MINISTRY OF COMMERCE AND INDUSTRY, EGYPT

FISHERIES RESEARCH DIRECTORATE

NOTES AND MEMOIRS No. 18

THE FISHERY GROUNDS NEAR ALEXANDRIA

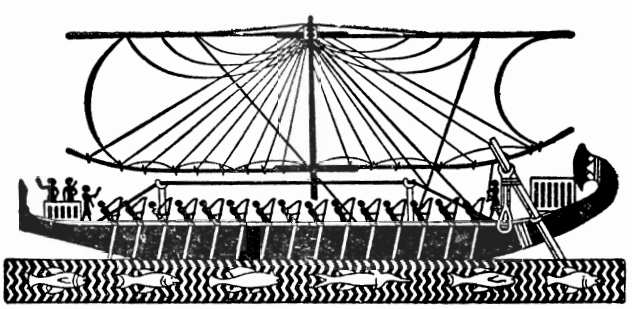
10.—AMPHIPODA BENTHONICA

(with 1 Figure and 8 Charts)

BY

A. SCHELLENBERG, *Berlin*

(*Translated from German*)



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MINISTRY OF COMMERCE AND INDUSTRY, EGYPT

The Fishery Grounds Near Alexandria

10.—Amphipoda Benthonica

BY

A. SCHELLENBERG

List of stations and species taken there

29.VIII. Outer side of Pharo, on Ulva, Caulerpa, Codium cast ashore: *Orchestia montagui.*

Stat. 1, 3.IX.33. Mud, stones, 21 fath., Halimeda-bottom: *Dexamine spinosa.*

5.IX.33. East Harbour, Kayed Bey. Ulva-coral-bottom: *Corophium acutum.*

Stat. 2, 6.IX.33. Sand, mud, 25 fath., Halimeda-bottom: *Ampelisca tenuicornis, Ampelisca typica, Maera grossimana.*

9.IX.33. Sidi Bischr, zone of algae upon stones on the coast: *Elasmopus* juv., *Hyale prevosti, Hyale schmidti, Amphithoe ramondi, Jassa falcata, Corophium acutum.*

10.IX.33. East Harbour, epifauna: *Stenothoe gallensis, Elasmopus pectenicrus, Hyale prevosti, Corophium acutum, Ericthonius brasiliensis.*

10.IX.33. On the body of a ship: *Stenothoe gallensis, Elasmopus pectenicrus, Jassa falcata. Ericthonius* spec., *Corophium acherusicum, Podocerus variegatus.*

Stat. 5, 11.IX.33. Sand, 2–3½ fath., Caulerpa-bottom: *Elasmopus rapax, Ericthonius* spec., *Corophium acutum.*

12.IX.33. Lake Maryût, in open water: *Gammarus foxi, Gammarus aequicauda.*

Stat. 7, 16.IX.33. Stony, 17 fath., Caulerpa-bottom : *Maera grossimana, Leptocheirus bispinosus.*

16.IX.33. Near Alexandria : *Hyale prevosti.*

18.IX.33. West Harbour between tubes of Serpulidae : *Elasmopus rapax, Corophium acherusicum.*

18.IX.33. West Harbour, epifauna : *Elasmopus rapax, Corophium acherusicum, Ericthonius brasiliensis.*

Stat.22, 20.IX.33. In the great pass, rocks, yellow sand, 7 fath., Posidonia-, Caulerpa-, Sargassum-bottom. Red amphipod, living in holes of stones : *Maera grossimana, Maera inaequipes.*

Stat. 24, 21.IX.33. Off Fort Ada, stony, 10 fath., Caulerpa-, Halimeda-, Sargassum-bottom : *Microdeutopus* spec.

Stat. 25, 21.IX.33. By row-boat : *Bathyporeia guilliamsoniana.*:

Stat. 28, 25.IX.33. Stony, 10–12 fath., Caulerpa -, Halimeda-bottom : *Maera grossimana, Maera inaequipes, Tritaeta gibbosa, Leptocheirus bispinosus, Leptocheirus guttatus.*

Stat. 32, 27.IX.33. Coarse sand, stones, little mud, entrance of East Harbour, $5\frac{1}{2}$ fath., Caulerpa-bottom : *Ampelisca brevicornis, Ampelisca diadema.*

28.IX.33. Lake Maryût, on floating sea-weed and in open water : *Gammarus foxi, Gammarus aequicauda.*

28.IX.33. Lake Maryût, on stalks of reed in mud : *Gammarus foxi, Corophium volutator.*

1.X.33. Lake Edku, near the village : *Gammarus foxi, Gammarus aequicauda.*

1.X.33. Lake Edku, in open water : *Gammarus foxi.*

1.X.33. Lake Edku, near Island Derfil : *Gammarus foxi.*

1.X.33. Lake Edku, near Island Derfil, on mud : *Gammarus foxi.*

1.X.33. Lake Edku, near Island Derfil, on sea-weed : *Gammarus foxi.*

Stat. 34, 4.X.33. East Harbour, Silsila corner: *Corophium acherusicum, Corophium bonelli.*

Stat. 35, 7.X.33. Coarse sand and stones, 7 fath., off Sidi Bischr, Caulerpa,- Halimeda-, Posidonia-, Amphioxus-bottom: *Leucothoe spinicarpa, Maera grossimana, Maera inaequipes.*

Po. 10.X.33. Posidonia-bottom near Ras-el-Tin barracks: *Amphithoe ramondi, Pleonexes gammaroides.*

Pok. 10.X.33. Crags off the Posidonia-bottom, Halimeda-, Caulerpa-, brown-algae-bottom: *Elasmopus* juv., *Hyale schmidti, Microdeutopus* spec., *Amphithoe ramondi, Jassa falcata.*

Stat. 41, 14.X.33. Abukir, eastern coast. Crags, brown-algae: *Hyale schmidti, Amphithoe ramondi, Jassa falcata, Pseudoprotella phasma, Caprella pennantis, Caprella liparotensis.*

Stat. 42, Abukir, eastern coast, gray sand with mud and sea-weed-bottom: *Amphithoe ramondi, Pleonexes gammaroides.*

17.X.33. Lake Edku, bridge: *Gammarus aequicauda, Corophium volutator.*

Stat. 48, 17.X.33. Lake Edku, seaside, sandy bottom: *Hyale prevosti.*

Stat. 48, 17.X.33. Lake Edku, upon stones of the bridge: *Gammarus acquicauda, Corophium volutator.*

Stat. 48, 17.X.33. Lake Edku in open water: *Gammarus acquicauda.*

Stat. 49, 17.X.33. Lake Edku on shallow sea-weed-bottom of the lake (Cl=1,13 per cent, S=2,07 per cent): *Gammarus acquicauda, Corophium volutator.*

Stat. 50, 18.X.33. Off Abukir, sand and stones, 9 fath., Amphioxus-bottom: *Leptocheirus bispinosus, Leptocheirus guttatus.*

Pharo, 25.X.33. Outer side, on corals cast ashore: *Orchestia montagui.*

Stat. 53, 26.X.33. Yellow mud, 33 fath.: *Leucothoe lilljeborgi, Eriopisa elongata.*

Stat. 54, 26.X.23. Yellow mud. 55 fath. : *Hyale prevosti.*

Stat. 55, 26.X.33. Mud, 40 fath. : *Harpinia pectinata.*

Stat. 58, 28.X.33. Sand, 4 fath., Caulerpa-, Cymodocera-bottom : *Ampelisca diadema, Microdeutopus gryllotalpa.*

Stat. 61, 30.X.33. Mud. 50 fath. : *Lysianassa longicornis.*

Stat. 68, 2.XI.33. Mud. 37 fath., Caulerpa-bottom : *Ampelisca tenuicornis.*

Stat. 69, 2.XI.33. Mud, 48 fath., Caulerpa-bottom : *Ampelisca tenuicornis.*

Stat. 74, 4.XI.33. Mud. 23 fath., Caulerpa-, red-algae-bottom : *Hyale prevosti.*

Stat. 78, 5.XI.33. Stony, 5–6– fath., Caulerpa-, Halimeda-, Posidonia-bottom : *Maera inaequipes, Elasmopus* spec.

Stat. 82, 5.XI.33. Outer side of Fort El-Ayana, boatdrive, Halimeda-, brown-algae. Amphipods adapted in their colour to the brown-algæ : *Hyale schmidti.*

Stat. 102, 7.XI.33. Stony, 5–6 fath., Halimeda, Caulerpa, brown-algæ, Cystosira : *Dexamine spinosa.*

Stat. 111, 9.XI.33. Stony, 10 fath., Caulerpa-, Halimeda-, Posidonia-bottom : *Leucothoe spinicarpa, Maera inaequipes.*

Stat. 114, 11.XI.33. Stones, sand, mud, 25 fath., Caulerpa-, Halimeda-bottom : *Leucothoe spinicarpa, Leptocheirus pectinatus.*

Stat. 119, 12.XI.33. Yellow sand, stones, mud, $5\frac{1}{2}$ fath., Caulerpa-, Posidonia-, Amphioxus-bottom : *Tritaeta gibbosa.*

Stat. 125, 13.XI.33. Stones, yellow sand, 6 fath., washed out of red-algae : *Apherusa bispinosa, Nototropis guttatus, Elasmopus pocillimanus, Dexamine spinosa, Microdeutopus* spec., *Corophium acutum.*

16.XI.33 East Harbour off the Marine Laboratory : *Elasmopus pectenicrus, Amphithoe ramondi*

Stat. 135, 14.XI.33. 4 fathoms, Caulerpa-, Halimeda,-Posidonia-bottom, on synascidians : *Ampelisca unidentata.*

List of species

SUBORDER GAMMARIDEA

1. *Lysianassa longicornis* Lucas * (Ch. 1)

Stat. 61, 1 specimen 11·5 mm.

Distrib. : Mediterranean.

2. *Ampelisca brevicornis* Costa * (Ch. 1)

Stat. 32, 1♀ ovig. 10·5 mm.

Distrib. : Atlantic, Mediterranean, Indian Ocean.

3. *Ampelisca tenuicornis* Lilljeborg * (Ch. 1)

Stat. 2, 2♂ 4·5 mm.

Stat. 68, 1 juv. 4 mm.

Stat. 69, 1♀ ovig. 6 mm.

Distrib. : Atlantic, Mediterranean.

4. *Ampelisca typica* Bate * (Ch. 1)

Stat. 2, 3 juv. 2·5–3·5 mm.

The specimens differ from *A. tenuicornis* of the same haul by their antennae being a little shorter, the straight carina flexing down rectangularly behind, the telson bearing a dorsal spine, and the outer margin of the dactylus of peraeopod V and VI being provided not with a tooth but with a comb. They do not absolutely agree with the description given by SARS. Antenna II is 3/4 of the length

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* Recorded by CHEVREUX and FAGE from Algeria and Tunisia.

of the body ; the telson has only one dorsal spine at each side and two terminal spines. The rami of uropod III have less spines too.

As I have before me only very small specimens showing no sex characters, immaturity may be responsible for the relative want of spines. The small difference in the length of antenna II, however, finds no explanation by this presumption.

Distrib. : Atlantic, Mediterranean.

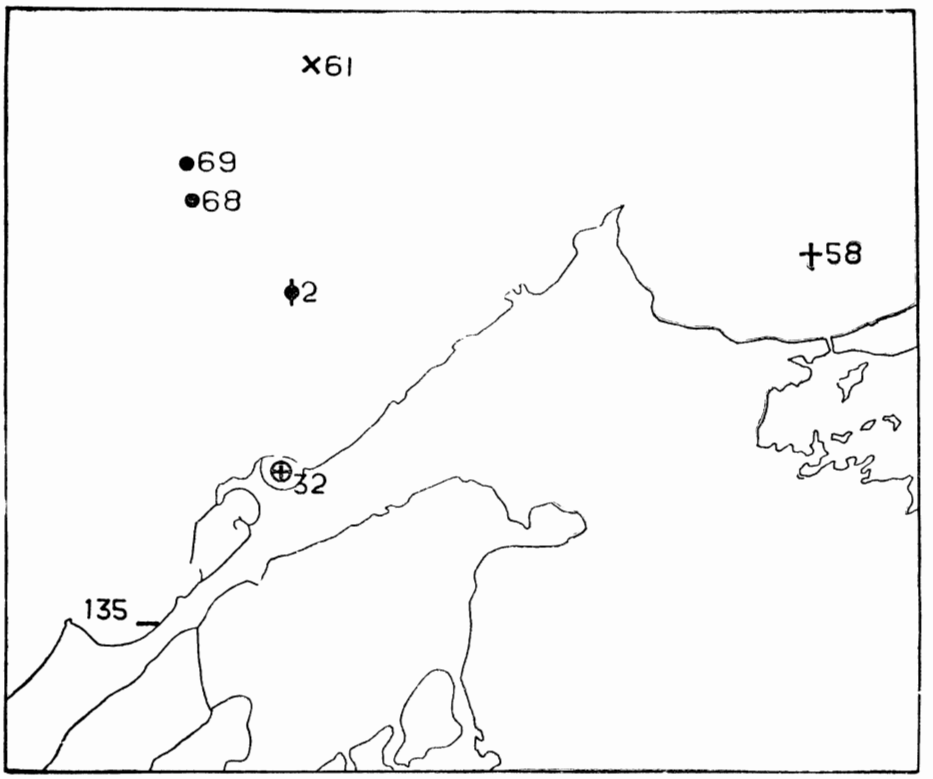

CHART 1.

× *Lysianassa longicornis* Lucas.

○ *Ampelisca brevicornis* Costa.

● *Ampelisca tenuicornis* Lilljeborg.

| *Ampelisca typica* Bate.

\+ *Ampelisca diadema* Costa.

— *Ampelisca unidentata* sp. n.

5. *Ampelisca diadema* Costa (Ch. 1)

Stat. 32, 2 spec., 7 and 7·5 mm.

Stat. 58, 1 ♀ with oostegites 8 mm.

For determining the species I compared it with 4 specimens from the Gulf of Naples. Two of them are pregnant females. Here—contrary to the two males—the hooks at the ventral side of the hind mesosome-segments are missing. Besides epimeres III are rectangularly rounded in all specimens and the telson bears only at its end some short spines, the sides are bare. So DELLA VALLE figures the telson on Plate 37, Fig. 20. In the text he says correspondingly: "L'estremo margine posteriore è armato di varie piccole spine." The telson of *Ampelisca rubella* and *A. diadema* is given in his figures 21 and 20 but a figure of *A. brevicornis* seems to be missing. However Plate 35, Fig. 27 and Plate 38, Fig. 11 refer to the latter species and not to *A. diadema* as DELLA VALLE states. The fact that two figures are given of the same telson shows the confusion in which the author was. Two ♀♀ and two ♂♂ from Heligoland show the same characters as the specimens from Naples. Here too the ♀♀ have no ventral hooks while the ♂♂ have them. Thus this armature becomes a secondary sexual-character which probably is used at copulation. CHEVREUX and FAGE as well as DELLA VALLE give the ventral hooks for both sexes and they also draw the spines at the margins of the telson. I cannot but doubt both statements according to the observations mentioned above. The specimens from Alexandria are without ventral hooks, with epimeres rectangularly curved and with a telson spined at the end only.

Distrib.: Atlantic, Mediterranean

6. *Ampelisca unidentata* sp.n. (Ch. 1, Fig. 1)

Stat. 135, 1 spec. 7 mm.

The species resembles in its outward appearance *A. rubella* (CHEVREUX and FAGE, p. 76). It can easily be identified by its strong antennae of equal length, the peg-shaped appendage at the merus of peraeopod VII and the richly spined or serrated inner margins of the rami of uropods II and III, as well as by the inner ramus of uropod III tapering into a single point.

Form of head and pigment of eyes like *A. rubella* (l. c.), distinct lenses, the lower ones lying a little behind the front corner. Epimeres

I and II distally rounded, III with rectangular, not sharp hind-angle. First segment of urosome dorsally impressed. Carina very flat and regularly vaulted. Breadth of telson (Fig. 1 c.) almost $\frac{2}{3}$ of its length, more than $\frac{2}{3}$ cleft, one short spine distally at each side, two dorsal spines in the middle of each half.

Antennæ not half as long as the body, otherwise like *A. rubella*.

Peraeopods I-IV similar to *A. rubella*. Dactylus of peraeopods III and IV hardly longer than the metacarpus. Dactylus of peraeopods V and VI with one tooth. Peraeopod VII like *A. bidentata* (Schellenberg 1925, Fig. 6). Basipodite considerably longer than the rest of the joints, posterior lobe distally oblique and surpassing the merus. Ischium longer than the body of the merus and as long as the merus + appendage. Front margin of the merus prolonged in peg-shape. The peg covers 2/3 of the front margin of the carpus. Dactylus shorter than the metacarpus and shortly pointed.

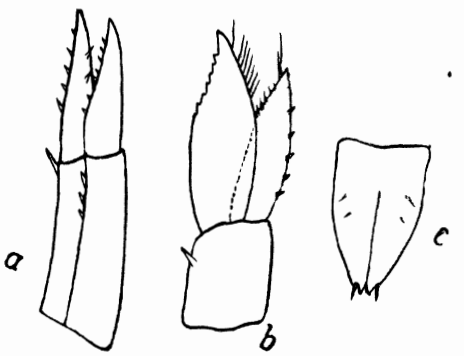

FIG. 1.

Ampelisca unidentata sp. n. ×53.

(*a*) Uropod II.

(*b*) Uropod III.

(*c*) Telson.

The uropods surpass each other successively in length. Uropod I without peculiarities. Inner margins of the rami with several spines. Inner margin of the outer ramus of uropod II (Fig. 1 a) with 7, of the inner ramus with 5 short spines. Rami of uropod III (Fig. 1 b) broad, lanceolate; outer ramus somewhat shorter and thinner than the inner one. Outer margin with 5 well separated short spines. Distal third of the inner margin with 6 closely set short spines and a long bristle before the point. Inner ramus tapers to a sharp point. Distal third shortly bristled at the outer margin of the inner ramus, distal half of the inner margin distinctly denticulate.

The species is closely related to *A. bidentata* from which it differs chiefly by uropods II and III.

7. *Bathyporeia guilliamsoniana* (Bate) (Ch. 2)

Stat. 25, 2♀ 6·5 mm.

Distrib. : Atlantic, Mediterranean.

8. *Harpinia pectinata* Sars* (Ch. 2)

Stat. 55, 1♀ 3·5 mm.

Distrib. : Atlantic, Mediterranean.

9. *Leucothoe spinicarpa* (Abildg.)* (Ch. 2)

Stat. 35, 1 spec. 6 mm.

Stat. 111, 1 spec. 6 mm.

Stat. 114, 1 spec. 7·5 mm.

Distrib : cosmopolitan.

10. *Leucothoe lilljeborgi* Boeck (Ch. 2)

Stat. 53, 1 spec. 4 mm.

Distrib. : Atlantic, Mediterranean.

11. *Stenothoe gallensis* Walker (Ch. 2)

1876 *Probolium polyprion* Catta, Ann. Sci. nat. Ser. 6 Vol. 7, p.15, pl. 2, fig. 1.

1904 *Stenothoe gallensis* Walker, in Herdman : Ceylon Pearl Fish. Suppl, part 2, p. 261, pl. 3, fig. 19.

1906 ,, *cattai* Stebbing, Tierreich, Amphipoda, Lfg. 21, p. 195.

1907 ,, *crenulata* Chevreux, Mem. Soc. Zool. France Vol. 20, p. 471, fig. 1-3.

1909 ,, *gallensis* Walker, Trans. Linn. Soc. London Vol. 12, p. 331.

1916 ,, ,, Barnard, Ann. S. Afr. Mus. Vol. 15, p. 154.

1925 *Stenothoe cattai* Schellenberg, in Michaelsen: Meeresfauna Westafrika, Vol. 3 p. 142.

1928 „ *gallensis* Schellenberg, Trans Zool. Soc. p. 640.

Nec 1925 *Stenothoe cattai* Chevreux et Fage, Faune France 9, p. 132, fig. 131, Paris.

East Port, 2 ♂ 4 mm, 1 ♀ 2·5 mm.

CATTA found, in the sea-plants growing on a ship that had come from Pondichery round the Cape of Good Hope and had laid anchor in Marseille, an amphipod which he identified with *Probolium polyprion*. STEBBING, however, took it for a special species and named it after its discoverer *St. cattai*. The Mediterranean is given as the locality; it is however possible that the species has been transported by the ship. Uropod III is generally taken as the principal character, the last joint of which is geniculate and denticulate at the upper side in the male sex. Joint I of the ramus bears some spines only at the end and is about as long as joint II. CHEVREUX and FAGE give the figure of their *St. cattai* with the definition: "joint II of the ramus of uropod III geniculate;" in the figure, however, joint II of the ramus is in both sexes not geniculate and not denticulate at the upper side but provided with a fine comb; besides this joint I of the ramus is much longer than joint II and its upper margin is richly provided with spines.

This difference shows that the material of CHEVREUX and FAGE was neither *St. cattai* nor *St. gallensis*. CATTA's description corresponds with *St. gallensis* and *St. crenulatus*, two species, which BARNARD had united already. WALKER's name *St. gallensis* having the priority before *St. cattai*, the latter name is to be abolished.

Distribution: Port of Marseille (ship), frequently on the coast of Ceylon, Gambier Archipelago, Seychelles, Zanzibar (ship), Durban, Lome Togo, pillar of a bridge; Dar es-Salam (buildings in the harbour); Red Sea, Suez Canal.

The species may have been imported from the Indian Ocean, both mediterranean localities being in harbours on ships or in the epifauna.

12. *Apherusa bispinosa* Bate * (Ch. 2)

Stat. 125, 1 ♀ with empty broodpouch 4 mm.

Distrib. : Atlantic, Mediterranean.

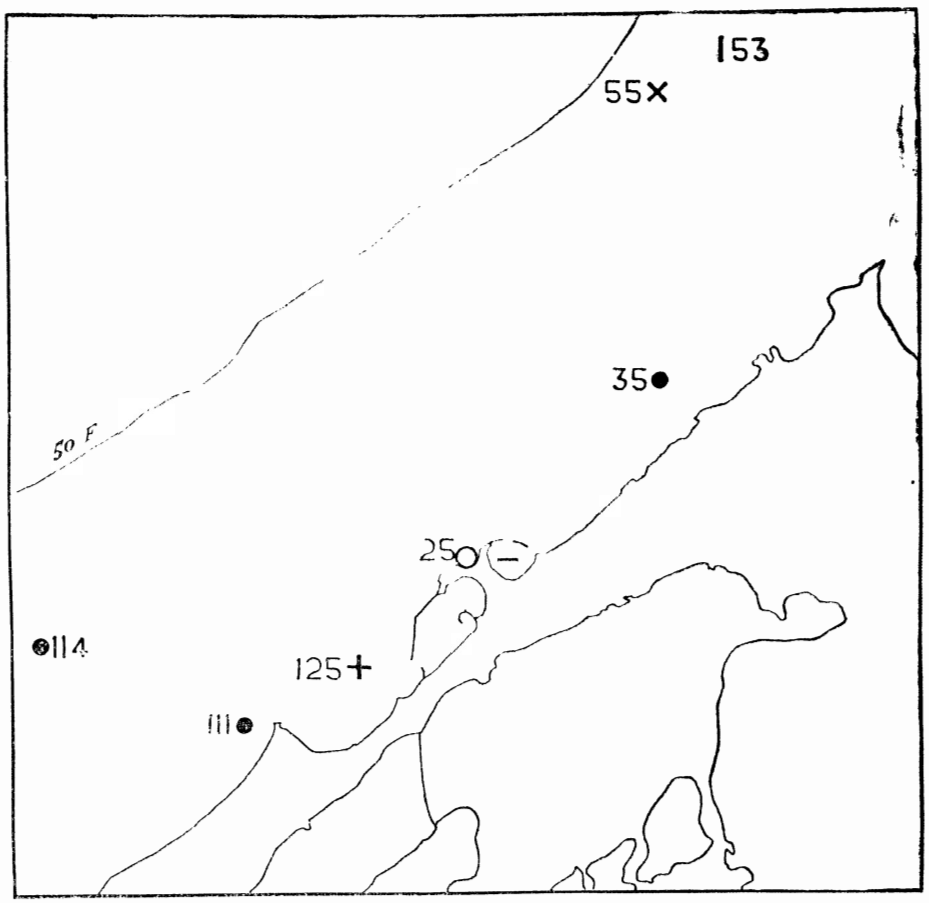

CHART 2.

○ *Bathyporeia guilliamsoniana* (Bate).
× *Harpinia pectinata* Sars.
● *Leucothoe spinicarpa* (Abildg.).
| *Leucothoe lilljeborgi* Boeck.
— *Stenothoe gallensis* Walker.
\+ *Apherusa bispinosa* Bate.
\+ *Nototropis guttatus* (Costa).
| *Eriopisa elongata* (Bruzelius).

13. *Nototropis guttatus* (Costa) * (Ch. 2)

Stat. 125, 1 juv 4 mm.

Distrib. : Atlantic, Mediterranean.

14. *Eriopisa elongata* (Bruzelius)* (Ch. 2)

Stat. 53, 1♀ with oostegites 6·5 mm.

Distrib. : Atlantic, Mediterranean.

15. *Maera grossimana* (Mont.)* (Ch. 3)

Stat. 2, 1♂ 7·5 mm.

Stat. 7, 1 juv. 5 mm.

Stat. 22, 1♀ juv. 5·5 mm.

Stat. 28, 2♂ 7·5 mm and 9 mm, 1♀ ovig. 5 mm, 2 juv.

Stat. 35, 2♀ juv. 6 mm.

Distrib. : Atlantic, Mediterranean.

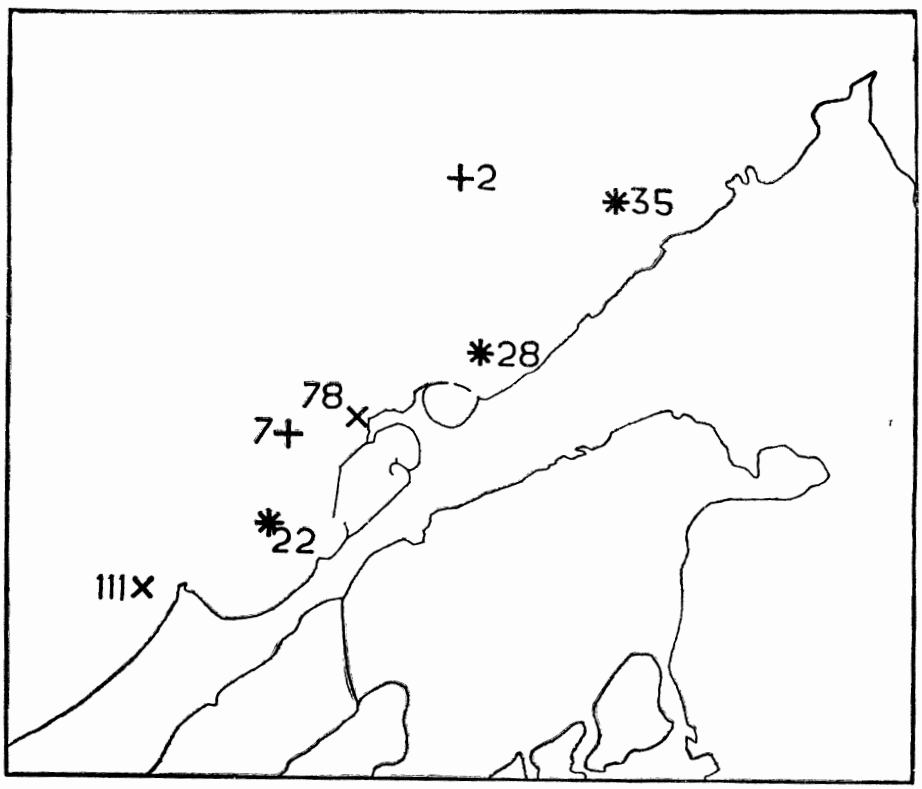

Chart 3.

\+ *Maera grossimana* (Mont.)
× *Maera inaequipes* (Costa).

16. *Maera inaequipes* (Costa)* (Ch. 3)

Stat. 22, 1♀ 7 mm, 1♀ ovig. 10 mm.

Stat. 28, 1♂ 7 mm.

Stat. 35, 1♀ 9·5 mm.

Stat. 78, 1♀ with empty broodpouch 8 mm.

Stat. 111, 1♂ 4·5 mm.

Distrib.: Indian Ocean, Mediterranean, Atlantic.

17. *Elasmopus rapax* Costa* (Ch. 4)

West Harbour, several juv. and ♂ 7–11 mm, ♀ ovig. 8 mm.

Stat. 5, 1♂ 10,5 mm, 1♀ 6 mm.

Distrib.: Warm and temperate seas.

18. *Elasmopus pocillimanus* (Bate)* (Ch. 4)

Stat. 125, 2♂ 5·5 and 6 mm, 2♀ 4·5 mm.

Distrib.: Atlantic, Mediterranean.

19. *Elasmopus pectenicrus* (Bate) (Ch. 4)

East Harbour, several juv. and ♀ ovig. 8 mm, ♂ 7–10 mm.

The species had formerly often been mistaken for *E. brasiliensis* with which STEBBING also identifies it in the "Tierreich." Therefore its distribution is uncertain. Of the Mediterranean it had up to now been noted from Port Said only, where the Cambridge Expedition had found it as well as in the Suez Canal. It occurs frequently in the Indian Ocean between the sea-plants growing on the bodies of ships, on buildings in the harbours and at the bottom. The Berlin Museum possesses specimens, which have been taken off floating pumice 400 nautical miles away from Javahead. Their habitat makes them very fitted for being transported. Transportation from the Indian Ocean into the Mediterranean is very probable.

The *accessory* flagellum of the antenna is two or three jointed in the specimens from Alexandria.

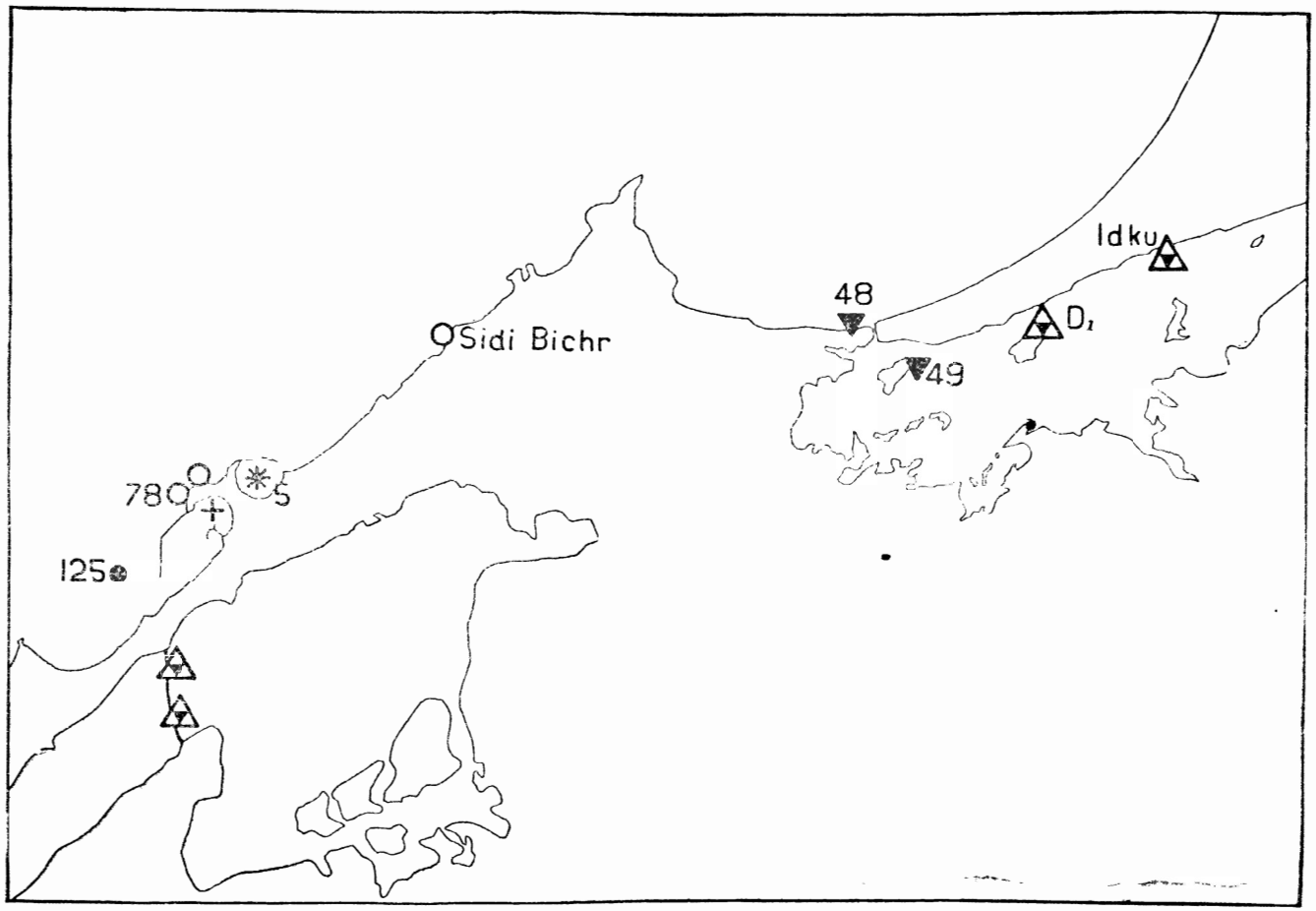

CHART 4.

+ *Elasmopus rapax* Costa.
● *Elasmopus pocillimanus* (Bate).
× *Elasmopus pectenicrus* (Bate).
○ *Elasmopus* sp.
△ *Gammarus foxi* Schellenberg.
✓ *Gammarus aequicauda* (Martynov).

Elasmopus spec. (Ch. 4)

Sidi Bischr. 1 juv. 2·5 mm.

Pok, 1 juv. 4·5 mm.

Stat. 78, 1 juv. 2·5 mm.

20. *Gammarus foxi* Schellenberg (Ch. 4)

1928 Trans. Zool. Soc., Vol. 22, p. 649.

Lake Maryût and Lake Edku, many specimens juv., ♀ ovig. 4·5-6·5 mm, ♂ 6·5–9 mm.

The form had been established on material taken by the Cambridge Expedition in the brackish and fresh-water lagoons of Lake Timsah. I add the following characters which prove important after exact study of the species: segments of the urosome only little vaulted at the origin of the middle-spines. Antenna I only little longer than antenna II, in the ♀ only about $\frac{1}{3}$ of the length of the body. The two last joints of the peduncles of antenna I and II in the ♂ with some tufts consisting of few bristles. Basal joints of flagellum of antenna I and the whole flagellum of antenna II with groups of medium-sized bristles. Tufts and groups of bristles are also in the ♂ distinctly separated from one another. Posterior margin of merus and carpus of peraeopod III of the ♂ with few long bristles, of IV with fewer and shorter bristles. The lower margins of epimeres II and III have bristles and no spines. Both margins of the outer ramus of uropod III in the ♂ with plumous bristles, together with some bare bristles. All bristles mentioned are uncurled. The form is closely related to *G. pungens*. It resembles mostly the figures of SCHAEFERNA (p. 30–32), less those of CHEVREUX and FAGE (p. 253). Their characteristics are the length of the antennae, the armature of the urosome, the reduction of bristles at the coxal plates, and at the peraeopods and the bristles at the lower margins of the epimeres.

Distrib.: Fresh-water lagoons of Lake Timsah.

21. *Gammarus aequicauda* (Martynov.) (Ch. 4)

1931 Zool. Jahrb., Vol. 60, p. 593.

Lake Maryût, Lake Edku, several specimens juv., ♀ ovig. 9–10 mm, ♂ 5·5–11·5 mm.

The specimens are on the whole smaller than those described by MARTYNOV from the brackish water of Lake Douslav (Crimea) (♀ 12·5, ♂ 16·5 mm), therefore they also have fewer bristles. Besides this I can note as a little deviation that the flagellum of antenna II is longer than segment V and has in the ♂ up to 14 joints. I also got the species from Lake Sasik in Bessarabia (LEPSI coll.), from Monfalcone and Rovigno in Istria (Museum Vienna) from Lake Sitra and from saline springs in the desert near Siwa (British Museum).

22. *Dexamine spinosa* (Mont.) * (Ch. 5)

Stat. 1, 1 ♂ 6 mm.

Stat. 102, 1 juv. 3 mm.

Stat. 125, 2 ♀ 5 and 7 mm, 1 ♂ 7 mm.

Distrib.: Atlantic, Mediterranean.

23. *Tritaeta gibbosa* Bate * (Ch. 5)

Stat. 28, 1 ♂ 4 mm.

Stat. 119, 1 ♂ 4·5 mm, 1 juv. 2 mm.

Distrib.: Atlantic, Mediterranean.

24. *Orchestia montagui* Andouin * (Ch. 5)

Pharo, many adult ♂ and ♀ with empty broodpouches, 17 mm.

Distrib.: Mediterranean.

25. *Hyale prevosti.* (M. Edwards) * (Ch. 5).

1830 *Amphithoe prevosti* M. Edw. Ann. Soc. nat. Vol. 20, p. 378.
1835 ,. ,, M. Edw. Ann. Soc. nat. Ser. 2, Vol. 3, pl. 14, fig. 11.
1840 ,, ,, M. Edw. Hist. nat. Crust. Vol. 3, p. 36.
1893 *Hyale prevosti* part. Della Valle, Fauna Golf Neapel, 20 monogr. p. 519. pl. 16, fig. 23–62.
1906 ,, *perieri* Stebbing. Tierreich Lfg. 21, p. 570 (references).
1911 ,, *prevosti* Chevreux. Mem. Soc. Zool. France, Vol. 23, p. 235.
1925 ,, *perieri* Chevreux et Fage. Faune France. Vol. 9. p. 284.
Nec 1929 *Hyale prevosti* Stephensen. Fauna Nord und Ostsee, Amphipoda X, f, p. 149.

Sidi Bischr, 1 ♂ 9 mm.

East Harbour, 1 ♀ 7 mm, 1 ♂ 10 mm.

?—Alexandria, 1 ♀ 10 mm.

St. 48, 1 ♀ with empty broodpouch 8 mm.

Stat. 54, 1 ♀ 8 mm.

Stat. 74, 1 ♀ 7·5 mm.

Stat. 54 and 74 with 23 and 55 fathoms are very unusual localities for this otherwise littoral species. Though we have to do in both cases with ♀ —wherefore the determination is more difficult — the specimens agree perfectly with the littoral material.

The species, of which I also have many specimens from Naples agrees with the description given by MILNE-EDWARDS of his specimens from Naples, but it does not correspond with the figures of *H. nilssoni*, though STEBBING identifies the two species in the "Tierreich." CHEVREUX (1911, p. 234) has already refuted this supposition. In 1925, he abolished *H. prevosti* in favour of *H. perieri* Lucas, which had been established later, without giving a reason for doing so. STEBBING (1906) and STEPHENSEN (1929) identify *H. nilssoni* with *H. prevosti*. I must differ from both.

Distrib.: Atlantic, Mediterranean.

26. *Hyale schmidti* (Heller) * (Ch. 5)

Sidi Bischr, many specimens, ♀ ovig. 3·5–4·5 mm, ♂ up to 5 mm.

Pok, 1 ♀ 4 mm, 1 ♂ 5·5 mm.

Stat. 41, many specimens, ♀ ovig. 4–4·5 mm, ♂ up to 6 mm.

Stat. 82, 2 ♀ 4 and 5 mm, several ♂ up to 6·5 mm.

Distrib.: Atlantic, Mediterranean.

27. ? *Microdeutopus damnoniensis* (Bate) * (Ch. 5)

Stat. 24, 4 spec., 2·5–4·5 mm.

I refer the much damaged specimens to the above species because one ♀ has an accessory flagellum with two segments.

Distrib.: Atlantic, Mediterranean.

28. *Microdeutopus gryllotalpa* Costa * (Ch. 5)

Stat. 58, 1 ♂ 4 mm, 1 ♀ with empty broodpouch 6·5 mm.

Distrib. : Atlantic, Mediterranean.

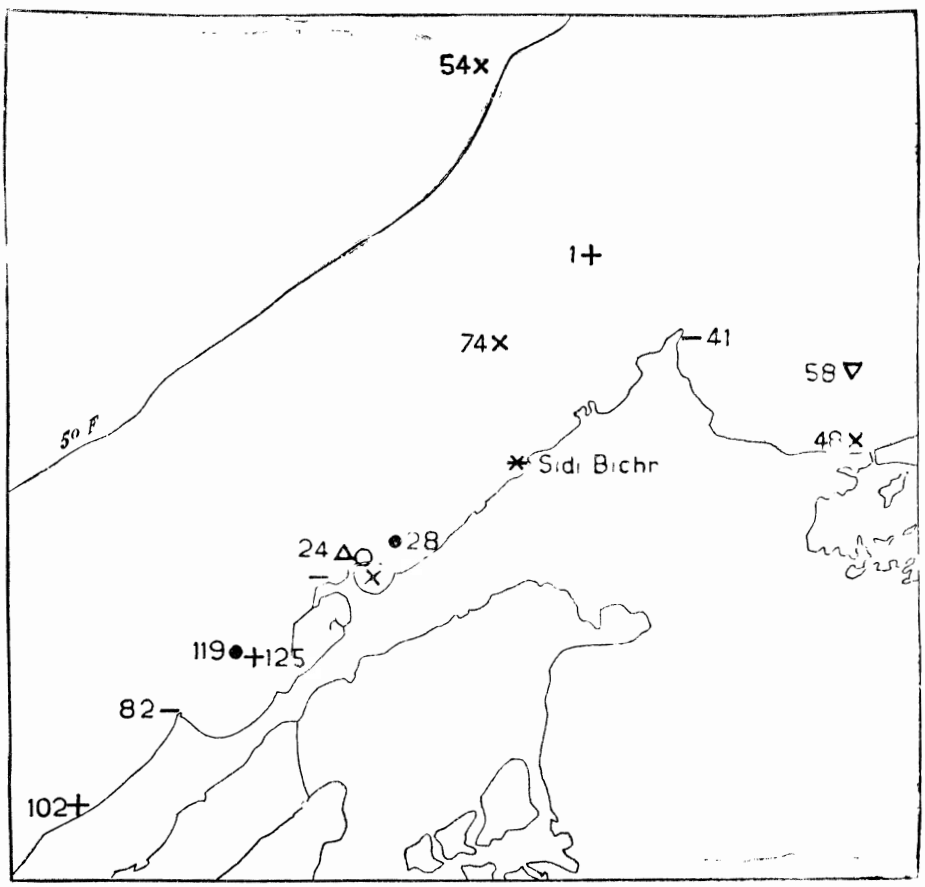

CHART 5.

\+ *Dexamine spinosa* (Mont.).

● *Tritaeta gibbosa* Bate.

◌ *Orchestia montagui* Audouin.

× *Hyale prevosti* (M. Edwards).

— *Hyale schmidti* (Heller).

△ ? *Microdeutopus damnoniensis* (Bate).

▽ *Microdeutopus gryllotalpa* Costa.

29. *Leptocheirus bispinosus* Norman* (Ch. 6)

Stat. 7, 1 juv. 4 mm.

Stat. 28, 5 ♀ ovig. 6–7 mm.

Stat. 50, 1 ♀ 6·5 mm.

Distrib. : Atlantic, Mediterranean.

30. *Leptocheirus guttatus* (Grube) * (Ch. 6)

Stat. 28, 1 spec. 3 mm.

Stat. 50, 1 spec. 4 mm.

Distrib. : Mediterranean.

31. *Leptocheirus pectinatus* Norman * (Ch. 6)

Stat. 114, 1 spec. 4 mm.

Distrib. : Atlantic Mediterranean.

32. *Amphithoe ramondi* Audouin* (Ch. 6)

Sidi Bischr, many specimens 3–8 mm, (♀ ovig. 7 mm).

East Port, 1 ♀ with empty broodpouch 7 mm.

Po, 1 ♂ 11 mm.

Pok, 4 spec. 5– 1·5 mm (♀ ovig. 8 mm).

Stat. 41, 3♂ 6–10 mm.

Stat. 42, 1 ♂ juv. 7 mm.

Distrib. : Atlantic, Mediterranean, Indo-Pacific.

33. *Pleonexes gammaroides* Bate* (Ch. 6)

Po, 1 juv., 2 ♀ ovig. 3 and 3·5 mm.

Stat. 42, 1 ♀ with empty broodpouch 4,5 mm.

Distrib. : Atlantic, Mediterranean.

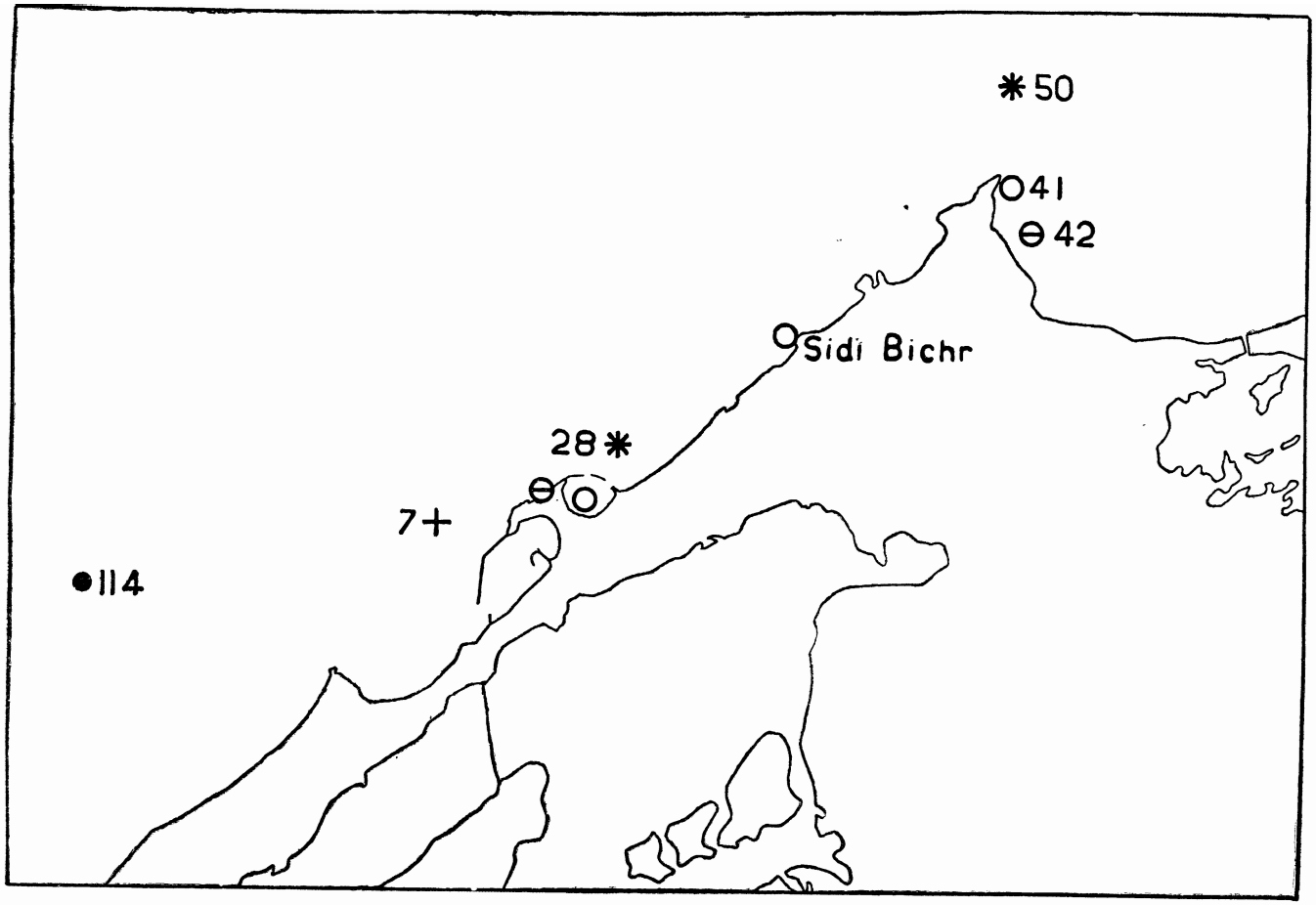

CHART 6.

+ *Leptocheirus bispinosus* Norman.
Amphithoe ramondi Audouin.

× *Leptocheirus guttatus* (Grube).
— *Pleonexes gammaroides* Bate.

● *Leptocheirus pectinatus* Norman.

34. *Jassa falcata* (Mont.) * (Ch. 7)

Sidi Bischr, several spec. 2–3 mm (♀ ovig. 3 mm).

East Harbour, 2 ♀ 3 and 4·5 mm.

Pok, 1 ♀ 3 mm.

Stat. 41, 4 ♀ 3·5 – 4 mm (♀ ovig. 4 mm), 5 ♂ 4–4·5 mm.

Distrib. : cosmopolitan.

35. *Ericthonius brasiliensis* (Dana) * (Ch. 7)

East Harbour, 3 ♀ ovig. 6 mm.

West Harbour, 5 ♀ ovig. 6–7 mm.

Distrib. : Warm and temperate oceans.

Ericthonius spec. (Ch. 7)

Stat. 5, 2 ♀ ovig. 3 and 4·5 mm. much damaged.

East Harbour, 1 ♀ ovig. 3 mm.

36. *Corophium volutator* (Pallas) (Ch. 7)

Lake Maryût, 3 ♀ ovig. 6 and 6·5 mm.

Edku bridge, 3 juv., 3 ♀, 2–3·5 mm, 1 ♀ ovig. 6mm, 3 ♂ 3–4mm.

Stat. 48, several juv., ♂ and ♀ ovig. up to 6 mm.

Stat. 49, 3 ♂ 5–6·5 mm, 1 ♀ ovig. 7·5 mm.

Distrib. : Brackish water, Atlantic, Mediterranean.

37. *Corophium acherusicum* Costa * (Ch. 8)

East Harbour, 3 ♀ 2·5 mm, 1 ♀ ovig. 3 mm.

West Harbour, Arsenal Basin, 4 juv. and ♀ 2·5–3·5 mm, 3 ♀ ovig. 3–4·5 mm, 2 ♂ 2·5 mm.

Stat. 34, 1 ♀ 2·5 mm, 4 ♀ ovig. 3–4 mm, 1 ♂ 2·5 mm.

Distrib. : Atlantic, Mediterranean.

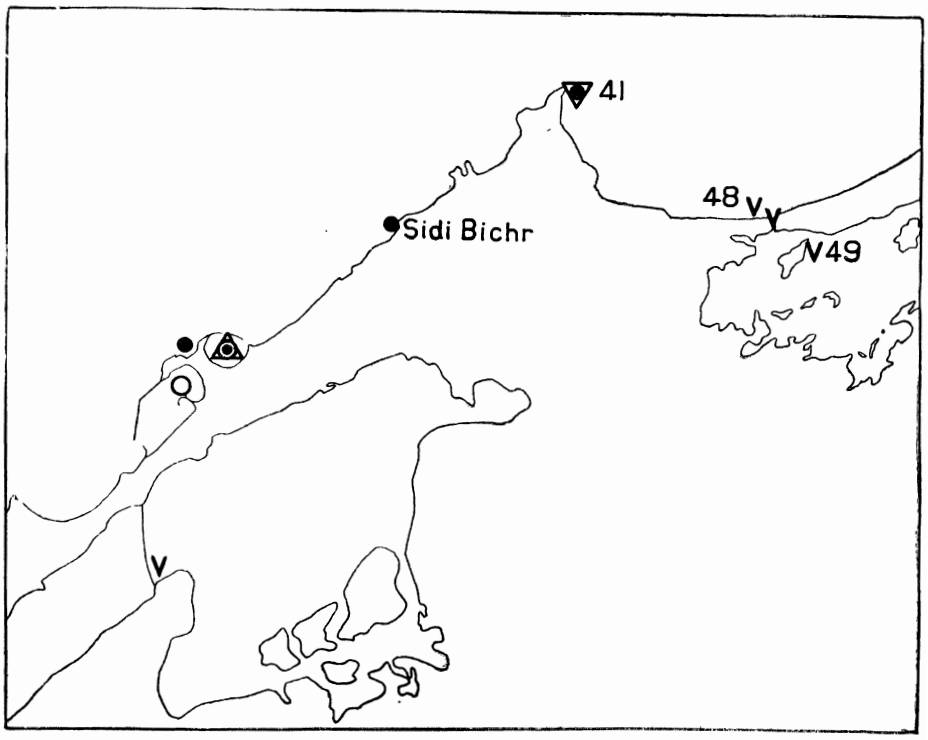

Chart 7.

● *Iassa falcata* (Mont.).

◌ *Ericthonius brasiliensis* (Dana).

△ *Ericthonius* sp.

V *Corophium volutator* (Pallas).

▽ *Pseudoprotella phasma* (Mont.).

▽ *Caprella pennantis* Leach *f. typica.*

▽ *Caprella liparotensis* Haller.

38. *Corophium acutum* Chevreux * (Ch. 8)

Sidi Bischr, 1 ♀ ovig. 2·5 mm.

East Harbour 2 ♀ 2–2·5 mm, 1 ♂ 2 mm.

Stat. 5, 1 ♂ 2 mm.

Stat. 125, several ♀ ovig. 2–2·5 mm, 4 ♂ 2 mm.

Distrib. : Atlantic, Mediterranean.

39. *Corophium bonelli* (M.-Edw.) G.O. Sars (Ch. 8)

Stat. 34, 2 juv., 3 ♀ ovig. 3–3·5 mm, 1 ♂ 3 mm.

While according to former records (STEPHENSEN 1924, p. 78, CHEVREUX and FAGE 1925, p. 369, STEPHENSEN 1929, p. 169) it seemed that *C. bonelli* goes on the European coasts only as far southward as the Channel, and then is replaced by *C. acherusicum*, BRIAN proved that the species lives in great abundance in the lagoons of Venice and so reaches the Mediterranean, which is confirmed by its presence near Alexandria. BRIAN found in the specimens from Venice a proportion in the number of ♂ : ♀ = 1 : 3·3. STEPHENSEN informed him that he had found in the material from Denmark, Norway and the Faroes only 1 ♂ to 100 or 1000 ♀♀. BRIAN therefore supposes spanandry, that is extermination of the ♂♂ in the north and concludes from this supposition, that the species reproduces parthenogenetically in the northern seas. Upon this I revised my material from the Bay of Kiel. The samples contained:

(*a*) 6 ♀, 2 ♂ = 33 per cent ♂
(*b*) 7 ♀, 3 ♂ = 43 per cent ♂
(*c*) 5 ♀, 6 ♂ =120 per cent ♂
(*d*) 9 ♀, 4 ♂ = 44 per cent ♂
(*e*) 6 ♀, 3 ♂ = 50 per cent ♂
(*f*) 34 ♀, 11 ♂ = 32 per cent ♂
(*g*) 5 ♀, 0 ♂ = 0 per cent ♂
(*h*) 4 ♀, 3 ♂ = 75 per cent ♂

In these hauls which had been taken near the Danish waters the ♂♂ are usually in the minority but not rarer than in the lagoons of Venice, which is not compatible with spanandry. Perhaps STEPHENSEN's results are due to different habits of the ♂♂.

Distrib.: Atlantic Mediterranean.

40. *Podocerus variegatus* Leach * (Ch. 8)

East Harbour, 2♀ ovig. 3·5 mm, 3 ♂ 4–4·5 mm.

Distrib.: Atlantic, Mediterranean.

Suborder Caprellidea

41. *Pseudoprotella phasma* (Mont.) f. typica (Ch. 7)

Stat. 41, 1 ♂ 6·5 mm.

Distrib. : Atlantic, Mediterranean.

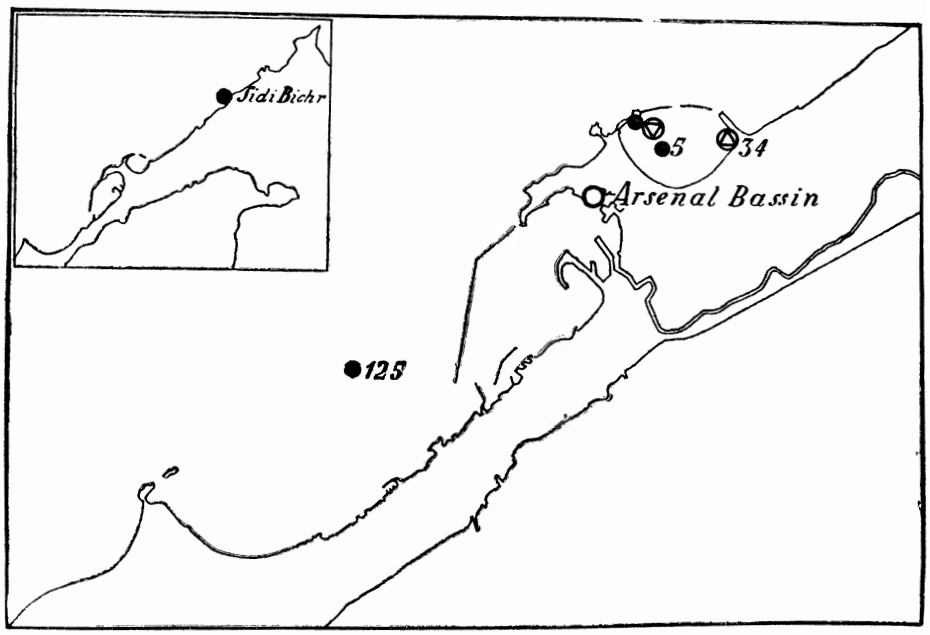

Chart 8.

○ *Corophium acherusicum* Costa.
● *Corophium acutum* Chevreux.
△ *Corophium bonelli* (M. Edw.).
▽ *Podocerus variegatus* Leach.

42. *Caprella pennantis* Leach f. typica (Ch. 7)

Stat. 41, several ♀ ovig. up to 6·5 mm, 2 ♂ 7 mm.

Distrib. : Atlantic, Mediterranean.

43. *Caprella liparotensis* Haller (Ch. 7)

Stat. 41, several ♀ ovig., 6 ♂ 6–7 mm.

Distrib. : Mediterranean.

General remarks

CHEVREUX has collected 129 marine species of Gammaridae on the coast of Algeria and Tunisia, not including the terrestrial forms which STEUER has neglected, as he only took one terrestrial species, *Orchestia montagui*. CHEVREUX does not cite any Caprellidae. One might conclude from these numbers that the sea round Alexandria is exceedingly poor in species. This is however a wrong conclusion, as CHEVREUX's amphipods have been taken on the coasts of two countries in different habitats in the course of two years and are therefore not comparable with STEUER's hauls. DELLA VALLE notes for the Gulf of Naples 96 species, these are almost two and a half times as many as Steuer collected at Alexandria. But besides the unusual richness of animal life in the Gulf of Naples the material is the result of intense fishing during a long period and in a large area. The same result we find in the marine Gammaridae of Plymouth which amounted in the course of the years to 106 species. Sokolowsky estimates the number of amphipods from Heligoland at 44, a number which agrees well with the Alexandrian results. The fauna of the Bay of Kiel with its 25 marine species is surely a poor one if one takes into consideration the largeness of the bay and the thorough way in which it has been investigated. The Cambridge Expedition noted 16 species while collecting for a short time near Port Said. All this shows that on the coast of Alexandria the number of species is not a large one but also not an unusually small one. The number of individuals and their size however are small. 10 species have been found once only. One can imagine how easily one or the other species may have escaped the collector with so thin a population. The more numerous species belong either to the inhabitants of mud and sand of the open sea like the Ampeliscidae or they live in shallow water between sea-weed and algae. On rocky bottoms we chiefly find the species of *Maera* and *Elasmopus*, in the mud of the coast the genus *Corophium*. 31 of the marine species of Alexandria have also been found off Algeria and Tunisia.

Ampelisca unidentata n. sp. *Bathyporeia guilliamsoniana*, *Leucothoe lilljeborgi*, *Stenothoe gallensis* and *Corophium bonelli* are missing in Chevreux's list. *B. guilliamsoniana* hides itself in the sand and so can easily escape the investigator's net. *L. lilljeborgi* always appears in single specimens so that it is a chance to find it, if fishing is not done very intensely. Even at the 25 stations of the Oslofjord, where BROCH fished, there were only two stations with one specimen of *L. lilljeborgi*. It is not uninteresting to know that these two Scandinavian stations at a depth of 60 fathoms furnished *Harpinia pectinata* and

Eriopisa elongata beside *L. lilljeborgi, viz.* three species which also live close together near the 50 fathoms line on the mud off Alexandria. *Stenothoe gallensis* may be, as mentioned above, an immigrant from the Indian Sea : the same is the case with *Elasmopus pectenicrus*. With these2 species the number of probable intruders through the Suez Canal is exhausted. On the distribution of *Corophium bonelli* I have given my opinion in the special part. It is striking that *Gammarus locusta*, an eurythermal and euryhaline species which is common on the whole Atlantic coast of Europe as well as in the Mediterranean, is missing. It seems to be replaced at Alexandria by *Hyale schmidti*, the only marine Amphipod appearing in great quantities between the algae.

The size of all amphipods of our district is small. It is less than 12 mm. Lengths of 2·5 to 6·5 mm are common. This fact proves right not only for the marine fauna —only the terrestrial *Orchestia montagui* has a length of 17 mm— but also for the 3 brackish forms *Corophium volutator, Gammarus foxi* and *Gammarus aequicauda*. The two species of *Gammarus* are limited to the lakes themselves, while *C. volutator*, the amphipod of our shallow waters and muddy grounds prefers the communication of Lake Edku with the sea. *Gammarus* above all is so numerous that it must be of great importance as food for fishes. CHEVREUX also collected *C. volutator* in brackish water of Tunisia and Algeria. *G. foxi* is very likely included in his *G. pungens*, a widely distributed Mediterranean form of brackish waters. *G. aequicauda* is, however, not to be found in his material.

Resuming we may say : the marine amphipods from Alexandria do not differ essentially from those of the western coast of North Africa, if we consider the smallness of the area. An influence of the Nile water is not observable. Two species may be immigrants from the Indian Ocean, but their systematic position has been cleared but lately and so they are not very demonstrative.

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