1888, *Centrophorus granulatus* (Bloch & Schneider, 1801), *Ceratoscopelus maderensis* (Lowe, 1839), *Dalatias licha* (Bonnaterre, 1788), *Diaphus rafinesquei* (Cocco, 1838), *Etmopterus spinax* (Linnaeus, 1758), *Galeus melastomus* Rafinesque, 1810, *Hexanchus griseus* (Bonnaterre, 1788), *Lepidopus caudatus* (Euphrasen, 1788), *Somniosus rostratus* (Risso, 1827), and *Stomias boa* (Risso, 1810) (Ben-Tuvia, 1971; Gilat & Gelman, 1984; Golani, 1987; Klausewitz, 1989). Since then the rising interest in the Levantine deep sea biota greatly augmented their number (Galil & Goren, 1994; Golani, 1994; Pisanty & Golani, 1995; Golani & Pisanty, 2000; Goren & Galil, 1997, 2002; Jones *et al.*, 2003; Galil, 2004; Goren *et al.*, 2006; Gramitto *et al.*, 2011; Gates *et al.*, 2012, Deval, 2013).

While the study of deep sea fishes in the Levant Sea in the past 50 years was infrequent and uneven, greater efforts were expended in the central and western Mediterranean. Stefanescu *et al.* (1992) reported 31 species collected between 960 and 2251 m from the Catalan Sea (western Mediterranean); Moranta *et al.* (2004) reported 27 species at 400 to 1714 m off the Balearic islands; Follsea *et al.* (2011) reported 67 species collected at 546 to 1598 m south of Sardinia; D'Onghia *et al.* (2004), who compared the fish assemblages off the Balearic Island with the western and eastern Ionian Sea, reported 38, 30 and 37 species, respectively.