

## The non Lessepsian migration of *Ruppia maritima* to the Suez Canal

M.S. FARGHALY

Head Marine Science Dept., Univ. Suez Canal, ISMAILIA (Egypt)

The Suez Canal had been considered as the possible passway for many species of benthos to migrate between the Red Sea and the Mediterranean, a phenomenon known as "Lessepsian Migration" proposed by POR (1978).

The marine plants of the Suez Canal was the subject of investigations since 1908. Recently ALEEM (1980), and FARGHALY (1985), discussed the seaweeds of the canal.

A new record of a benthic plant in the Suez Canal had been published by FARGHALY and DENIZOT (1988) identified as *Ruppia maritima* L. after ASCHERSON *et al.*, 1907, and considered as a new invader to the Suez Canal. Further observations and investigations had been carried out by the author in both the Great Bitter Lake of the Suez Canal and the Bardawill Lake north Sinai, in the Eastern Mediterranean, in order to clarify the ecology, and the possible passway permitted this plant to migrate and colonize a part of the Lake bottom. These efforts may answer the question : from where this plant came ? and to which extent it will spread over the bottom of the Lake ?

The ecological results obtained for two years investigations proved that the Bitter Lakes play an important role on the migration of benthic plant and animal species via the Suez Canal. They could be a reservoir for some and a barrier for others.

The hydrography of the Lakes followed for three years during (1988-1991), reflected the following figures :

1.- Water temperature of the Lakes was always lower than the corresponding air temperature by about 0.5-7°C. The maximum temperatures were in July and August reaching about 30.5°C, while the minimums were in January and February being around 15°C.

2.- An Electric Power Plant of moderate size and capacity in the northeastern corner of the Great Bitter Lake cause an increase in water temperature of about 3-9.5°C in an area of about 5km<sup>2</sup>.

3.- The salinity of the Lakes water had high values; minimum of about 40‰ and maximum of about 46‰.

These figures and investigation on other parameters; PH-0<sup>2</sup> nutrients gave indications that the hydrographic conditions in both Bardawill and Bitter Lakes are more or less similar. These findings make it possible to think about the transportation of *Ruppia* seeds by some migrant birds transiting the small islets of the Great Bitter Lake after landing on the Bardawill bancs.

*Ruppia maritima* L. had extended during the last 3 years on the bottom near the EPP spreading over an area of about 1 km. On other growth or colonization had been observed along the Suez canal or on the gulf of Suez or the Eastern Mediterranean.

In conclusion of these results we consider this plant as a new "non Lessepsian migrant" to the Suez Canal due to the changes in the hydrographic conditions and thermal pollution caused by the EPP of Abo-Sultan in the Great Bitter Lake of the Suez Canal .

The extention of this plant in the Bitter Lakes may affect the seagrass beds of *Halophila stipulacea* and therefore the ecosystem based on.

### REFERENCES

- ALEEM A.A., 1980.- Contribution to the study of the marine algae of the Red Sea. IV -The algae and seagrasses inhabiting the Suez Canal. *Bull. Fac. Sci., K.A.U., Jeddah*, 4, 31-89.
- ASCHERSON P. & KRAEBNER P., 1907.- In ENGLER A. : *Das Pflanzenreich*, 31 (IV, 11) : 142-145, Leipzig, Verlag von Wilhelm Engelmann.
- FARGHALY M. S., 1985.- Remarks on the marine vegetation of the Suez Canal. *Proc. Egypt. Bot. Soc. Conf. Ismailia, Egypt*.
- FARGHALY M.S. & DENIZOT M., 1988.-*Ruppia maritima* in the Bitter Lakes (Suez Canal). *Natur. mons. Bot.*, 53 : 71-73.
- POR F.D., 1978.- Lessepsian Migration. *Ecological studies* , 23, 228p.