

REMARKS ON SPONGE-DECAPOD ASSOCIATIONS IN THE NORTH AEGEAN SEA

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It is well known that sponges often live in association with other organisms among which, many Decapod Crustacean species. Sponges may use crabs as a substrate for settlement (Balls 1956, Sara & Vacelet 1973, Aroyo et al. 1976, etc.) or they may accomodate various decapod species inside their canals (Arndt 1933, Sube 1970, Frith 1976, Westigna & Hoetjes 1981, Peattie & Hoare 1981, Koukouras et al. 1985, Voultziadou-Koukoura et al. 1987, etc.).

During a study on the Demosponges of the North Aegean Sea, numerous sponge samples were collected from depths between 3 and 350 m. Some of the sponges were found to be settled on decapods, while others were inhabited by various decapod species.

A. Decapods used as substrates by sponges. Five sponge species were found to be settled on the carapace and/or the pereopods of some crabs.

The crab *Dromia personata* (Linnaeus) was found to "carry" the sponge *Hymeniacidon* sp. (fig. 1). It is known that the species belonging to the genus *Dromia* very often have sponges on their carapace for camouflage and protection (Balls 1956).

The sponge *Aplysina aerophoba* (Schmidt) was found on the crab *Pisa armata* (Latreille); four small individuals of this species were settled on the carapace of the crab (fig. 2). This is also an association which has not been previously reported.

Two species of the genus *Inachus*, namely *I. communissimus* Rizza and *I. thoracicus* (Roux), had attached on their carapace and their pereopods the sponges *Suberites carnosus* (Johnston) and *Ficulina ficus* (Linnaeus) the former (fig. 3,4) and *Tedania anhelans* Lieberkühn the latter (fig. 5). *T. anhelans* was also found on the second pereopod of the crab *Macropodia longipes* (Milne Edwards & Bouvier) (fig. 6). It should be mentioned that in the members of the Majidae family (genera *Pisa*, *Inachus*, *Macropodia*, etc.) the sponges settle during their embryonic stages and they subsequently grow up, while *Dromia* species put them on their body (Balls 1956).

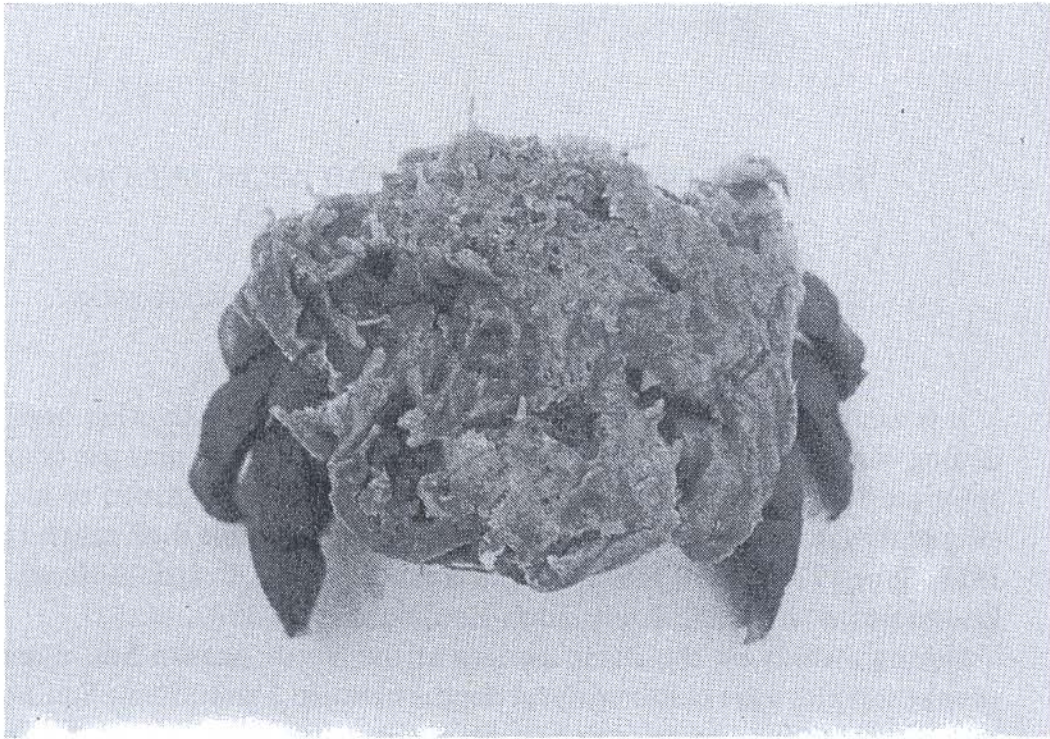


Fig. 1. The sponge *Hymeniacion* sp. on the carapace of the crab *Dromia personata* (Linnaeus).

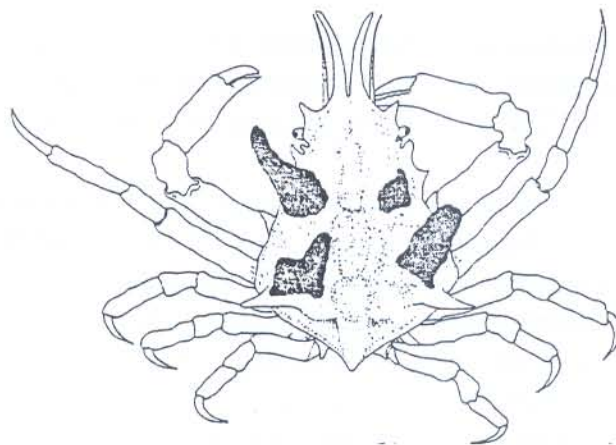


Fig. 2. Four young individuals of the sponge *Aplysina aerophoba* (Schmidt) settled on the carapace of the crab *Pisa armata* (Latreille).

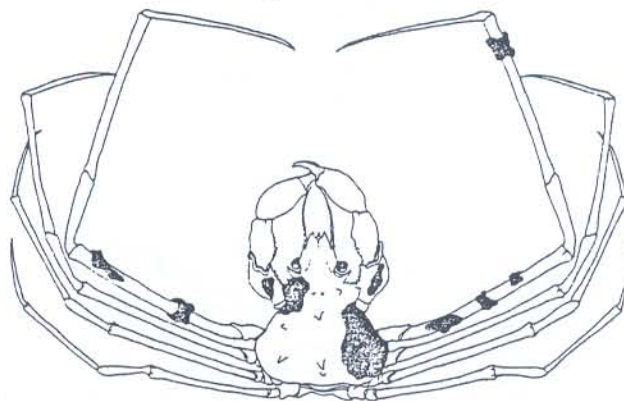


Fig. 3. Young individuals of the sponge *Suberites carnosus* (Johnston) on the carapace and the pereopods of the crab *Inachus communissimus* Rizza.

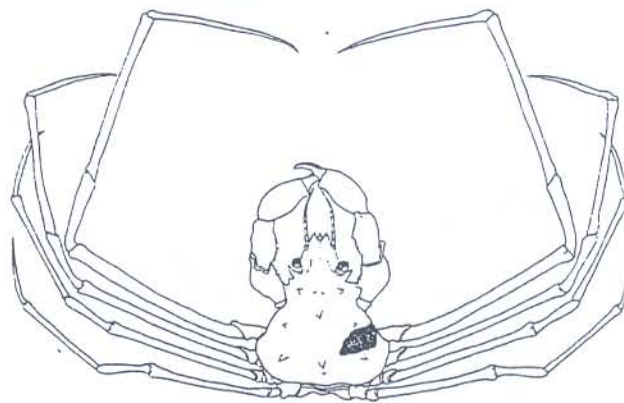


Fig. 4. A young individual of the sponge *Ficulina ficus* (Linnaeus) on the carapace of the crab *Inachus communissimus* Rizza.

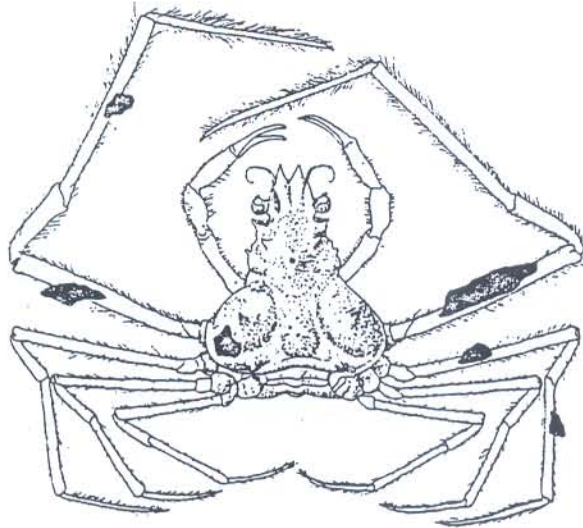


Fig. 5. Young individuals of the sponge *Tedania anhelans* Lieberkühn settled on the carapace and the pereiopods of *Inachus thoracicus* (Roux).

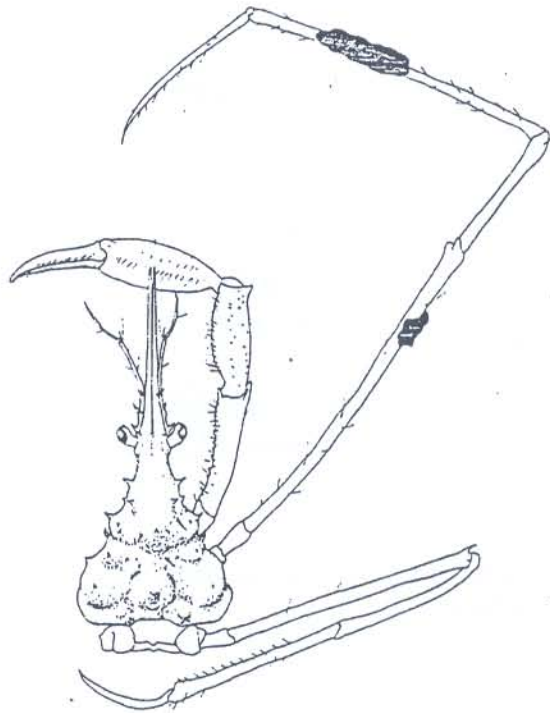


Fig. 6. Two young individuals of the sponge *Tedania anhelans* Lieberkühn on the second pereiopods of the crab *Macropodia longipes* (Milne Edwards & Bouvier).

Two sponge species were found settled on gastropod shells in which hermit crabs were living. i) the sponge *Suberites domuncula* (Olivi) was very often settled on gastropod shells inhabited by *Paguristes eremita* (Linnaeus). According to Sara & Vacelet (1973), this sponge species is almost always living on gastropod shells inhabited by hermit crabs. ii) the sponge *Ficulina ficus* was settled on gastropod shells inhabited by the hermit crabs *P. eremita* and *Pagurus cuanensis* Bell.

B. Decapoda living inside sponges. Six decapod species were found to live inside the canals of sponges *Mycale syrinx* (Schmidt) and *Cacospongia scalaris* Schmidt, as can be seen in table I.

Table I. Decapod species found to live inside the canals of two sponge species.

Decapod species	Host sponges
<i>Galathea intermedia</i> Lilljeborg	<i>Mycale syrinx</i>
<i>Galathea nexa</i> Embleton	<i>Mycale syrinx</i>
<i>Munida iris rutllanti</i> Zariquiey Alvarez	<i>Mycale syrinx</i>
<i>Pilumnus spinifer</i> Milne Edwards	<i>Mycale syrinx</i> <i>Cacospongia scalaris</i>
<i>Philocheras sculptus</i> (Bell)	<i>Mycale syrinx</i>
<i>Typton spongicola</i> Costa	<i>Mycale syrinx</i>

The species *G. intermedia*, *G. nexa*, *Munida iris rutllanti* and *P. sculptus* are reported for the first time as sponge inhabitants, while *P. spinifer* and *T. spongicola* have been found in sponges by various authors (Arndt 1933, Koukouras et al. 1985, etc.).

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