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ISSN 2039-0394 (Print Edition)
ISSN 2039-0408 (Online Edition)

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Biodiversity Journal

MARCH 2016, 7 (1): 1-200

FOR NATURALISTIC RESEARCH
AND ENVIRONMENTAL STUDIES

Polycera quadrilineata (O. F. Müller, 1776) - Eastern Sicily, Mediterranean Sea

BIODIVERSITY JOURNAL
2016, 7 (1): 1-200

Quaternly scientific journal
edited by Edizioni Danaus,
via V. Di Marco 43, 90143 Palermo, Italy
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Official authorization no. 40 (28.12.2010)

ISSN 2039-0394 (Print Edition)
ISSN 2039-0408 (Online Edition)

***Polycera quadrilineata* (O.F. Müller, 1776) (Gastropoda Polyceridae).** Order Nudibranchia (Mollusca, Opisthobranchia). Nudibranchs are commonly known as "sea slugs" because they are not shelled molluscs. The evolution of the shell in gastropods followed a complexity plan of development, starting from simply low spiral, patelliform structures to highly twisted shells, the most safety house where a soft-body animal could hide from predators. How could shells be more efficient? After the "invention" of the shell, gastropods - which became heavy and slow - started to produce a thin shell. Increasing mobility conducted to shell reduction and this latter required a new plan of defense from predators. Probably around 3 or 4 hundreds of years ago, nudibranchs evolved from shelled molluscs and diversified. What is the successful of this new branch of gastropods due to? Toxicity or simply disgust to predators. This condition was reached by nudibranchs in two different ways. Some accumulate chemical active molecules throughout their tissues from the natural host upon which they feed, thus resulting venomous or stodgy. Some others build an internal equipment of spicules, which make them very hard to eat. How to inform their potential predators of their dangerous internal items? Nudibranchs are very beautiful marine organisms, showing delicate external soft parts and spectacular colors, often comparable to butterflies. The reason of these showy colorations is the aposematic message; warning colorations mean: "I am venomous" so that predators immediately learn it is better to avoid these striking animals.

The photograph shows a specimen of *P.quadrilineata* crawling on an ascidian looking for some encrusting bryozoans to eat (Summer 2004, Riposto, Catania, Eastern Sicily) (cover photo by Danilo Scuderi).

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