# The bottom fauna of Lake Edku (Egypt - U.A.R.)

*by*

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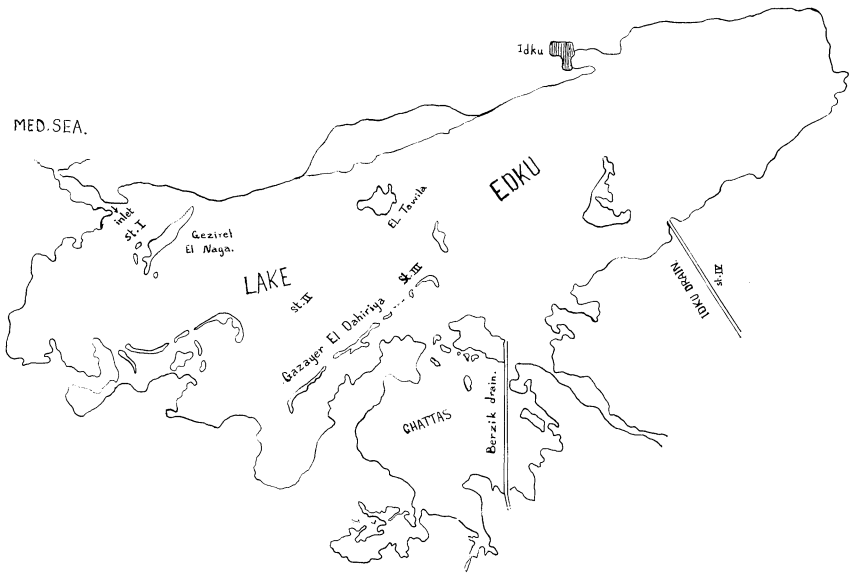
The lake Edku Fig. 1 (about 20 km length and 15 km width) is fed by three drains and has a connection to the sea (Boughas) about 15 meters wide and 5 meters deep.




**Methods and material :**

All collections were made with an Ekman crab which had an opening of 196 sq.cm. Four stations were selected in the lake for the routine sampling. Station I, at the lake sea connection; station II, at the center of the lake; station III, the plant area and station IV, in the Berzik drain.

**Bottom fauna of the lake :**

The fauna living in the lake belong to the following groups :

I-*Amphipoda :* This group is represented by two genera, *Gammarus* and *Corophium.* Two species of *Gammarus* are found, *G. foxi* usually near the shores and *G. aequicauda* in the open waters. Only one

*Rapp. Comm. int. Mer Médit.*, **20**, 4, pp. 503-505, 4 fig. (1972).

species of *Corophium : C. volutator* P. At the lake sea connection *Gammaridae* are the most common and some Isopodes are also observed. At the junction between the canal and the lake, *Corophium* is found along with *Gammarus*, which is mostly near the shores under the stones. At station I, *Corophium* is dominant most of the year. On the east side of the inlet, the two genera are found, while on the west side only *Gammarus* is found. *Corophium* is frequent in open waters (Maximum number recorded in winter for *Corophium* population : 7500 individuals/$m^r$. The maximum number for *Gammarus* (represented by *G. foxi)* was 450/$m^2$ in spring time.

In the plant areas there are small numbers of Amphipodes all over the year. In areas covered by fragmites the *Corophiidae* reached about 6477/$m^2$ to 8262/$m^2$ and the *Gammaridae* about 610/$m^2$. In the drains, the Amphipodes are of good abundance (51204/$m^2$ of *Corophium* and 6732/$m^2$ of *Gammarus)*. However the *Gammaridae* are more abundant on the plant leaves, than on the bottom in areas dense with vegetation.

II-*Polychaetes :* The polychaetes are represented by two species, *Nereis diversicolor* found on the bottom in open water and *Merceriella enigmatica* on the shores, near the sea connection. On the east side of the lake Polychaetes are absent, while on the west, the two species are found with nearly equal amounts. In the plant areas they are nearly absent. An exception is the Ghattas area which is stunned with fragmites, and where the Polychaetes are frequent on the bottom of the canals dug between the growing plants, amounting to 255 individuals/$m^2$. In the drains they are found on the shores, with fragmites and rooted plants.

III-*Molluscs :* STUER gave a list of the Molluscan fauna in lake Edku. To this we add the following : *Donax* sp, *Pholas dactylus*, *Corbicula artini*, *Bullinus* sp and *Neritina* sp.

The most abundant forms are the *C. artini*, *Cardium edule* and *Bullinus*. *Cardium* is found on the west side of the lake's inlet, while *Corbicula* is found mainly in the drains. In general *Corbicula* is more spread in less saline waters than in brakish waters. In the Edku drain, higher numbers of *Corbicula* are recorded (about 1265/$m^2$) than in the Berzik drain (1122/$m^2$).

IV-*Oligochaeta :* All Oligochaetes in the lake belong to the family *Naididae*. Abundant specimens were found in open waters and in the drains specially in winter time.

V-Mysids : The *Mysids* found in the lake belong to the species *Mesopodopsis slabberi* (Van Beneden). This occurs in small numbers, in some parts of the year, at the lake sea connection and in open waters. It is a marine littoral animal, entering the lake by the entering currents from the sea.

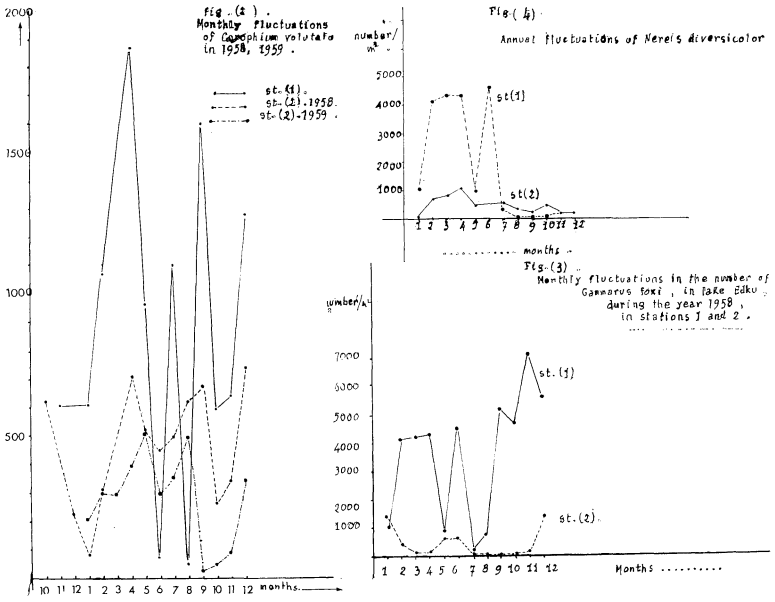
VI-*Chironomidae :* Chironomid larvae in lake Edku are present mostly in plant areas and almost belong to the species *Chironomus plumosus*, where food items of this insect are present (deteriorating plants) They reach their maximum abundance in December, January and February.

VII-*Hydrachnids :* These are found in rare amounts.

**Productivity of bottom fauna in lake Edku and their seasonal periodicity**

The Amphipodes as well as the Polychaetes are the most abundant bottom animals in the lake. These animals are most frequent at the inlet and in open waters. Their seasonal abundance and variation in these two stations are discussed in the following paragraphs.

I-*Corophiidae* (Fig. 2) : From the data collected during the period 1958-1959, one can note that the curve of numbers of *Corophium volutator* P. show an increase after a minimum occurence is reached. If we compare the curve of seasonal fluctuations with the histogram of size frequency, one can note that, small sizes appear at times of maximum abundance. A new brood is observed after the appearance of a great mortality. From the size frequency distribution, we note the presence of three main broods. The time of the broods differ in the two years. In 1959, the three were in September, November and March, while in 1958, they were in March, July and November. In the months of March and November during the two years there were new offsprings. However it cannot be stated with certainty that these two months are fixed time of reproduction.




II-*Gammaridae* (Fig. 3) : The species of *Gammarus foxi* is the dominant species in the lake. The maximum abundance of *Gammarus foxi* in station I, corresponds to a minimum in station II. In other-words, in springtime the animals show maximum abundance at st. I and minimum at st. II, in July the two stations show minimum abundance indicating high mortality of these animals in this month. A new brood is observed in August, another one in November. They are of maximum abundance in st. II and of minimum in st. I, in winter time. This suggests that these animals migrate to the sea in spring time and to the lake in winter. From the histograms of size frequency distribution we can note that a new brood is provocated every time a great mortality is observed.

III-*Polychaetes* (Fig. 4) : The are represented by *Nereis diversicolor*. They are present in greater amounts in st. I than in st. II. From July to December, these animals migrate to the lake, with the result that st. II shows a greater degree of abundance of these animals than st. I. The time of reproduction, may be from February to June, as the frequency distribution curve shows a peak at that time.

**Summary and conclusion :**

A preliminary study of bottom fauna in lake Edku is given. A detailled study is carried out in this year and will be published later on.

## References

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