

The Scyphomedusae off the Mediterranean Coast of Israel

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The Scyphomedusae of the Mediterranean were the subject of some of the earliest marine research and are well known, but studies of the Levant basin fauna are scarce. The records of Scyphomedusae from the Israeli coasts are by Bodenheimer (1935): *Aurelia aurita* (L., 1758) and *Rhizostoma pulmo* (Macri, 1758), Fishelson (1983): *Pelagia noctiluca* (Forsskal, 1775) and *Cotylorhiza tuberculata* (Macri, 1778), and Spanier (1989): *Cassiopea andromeda* (Forsskal, 1775). On the Egyptian coasts one can find *Pelagia* and *Aurelia* (Dowidar, 1983), and on the Lebanese coasts *Cotylorhiza*, *Cassiopea* and *Rhizostoma* (Lakkis, 1971, 1974; Lakkis and Kouyoumjian, 1974; Lakkis and Zeidane, 1985; Goy et al., 1988). We can add *Phyllorhiza punctata* von Lendenfeld, 1884, new for the Mediterranean Sea, and *Rhopilema nomadica* n.sp., new for science, first found in the Indian Ocean and Red Sea and, like *Cassiopea*, a Lessepsian migrant medusa. *Cassiopea andromeda* is the first known Lessepsian Scyphomedusa. It was first recorded by Keller (1888) in the Suez Canal, again observed by Krukenberg (1888) (Lake Timsah) and more recently by Browne (1926) and Fox (1926) (Great Bitter Lake and Lake Timsah). The first record of *C. andromeda* in the Mediterranean was obtained from Cyprus by Maas (1903). Schafer (1955) reported the occurrence of very young specimens (2-30 mm) on a volcanic island near Thira in the southern Aegean, where the medusae flourished in rocky pools where water temperature reached 36°C due to volcanic activity. *C. andromeda* was recently reported from Lebanon (Goy et al., 1988) and Israel (Spanier, 1989).

Phyllorhiza punctata von Lendenfeld, 1884, was known previously only from Australia, the Philippines and Japan. The single specimen from Israel constitutes the first and only record from the Mediterranean. *Rhopilema nomadica* appeared off the Israeli Mediterranean coast in the mid-seventies. It has become fairly common in the past decade, appearing in ever larger numbers each year. *R. nomadica* has a nearly hemispherical umbrella. Exumbrella minutely granulate, granules fewer and blunter near margin. Margin of umbrella divided into 64 rounded vellar lappets. Ocular lappets small, lanceolate, one third as wide as vellar lappets. Arm disc prismatic. Distal corners of oral pillars tuberculate. Subgenital ostium kidney-shaped. A pear-shaped, tuberculate papilla, interradially on sufumbrella, opposite ostial opening. Eight pairs of large scapulets, their upper sides bearing frilled mouths and numerous filaments. Mouth arms divided distally into two triangular lobes, bearing ventrally numerous frilled mouths and long filaments. Lowermost end bearing a vermicular appendage, terminating in a thin filament.

Stiasny (1938) reported the presence of *R. hispidum* (Vanhoffen, 1888) from the Red Sea. That medusa differs from *R. nomadica* in having sharp conical warts on the exumbrella and swollen "club" appendages at the ends of the mouth arms as compared with blunt tuberculation and vermicular filaments of the latter. On examination, all of Stiasny's specimens from the Red Sea proved to be identical with our Mediterranean material. It is of interest that the juveniles of *Alepes djedaba* (Forsskal, 1775), a Lessepsian migrant carangid fish, are commonly found in association with *R. nomadica*, taking shelter under its umbrella and among the filamentous mouth arms.

The mass appearance of a previously unknown Lessepsian migrant medusa off the Israeli coast is, unlike the seasonal proliferation or cyclical fluctuation of other Mediterranean medusae, the exponential phase of an intruder - a pattern recognized in other Lessepsian migrants.

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