

The Nematocysts of *Rhopilema nomadica* (Cnidaria, Scyphozoa) - A new Lessepsian Scyphomedusa in the Eastern Mediterranean

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Large aggregations of the jellyfish *Rhopilemanomadica* GALIL, 1990 - a new lessepsian migrant into the Mediterranean (GALIL *et al.*, 1990) - have been observed off the Levantine coasts in the past seven years. This jellyfish, which umbrella could reach a size of one meter, inflicts painful stings. The severity of the stings is related to the area affected and depends on individual sensitivity. The symptoms involve a burning sensation in the contact area, swelling and development of fluidfilled blisters that may persist for days and remain as weal marks. Systemic symptoms in the most severe cases may involve high temperature, fatigue and muscular aches.

Nets strung along beaches for the protection of bathers were ineffective as tissue fragments, mainly the tentacles of the oral lobes and of the umbrella, that contain nematocysts, passed through and caused a "stinging water" sensation for bathers. Local municipalities reported a decrease in beach attendance during periods of jellyfish swarmings.

In 1991 the joint research effort of the Universities of Trieste, Haifa and the National Oceanographic Institute of Israel aimed at the study of the biology, morphology and distribution of *R. nomadica*. This work summarizes the first observations on its nematocysts.

The nematocysts were culled from freshly caught jellyfish. Oral tentacles were excised and immersed in distilled water for 24H at 5°C, then homogenized. The homogenate was centrifuged repeatedly (at 3500 rpm, 15 min.); the supernatant removed, the pellet was re-suspended in distilled water until satisfactory purification. Nematocysts discharge and fixation of SEM samples follow procedures described in AVIAN *et al.* (1991).

Our preliminary results attest to the presence of four types of nematocysts in adult specimens of *R. nomadica*.

-*Heterotrichous microbasic eurytele*. It has an everted tubule with a well-defined shaft armed with three helicoidal series of spines. Its capsule, 4-6 µm long, is ellipsoidal.

- Large *Holotrichous isorhiza* has sub spherical capsules, 8-12 µm long. The everted tubule is armed with three helicoidal series of triangular spines.

- *Heterotrichous isorhiza* has capsules ranging from ellipsoidal to truncated cones, 4-5 µm long. The everted tubule is proximally armed with three helicoidal series of flat, lanceolate spines, and distally armed with short, blunt spines.

- Small *Holotrichous a-isorhiza*, the smallest of the nematocysts, has an ovoid to sub spherical capsule only 2-3µm long, with the everted tubule armed with three helicoidal series of little spinules.

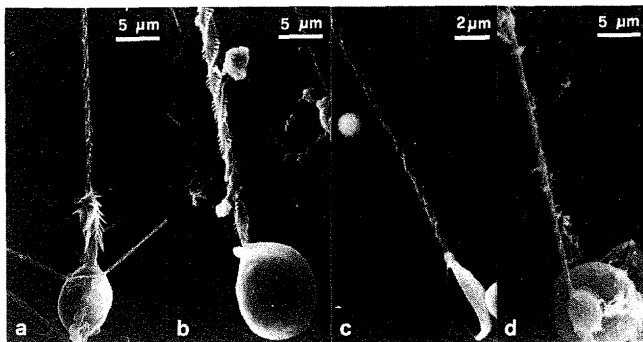


Fig. 1. SEM micrographs of the nematocysts of *R. nomadica*. a, discharged *Heterotrichous microbasic eurytele*; b, discharged large *Holotrichous isorhiza*; c, discharged *Heterotrichous isorhiza*; d, discharged small *Holotrichous isorhiza*.

The eurytele type is common both in the tentacles and in the gastric filaments, the large holotrichous isorhiza is more frequent in the scapulate tentacles than in the oral lobes, and the small holotrichous isorhiza is the commonest type, widely distributed in all areas.

It is of interest that a co-generic species, *R. esculenta* Kishinouye, similarly has four nematocysts types in the adult (CHEN & DING, 1981); the classification proposed for the *R. esculenta* nematocysts is otherwise not correspondent with our observations. CHEN & DING's classification is based solely on light microscope observations, and it is possible that their anisorhiza-type nematocysts are in fact the isorhiza-type nematocysts we have identified in *R. nomadica*.

#### REFERENCES

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