

Once upon a time...

IN THE KINGDOM OF PHOTOPHILOUS ALGAE

I. SKOULA - Y. KOULOURI - C. DOUNAS



**1st
AWARD**

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Conference of Physiological
Society for Pedagogic
& Scientific Approaches

BIOWATCH
EXPLORING SEA LIFE

Introductory Letter

The fairy tale is based on a modern scientific problem, the introduction of marine tropical species in the Mediterranean Sea through the Suez Canal (Lessepsian migration), the investigation of its effects on Mediterranean ecosystems and the search for management interventions. Moreover, the names of the “heroes” follow the scientific taxonomic nomenclature* in order to introduce the children with the species international classification system first developed by Carl Linnaeus (1707-1778). The tale becomes “a bridge of communication” between the world of fantasy and science. It was awarded 1st prize at the 4th Educational Symposium of Phycology in Greece for its pedagogic and scientific approach.

*The scientific name of each species (animal or plant) is in Latin, and consists of two parts. The first part indicates the genus and the second part indicates the species. The name is written in italics with the first letter of the genus always capitalized (e.g. *Sarpa salpa*).

«The sea, the sea, who will be able to drain it dry?»
(*G. Seferis*)



*Experimental study of trophic preferences of the tropical herbivorous species *Siganus luridus* (common name: dusky spinefoot) which has invaded the Mediterranean Sea through the Suez Canal.*

Tritons began to whistle through their shells....
and then the lovely Queen herself appeared on a beautiful chariot
led by the beautiful horses called Hippocampus.



The Queen was dressed in a silver dress made of ten narrow horizontal golden stripes, with shiny fins and a black spot on the base of her pectoral fin, as this was the very latest fashion.





Acanthonyx!

Yes,
your Majesty!



He is in
a hurry!

Look!
Here comes
Acanthonyx!

“Look! Here comes Acanthonyx! He is in a hurry!”
said the limpets.

A canthonyx made a deep bow as he presented himself to the Queen and said:
“My Queen, I have found the solution to our problem!!
The Mermaids told me:



The heroes

Photophilous algae:

They prefer areas of the bottom which are exposed to sunlight and they comprise a characteristic biocoenosis of the hard substrate (0-40 m depth).

Caulerpa prolifera (Lamouroux, 1809):

It is a green species of algae. It lives in muddy and sandy bottoms all year round, up to 50 m depth, forming extensive meadows often along with the plant of *Posidonia oceanica*.

Marine phanerogams:

Perennial species of marine plants with leaves, roots, separate male and female flowers and seeds which form extensive underwater meadows along the coasts. In the Mediterranean Sea, there are five species of marine phanerogams with *Posidonia oceanica* being the most common. Their presence along the coasts is an evidence of clean water.

Acetabularia sp.:

It is a greenish-whitish species of algae (green algae). It lives in shallow waters on rocks, pebbles or even shells all year round. At its top there is a cup-shaped disk that looks like an "umbrella".

Padina pavonica (Linnaeus) Thivy, 1960:

It is a brownish species of algae that looks like a "funnel". It is one of the most common algae in the Mediterranean Sea.

Sarpa salpa (Linnaeus, 1758):

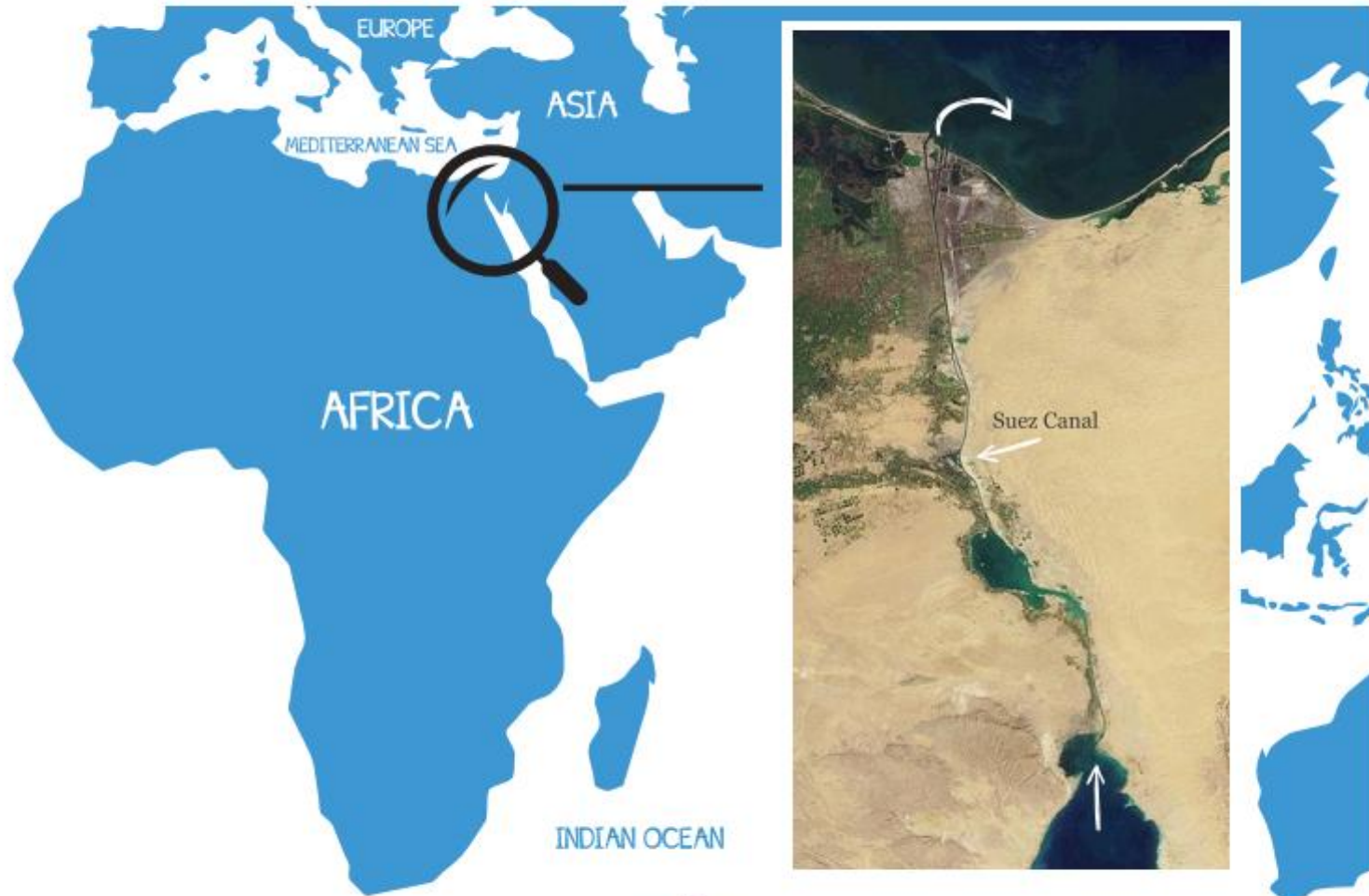
It is a fish species which swims in shoals over rocky, sandy or muddy bottoms as well as among algae and seagrass meadows. The young individuals are carnivorous, feeding primarily on crustaceans (e.g. small shrimps and crabs), while the adults are herbivorous, feeding on algae and phanerogams. It is distributed throughout the Mediterranean Sea and along the coasts of the eastern Atlantic from the Straits of Gibraltar to southern Africa.

Acanthonyx lunulatus (Risso, 1816):

It is a species of crab adjusted to attach to the thalli of different algae.

Lessepsian immigration

The introduction of tropical, marine species to the Mediterranean Sea after the opening of the Suez Canal in 1869 is known as Lessepsian immigration. Especially after the modern projects of widening the Canal in the area of Egypt, the number of Lessepsian species in the Mediterranean Sea is expected to increase rapidly, thus threatening its unique biodiversity, fisheries and public health.



Beneath the crystal clear waters of the sea exists another world... a magic world, a hidden kingdom, the Kingdom of Photophilous Algae. The gorgeous thalli of the brown algae *Cystoseira* formed the beautiful palace of Queen *Sarpa salpa*. That was a very special day, because it was the birthday of the Queen. The moment which everyone was waiting for arrived... the parade for the Queen was about to begin. But...the secret passage that used to hide the Kingdom had been revealed! Numerous Lessepsian fish immigrants have invaded the Kingdom. They are gobbling up all the algae that they can find and are threatening to destroy their Kingdom... Will the Queen be able to save the Kingdom of Photophilous Algae? And, if yes, how?.....



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