

MINISTRY OF FINANCE, EGYPT

Coastguards and Fisheries Service

FISHERIES RESEARCH DIRECTORATE

NOTES AND MEMOIRS No. 10

THE FISHERY GROUNDS NEAR ALEXANDRIA

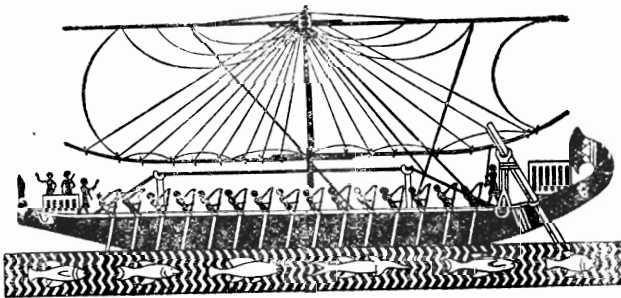
III.—CIRRIPEDS

(with 1 Chart)

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CAIRO

GOVERNMENT PRESS, BULÂQ

1935

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The Fishery Grounds near Alexandria

III.—Cirripeds

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Balanus Trigonus Darwin

St. 50.—Off Abukir; 9 faths. Sand and stones, Amphioxus. 18-10-1933
3 specimens.

St. 77.—N. of the Eastern Harbour of Alexandria; 7 faths. Caulerpa—Halimeda. 5-11-1933.—2 living specimens on a cluster of dead ones.

St. 98.—W. of the Western Harbour of Alexandria; 4 faths. Fine sand with Caulerpa—Posidonia. 7-11-1933.—2 specimens and rudiments of a third, on a shell fragment of a Lamellibranch.

St. 119.—W. of the Western Harbour of Alexandria; 5.5 faths. Yellow sand, stones and mud, with Caulerpa—Posidonia, and Amphioxus. 12-11-1933.—Some specimens together with *Balanus perforatus*, partly on Algae.

St. 140.—A little outside the entrance to the Western Harbour of Alexandria; 4-8 faths. Sand and stones with Caulerpa-Posidonia, and Amphioxus. 14-11-1933. Some specimens on *Balanus perforatus*.

One of the specimens from St. 98 is rather aberrant in its external features; the plates of the wall are almost quite smooth without radiating stripes, and all but white, so that the specimen strongly recalls *Balanus improrissus*. Although opercular plates are wanting, however, the identity can be ascertained surely, the features of the aperture in every detail corresponding with *Balanus Trigonus*.

Balanus Perforatus (Bruguère)

Forma *Angusta* (Gmelin)

St. 78.—NW of the harbours of Alexandria; 5–6 faths. Caulerpa—Halimeda. 5–11–1933.—2 specimens.

St. 119.—W. of the Western Harbour of Alexandria; 5.5 faths. Yellow sand, stones and mud, with Caulerpa—Posidonia, and Amphioxus. 12–11–1933.—Several specimens together with some specimens of *Balanus trigonus*.

St. 140.—A little outside the entrance to the Western Harbour of Alexandria; 4–8 faths. Sand and stones with Caulerpa—Posidonia, and Amphioxus. 14–11–1933.—One large specimen on which some specimens of *Balanus trigonus* are seated.

Balanus Improvisus (Bruguère)

Forma *Communis* Darwin

Edku Lake.—At the island Derfil. 1–10–1933.—A great cluster on a rush stalk and several specimens on shell of Lamellibranchs from muddy bottom.

St. 41.—On algae from coastal rocks at the eastern side of Abukir. 14–10–1933.—Some juvenile specimens.

Forma *Assimilis* Darwin

On stones from the bridge at the entrance to Lake Edku. 17–10–1933. Several specimens with thin, almost pellucid wall plates.

Balanus Amphitrite Darwin

Forma *Communis* Darwin

Eastern harbour of Alexandria, on the bathing-house, 30–8–1933. A lot of specimens.

Eastern Harbour of Alexandria ("Epifauna"). 10–9–1933. Some few specimens.

Eastern Harbour of Alexandria, under the hull of a ship. 10–9–1933. A couple of specimens on the shell of a living Lamellibranch.

St. 5.—Eastern Harbour of Alexandria, 2–3.5 faths. Sandy bottom with Caulerpa—Codium. 11–9–1933.—Two specimens.

Biologically the specimens from the bathing-house are interesting; they are of an uncommonly high and narrow shape and seem to belong to a population, the numerous individuals of which have settled in a comparatively narrow place, and have accordingly been forced to grow comparatively more in height than in width.

Balanus Sp. Juv.

Rocks outside the barracks of Ras el Tin (Alexandria). 10-10-1933.

One small specimen on a fragment of a Lamellibranch; specific characters not yet surely discernible.

Chelonibia Patula (Ranzani)

Bight of Abukir, 10 faths. Trawl catch. 3-9-1933.—Several specimens on the carapace of a *Portunus* sp.

The rostro-carinal diameter of the specimens vary from 16 mm. down to little more than 1 millimetre. The smallest individuals have a special interest, indicating that the rostrum and the rostrolateralialia arise separately. This might be expected a priori, the limits between the plates being visible in the "rostrum" of outgrown specimens when seen from the inner side. The wall crown of quite small individuals consists of 8 separate plates among which a real rostrum is present. This corroborates the words of Pilsbry⁽¹⁾. "In the least modified species (of the genus), *C. patula*, the structure of the wall reminds one of *Balanus*, but I venture the opinion that the resemblance is probably due to convergence; the structure being homoplastic." Runnström's investigations of the development of *Balanus*⁽²⁾ have demonstrated that this genus has no real rostrum; the plate designed as a "rostrum" in the adult ontogenetically consisting of the coalesced rostrolateralialia alone. In *Balanus* moreover the "carinolateralialia" are formed secondarily by a division of the primary lateralialia. In the earliest stages of *Chelonibia* at hand three pairs of lateralialia are distinct beside a carina and a rostrum, the latter with neither radiae nor alae. This seems to indicate that the relations between *Chelonibia* and *Balanus* are more remote than has often been assumed, and it again demonstrates the difficulties arising through "false homologies", which I have pointed to on an earlier occasion⁽³⁾.—

⁽¹⁾ The sessile Barnacles contained in the U.S. National Museum. Bull. 93, Smithsonian Inst. U.S. Nat. Mus. Washington, 1916.

⁽²⁾ Zur Biologie und Entwicklung von *Balanus balanoides* (Linné).—Berg. Mus. Aarb., 1924-1925, Naturv. raekke. Bergen, 1925.

⁽³⁾ Plattenhomologien, Ontogenie und Phylogenie der Cirripeden. Palaeont. Zeitschrift. Bd. 7. Berlin, 1927.

It is questionable, whether the present small collections furnish a representative picture of the Cirriped fauna of the Mediterranean waters of Egypt. If so, the fauna must be said to be remarkably poor. It would, however, be rather surprising, if, e.g., a species like *Chthamalus stellatus* (Ranzani) should be entirely wanting along the Egyptian Coast as long as it is one of the most abundant species of all other Mediterranean coastal waters hitherto investigated, where it belongs to the tidal region and the surf zone. *Chthamalus stellatus* is common on the Algerian coast and abounds on the rocks of the Adriatic from which localities I have had material⁽¹⁾.

Most of the Egyptian species collected are distributed throughout the Mediterranean, and may have entered this sea from the east or the west. The only species of geographical interest seems to be *Balanus trigonus* (S. fig. 1). Its eastern Atlantic distribution is by PILSBRY (l. c.) said to be "Madeira and Azores to South Africa", and he quotes the "Red Sea" among its habitats. On an earlier occasion ⁽²⁾ I have mentioned that we have as yet no report of its occurrence on the Moroccan Coast, where we shall possibly find its northern limit in the eastern Atlantic. With our present knowledge nothing indicates that *Balanus trigonus* has entered into the Mediterranean from the west. The species has not hitherto been reported of from the Mediterranean. Our rather scarce knowledge of the Mediterranean Cirripeds thus seems to indicate that *Balanus trigonus* must be ranged among the species which have entered from the east, possibly on ships, as it has not been found in the Suez Canal. It is also possible that it has entered the Mediterranean at an earlier period, but the few dates at hand afford no safe basis for a discussion of this question.

Chelonibia patula was found living on *Portunus*⁽³⁾ in the Bight of Abukir as well as at Port-Said.

Professor Dr. AD. STEUER has kindly furnished me with some data of interest in connection with the occurrence of the Cirripeds which will in short time appear in his preliminary account. In the region where *Balanus improvisus* was found, viz. in lake Edku the surface waters are quite brackish. *Balanus improvisus* is one of the very few Cirriped species penetrating throughout its habitats into almost entirely fresh water, and is accordingly found also in places where other species cannot thrive owing to the influence of the rivers.

⁽¹⁾ Algerian material has been collected by Professor Dr. G. Saurat and liberally placed at my disposal for determination.

⁽²⁾ Studies on Moroccan Cirripeds (Atlantic Coast).—Bull. Soc. Sci. nat. du Maroc, Tom. VII, Rabat 1927.

⁽³⁾ Comp. Broch, Report on the Crustacea Cirripedia.—Cambridge Expedition to the Suez Canal. 1924. (Trans. Zoolog. Soc. 1927) London, 1927.

Where the influence of the Nile is less powerful, *e.g.* outside the Bight of Abukir in depths between 4 and 9 fathoms, *Balanus trigonus* turns up; the species was also met with in the Bight of Dekhela. Whether its occurrence is continuous, this must be answered by future investigations.—*Balanus perforatus* was only met with in the western part of the investigated area near the Bight of Dekhela, and *Balanus amphitrite*, remarkably enough, only in the Eastern Harbour of Alexandria. It is impossible with our present physiological knowledge of the Cirripeds, to tell which ecological factors are deciding in the last case; the isolated occurrence of the species in this one harbour seems rather enigmatic.

P.S.—After the close of my manuscript I received from Dr. STEUER 2 new samples, *viz.* some pieces of drift-wood on which were seated several specimens of *Balanus amphitrite* Darwin forma *communis* Darwin. Later on, I got a piece of beech-wood which, according to Dr. STEUER, has been lying on sand bottom at Alexandria during $1\frac{1}{2}$ years; on this piece some few *Balanus amphitrite* Darwin forma *communis* Darwin were seated together with some small specimens of *Balanus trigonus* Darwin.

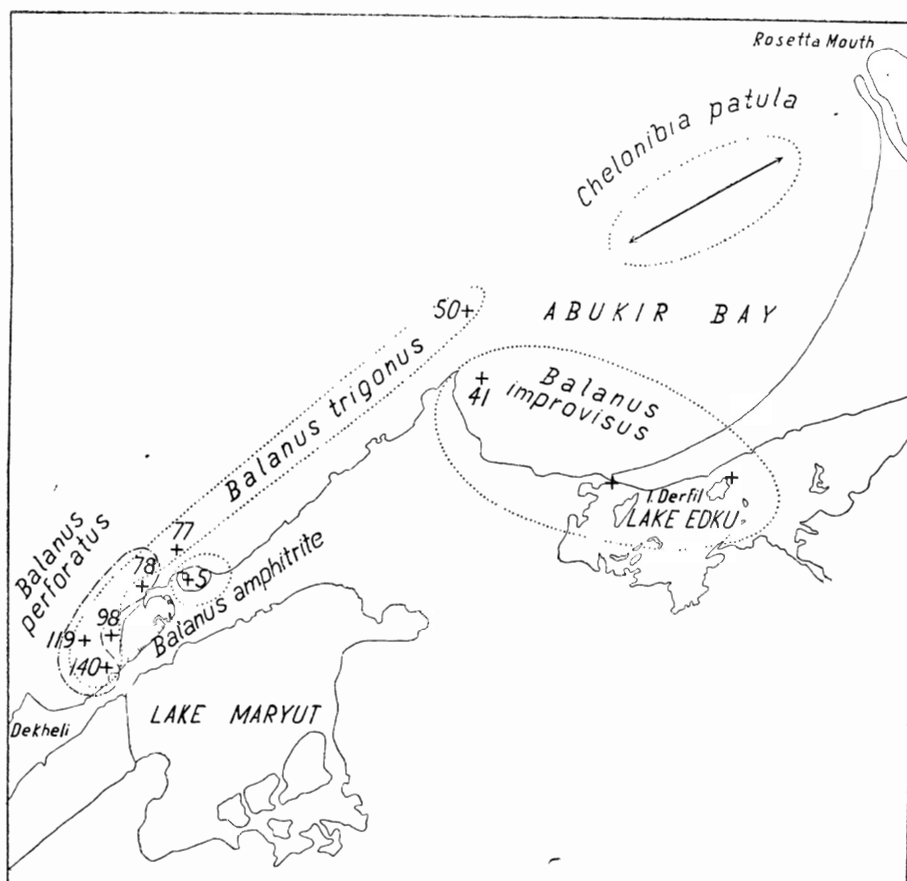


Fig 1.