

## ZOOPLANKTON COMPOSITION OF THE EASTERN HARBOUR OF ALEXANDRIA, EGYPT.

By

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**ABSTRACT** : Marked changes in the composition of the zooplankton community of the neritic zone of Alexandria took place after the cessation of Nile flood. The percentage of copepod population decreased from 65% to about 41% of the total zooplankton community. Tintinnids increased from 8.3% to about 35%. The meroplankton decreased from 26% to 19%.

The Eastern Harbour of Alexandria (E.H.) is a semiclosed basin with an average depth, of about 5m and average surface area 2.8 km<sup>2</sup>. Water exchange between the E.H. and the open sea take place through two openings (200 & 300m). The E.H. receives daily about 15,000 m<sup>3</sup> of domestic sewage.

**MATERIAL & METHODS** : Monthly samples from March 1976 to February 1977 were collected from 6 stations in the E.H., vertical hauls from surface to bottom were procured, using net 145  $\mu$ . The results represent the average density expressed as organism/m<sup>3</sup>.

**RESULTS & DISCUSSION** : Table (1) shows the monthly variations in the numerical abundance of the zooplankton community in the E.H. The annual average of the zooplankton standing crop amounted to 29700 org./m<sup>3</sup> as compared to 143000 org./m<sup>3</sup> during 1962, i.e. before the construction of the Aswan High Dam. Furthermore, the composition of the community varied as follows :

**Copepods** : The copepod population dominated the zooplankton community, its annual average constituted 41 % of the total community, whereas in the pre-Dam period, copepods reached 65 % of the total zooplankton (Dowidar & El-Maghraby, 1970). Two peaks were apparent for the standing crop of copepods, a major one in June (47,000 org./m<sup>3</sup>) and a minor one in December (20,000 org./m<sup>3</sup>) (Table, 1), while in 1962, i.e. prior to the cessation of Nile flood, the copepods described two peaks in May-June (266300 org./m<sup>3</sup>) and in September-October (200,000 org./m<sup>3</sup>) (Dowidar & El-Maghraby 1970).

The cessation of the Nile flood has greatly affected the magnitudes of both peaks, particularly the autumn peak which was drastically reduced and shifted later to early winter.

**Tintinnids** : Tintinnids were present all the year round, with an annual average of 10,390 org./m<sup>3</sup>, constituting 35 % of the total zooplankton community. Their percentage contribution is about four folds that reported by Dowidar & El-Maghraby (1970) in the pre-Dam period. Tintinnids were more abundant in summer with a pronounced peak 48,800 org./m<sup>3</sup> in August, which constituted 68 % of the total zooplankton community.

**Rotifers** : Rotifers were common during the summer months with a peak in July 6610 org./m<sup>3</sup>. In the other seasons they were either rare or absent. On the average, they constituted about about 3.7 % of the total annual average of zooplankton community.

Table 1. Monthly variations of the average standing crop of zooplankton (org./m<sup>3</sup>) in the Eastern Harbour (vertical hauls).

<u>Groups</u> Months	Copepods	Tintinnids	Rotifers	Cirripedes larvae	Polychaete larvae	Veliger larvae of Molluscs
March	7340	425	50	610	3380	540
April	3970	500	--	510	5000	130
May	28810	1145	--	1535	3800	1015
June	47000	23975	3380	1440	3425	565
July	4710	33490	6610	2040	2550	820
August	6230	48800	1135	2425	7300	420
September	4180	1740	1825	990	540	30
October	7280	1650	--	3095	1345	125
November	5575	930	20	4590	1030	40
December	20010	760	--	4990	2570	480
January	4915	8275	60	375	2005	150
February	6520	2960	45	2460	4445	120
Annual average	12210	10390	1090	2090	3120	370

In the pre-Dam period, rotifers were rather common in the E.H. in summer and autumn, with the maximum record 9000 org./m<sup>3</sup> in November 1961 (Dowidar, 1965).

Polychaete larvae : Common and abundant in all months, their annual average amounted to more than 10 % of the zooplankton community, a percentage higher than that reported in the pre-Dam period. Three peaks were recorded : in February (4445 org./m<sup>3</sup>), April (5000 org./m<sup>3</sup>) and August (7300 org./m<sup>3</sup>). These peaks probably reflect larvae of different polychaete worms.

Cirripede larvae : Present throughout the year in the E.H., with an annual average of 2090 org./m<sup>3</sup> nauplius and cypris larvae of cirripeds. Two peaks were recorded in August (2425 org./m<sup>3</sup>) and in December (4990 org./m<sup>3</sup>). In the pre-Dam period, cirripede larvae were common in the E.H., with a pronounced peak in December (48,000 org/m<sup>3</sup>) (Dowidar, 1965).

Veliger larvae : Veliger larvae of both lamellibranch and gastropod were also permanently represented in the zooplankton community, with a major peak (1015 org./m<sup>3</sup>) in May. The maximum record in the pre-Dam period was 31,870 org./m<sup>3</sup>, in June (Dowidar, 1965).

It is clear, therefore, that the magnitude, periodicity and the relative abundance of the components of the zooplankton community of the E.H. has been affected by the cessation of the Nile flood.

#### REFERENCES :

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