

II — Systematic accounts

The taxonomic arrangement for the Bacillariophyceae and the Flagellates, is that of HUSTEDT [1927-1959; 1959-1962] and LEBOUR [1925; 1930] except that forms of *Amphora* and *Pleurosigma* are tabulated according to PERAGALLO [1897-1908; 1880-1891]. The classification adopted for the crustacea is by G. O. SARS. He is much the simplest, in addition that it furnishes a place for every valid genus.

The appendages of the specimens are dessected and mounted for accurate determination of the species. Also dimensions refer only to the specimens actually measured in carrying out this work.

1. — *Flagellates*

- Dinophysis tripos* Gouret. LEBOUR [1925], p. 72, Fig. 22.
Dinophysis caudata Kent. LEBOUR [1925], p. 82, Fig. 21 c.
Peridinium cerasus Pauls. LEBOUR [1925], p. 130, Pl. 27, Fig. 1.
Peridinium cinctum Ehr. SCHILLER [1937], p. 152.
Ceratium furca (Ehr.) Claparede and Lach. LEBOUR [1925], p. 145, Pl. 30, Fig. 3.
Ceratium massilense (Gouret and Karsten) Jørg. JØRGENSEN [1920], p. 85, Fig. 78.
Ceratium fusus (Ehr.) Dujard. LEBOUR [1925], p. 146, Pl. 31, Fig. 1.
Ceratium tripos (Muller) Nitzsch. LEBOUR [1925], p. 148, Pl. 32, Fig. a, b.
Gymnodinium lohmanni Paulsen. PAULSEN [1908], pp. 99-100.

2. — *Bacillariophyceae*

- Melosira crucipunctata* Bach. BACHMANN [1936], p. 2, Figs. 1,2,3.
Melosira jurgensii Ag. *Hustedt*, Kieselalg. I, p. 238, Fig. 89.
Podosira montagnei Kütz. *Hustedt*, Kieselalg. I, p. 281, Fig. 122.
Cyclotella meneghiniana Kütz. *Hustedt*, Kieselalg. I, p. 341, Fig. 174.
Coscinodiscus excentricus Ehr. *Hustedt*, Kieselalg. I, p. 388, Fig. 201.
Coscinodiscus granii Gouch. LEBOUR [1930], p. 44, Fig. 20.
Coscinodiscus gigas Ehr. PERAGALLO [1897-1908], p. 188, Fig. 3.
Actinophyechus vulgaris Schum. PERAGALLO [1897-1908], p. 410, pl. 3, Figs. 2, 3.
Skeletonema costatum (Grev.) Cleve. HUSTEDT, Kieselalg. I, p. 311, Fig. 149.
Guinardia flaccida (Castr.) Perag. PERAGALLO [1897-1908], p. 559, Pl. 122, Figs. 1-3.
Dactyliosolen mediterraneus Per. PERAGALLO [1897-1908], p. 456, Pl. 122, Fig. 6.
Rhizosolenia hebetata (Bail.) Gran. f. *semispina* (Hansen) Gran. HUSTEDT, Kieselalg. I, p. 592, Fig. 338
Rhizosolenia alata Brightw. PERAGALLO [1897-1908], p. 466, pl. 124, Fig. 7.
Rhizosolenia shrubsolei Cleve. PERAGALLO [1897-1908], p. 466, Pl. 124, Fig. 5.
Rhizosolenia stotterfothii Per. PERAGALLO [1897-1908], p. 460, Pl. 122, Fig. 7.
Rhizosolenia calcar-avis Schultz. HUSTEDT, Kieselalg. I, p. 592, Fig. 339.
Rhizosolenia fragillima (Bergon) Gran. LEBOUR [1930], p. 92, Fig. 65.
Bacteriastrum hyalinum Lauder. HUSTEDT, Kieselalg. I, p. 615, Fig. 345.
Bacteriastrum delicatulum Cleve. PERAGALLO [1897-1908], Pl. 136, Fig. 8.
Chaetoceros affinis Lauder. HUSTEDT, Kieselalg. I, p. 695, Fig. 396.
Chaetoceros didymus Ehr. HUSTEDT, Kieselalg. I, p. 688, Fig. 390.
Chaetoceros curvisetus Cleve, PERAGALLO [1897-1908], p. 479, Pl. 133, Fig. 5.
Chaetoceros decipiens Cleve. PERAGALLO [1897-1908], p. 485, Pl. 130, Fig. 4-8.
Chaetoceros lauderi Ralfs. PERAGALLO [1897-1908], p. 481, Pl. 132, Fig. 3.
Climacodium biconcavum Cleve. LEBOUR [1930], p. 189, Fig. 149 b.
Hemiaulus heibergii Cleve. PERAGALLO [1897-1908], p. 392, Pl. 94, Figs. 3, 5.
Lithodesmium undulatum Ehr. HUSTEDT, Kieselalg. I, p. 789, Fig. 461.
Ditylum brightwellii (West) Grun. HUSTEDT, Kieselalg. I, p. 784, Fig. 459.
Ditylum intricatum (West) Brun. PERAGALLO [1897-1907], p. 395, Pl. 96, Fig. 415.
Triceratium (Biddulphia) alternans (Bail) Grun ex. V.H. HUSTEDT, Kieselalg. I, p. 825, Fig. 488.
Biddulphia mobiliensis Bail. HUSTEDT, Kieselalg. I, p. 840, Fig. 495; LEBOUR [1930], p. 174, Fig. 134.
Biddulphia aurita (Lyngb.) Brébisson and Godey. HUSTEDT, Kieselalg. I. p. 846, Fig. 501.
Biddulphia obtusa (Kütz.) Ralfs. BOYER [1926-1927], pl. 127, p. 133; Lebour (1930), p. 179, Fig. 139.
Biddulphia favus (Ehr.) V.H. LEBOUR [1930], p. 180, Fig. 140.
Biddulphia vesiculosa (Ag.) Boyer, LEBOUR [1930], p. 181.
Asterionella japonica Cleve and Müller. HUSTEDT, Kieselalg. 2, p. 254, Fig. 734.

- Rhabdonema adriaticum* Kütz. Hustedt, Kieselalg. 2, p. 23, Fig. 522.
Climacosphenia elongata Bail. PERAGALLO [1897-1908], p. 352, pl. 86, Figs. 1-4.
Grammatophora marina (Lyngb.) Kütz. HUSTEDT, Kieselalg. 2, p. 43, Fig. 569.
Grammatophora angulosa (Ehr.) HUSTEDT, Kieselalg. 2, p. 39, Fig. 564.
Licmophora gracilis (Ehr.) Grun. var. *anglica* (Kütz.) Per. HUSTEDT, Kieselalg. 2, p. 60, Fig. 583.
Synedra ulna (Nitzsch.) Ehr. HUSTEDT, Kieselalg. 2, p. 195, Fig. 691 a.
Synedra tabulata (Ag.) Kütz. HUSTEDT, Kieselalg. 2, p. 218, Fig. 710 a-d.
Thalassionema nitzschiodes Grun. HUSTEDT, Kieselalg. 2, p. 244, Fig. 725.
Cocconeis placentula Ehr. var. *euglypta* (Ehr.) Cleve. HUSTEDT, Kieselalg. 2, p. 349, Fig. 802 c.
Mastogloia exigua Lewis. HUSTEDT, Kieselalg. 2, p. 569, Fig. 1003.
Mastogloia pumila (Grun.) Cleve. HUSTEDT, Kieselalg. 2, p. 553, Fig. 983.
Diploneis pseudovalis Hustedt. HUSTEDT, Kieselal. 2, p. 668, Fig. 1063 c.
Diploneis aestuarii Hustedt. HUSTEDT [1939], p. 612, Figs. 41-42.
Navicula humerosa Bréb. var. *minor* Heiden. HEIDEN in *A. Sch.* Atlas, pl. 243, Fig. 7.
Navicula kyra Ehr. var. *atlantica* Schum. CLEVE [1895], p. 63; PERAGALLO [1897-1908], p. 143, pl. 22, Fig. 14.
Navicula pygmala Kütz. HUSTEDT [1930], p. 312, Fig. 561.
Gyrosigma spencerii (W.Sm.) Cleve. HUSTEDT [1930], p. 225, Fig. 336.
Pleurosigma minutum Grun. PERAGALLO [1897-1908], p. 164, Pl. 33, Fig. 11.
Pleurosigma aestuarii (Bréb.) Sm. CLEVE [1894], p. 2; PERAGALLO (1897-1908), p. 164, Pl. 33, Fig. 9.
Amphiprora paludosa Sm. var. *duplex* Donk. PERAGALLO [1897-1908], p. 184, Pl. 38, Figs. 12-20.
Tropidoneis lepidoptera (Greg.) Cleve. CLEVE [1894], p. 25; PERAGALLO [1897-1908], p. 188, Pl. 39, Figs. 3,7.
Amphora ovalis Kütz. HUSTEDT [1930], p. 343, Fig. 628.
Amphora turgida Greg. GREGORY [1857], p. 510, Fig. 63; PERAGALLO [1897-1908], p. 231, Pl. 50, Fig. 33.
Amphora elegans Per. PERAGALLO (1897-1908), p. 223, Pl. 49, Fig. 29.
Amphora marina Sm. PERAGALLO [1897-1908], p. 200, Pl. 44, Figs. 15-17.
Nitzschia closterium (Ehr.) Sm. HUSTEDT [1930], p. 424, Fig. 822.
Nitzschia sigma (Kütz.) Sm. HUSTEDT [1930], p. 420, Fig. 813.
Nitzschia flexa Schum. HUSTEDT [1930], p. 420, Fig. 812.
Nitzschia longissima Bréb. PERAGALLO [1897-1908], p. 293, Pl. 74, Fig. 20.
Nitzschia seriata Cleve. PERAGALLO [1897-1908], p. 290, Pl. 74, Figs. 4, 6.
Nitzschia bilobata Sm. var. *minor* Grun. PERAGALLO [1897-1908], p. 273, Pl. 70, Fig. 27.
Surinella gemma Ehr. HEURCK [1880-1885], Pl. 74, Figs. 1-3; PERAGALLO [1897-1908], p. 254, Pl. 68, Fig. 4.
Campylodiscus parvulus Bréb. PERAGALLO [1897-1908], p. 242, Pl. 54, Fig. 9.

3. — Copepoda

- Calanus minor* Claus. GIESBRECHT and SCHMEIL [1898], *Das Tierreich*, Lief. 6, Copepoda, p. 15.
Eucalanus attenuatus Dana. GIESBRECHT and SCHMEIL [1898], *Das Tierreich*, Lief. 6, Copepoda, p. 20.
Paracalanus parvus Claus. SARS [1901], *Crustacea of Norway*, Vol. 4, p. 17, Pls. 8, 9.
Calocalanus parvo Dana. GIESBRECHT [1892], *Fauna und Flora des Golfes von Neapel*, Vol. 19, p. 185, Pls. 1,4,9,36.
Calocalanus plumosus Claus. GIESBRECHT and SCHMEIL [1898], *Das Tierreich* Lief 6, Copepoda, p. 26.
Clausocalanus arcuicornis Dana. GIESBRECHT and SCHMEIL [1898], *Das Tierreich*, Lief. 6, Copepoda, p. 27.
Pseudocalanus minutus Krøyer. KRØYER [1842], Vol. 3, Pl. 4, Copepoda I, p. 57, pl. I, Fig. 8; Wilson (1932), p. 43, Fig. 25.
Euchaeta marina Prestandrea. GIESBRECHT [1892], *Fauna und Flora des Golfes von Neapel*, Vol. 19, p. 245, Pls. 1, 15, 16.
Centropages typicus Krøyer. SARS [1903], *Crustacea of Norway*, Vol. 4, p. 75, Pls. 49, 51.
Temora stylifera Dana. GIESBRECHT [1892], *Fauna und Flora des Golfes von Neapel*, Vol. 19, p. 328, Pls. 5, 17, 38.
Labidocera acurifrons Dana. GIESBRECHT [1892], *Fauna und Flora des Golfes von Neapel*, Vol. 19, p. 445, Pls: 33-41.

- Pontellina plumata* Dana. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 497, Pls. 25-40.
- Acartia latisetosa* Kricz. SARS [1903], Crustacea of Norway, Vol. 4, p. 150, Pl. 99.
- Acartia clausii* Giesbrecht. SARS [1903], Crustacea of Norway, Vol. 150, Pl. 101.
- Acartia longiremis* Lilljeborg, LILLJEBORG [1853], De Crustaceis ex-ordinis; cladocera, Ostracoda et Copepoda, in Scania occurrentibus, p. 181, Pl. 24, Figs. 1-15; SARS [1903], Crustacea of Norway, Vol. 4, p. 149, Pls. 99, 100.
- Longipedia coronata* Claus. SARS [1903], Crustacea of Norway, Vol. 5, p. 10, Pls. 3, 4.
- Microsetella norvegica* Boeck. SARS [1904], Crustacea of Norway, Vol. 5, p. 44, Pl. 24.
- Harpacticus gracilis* Claus. SARS [1904], Crustacea of Norway; Vol. 5, p. 52, Pl. 30, Fig. 1.
- Microthalestris forficula* Claus. SARS [1905], Crustacea of Norway, Vol. 5, p. 123, Pl. 76.
- Macrosetella gracilis* Dana. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 559, pls. 1, 45.
- Oithona plumifera* Baird. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 537, Pls. 3, 34, 44.
- Oithona similis* Claus. SARS [1913], Crustacea of Norway, Vol. 6, p. 8, pl. 3.
- Oithonina nana* Giesbrecht. SARS [1913], Crustacea of Norway, Vol. 6, p. 5.
- Oncaea conifera* Giesbrecht. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 591, Pls. 2, 47.
- Oncaea minuta* Giesbrecht. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 591, Pl. 47.
- Corcaeus obtusus* Dana. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 659, Pls. 4, 51.
- Corycaeus danae* Giesbrecht, GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 660, Pl. 51.
- Corycaeus ovalis* Claus. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 629, Pls 49, 51.
- Sapphirina angusta* Dana. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 619, Pls 52-54.
- Sapphirina gemma* Dana. GIESBRECHT [1892], Fauna und Flora des Golfes von Neapel, Vol. 19, p. 618, Pls 3, 52, 54.
- Capilia mirabilis* Dana. BRADY [1883], Voyage of H.M.S. Challenger, Vol. 8, Pt. 23, Copepoda, p. 117, Pl. 53.

III. — Summary and conclusions

The species composition of the plankton along the Egyptian Mediterranean coast has been reported, mainly the free-swimming forms. The data are based upon a series of samples collected at intervals during the years 1964-1965.

The taxonomic analysis is noted. The remarkable feature of the present investigation is the large number of species. Altogether 109 species belonging to 65 genera are listed. However, the diatoms constitute quite the largest portion among the total crop both in numbers of species and individuals. Furthermore, the *Dinophyceae*, particularly *Peridinium* and *Dinophysis* are also of importance. The following are the principal genera of the Bacillariophyceae : *Chaetoceros*; *Biddulphia*; *Rhizosolenia*; *Nitzschia*, *Melosira*, *Rhabdonema*; *Amphora*; *Cyclotella*. These are roughly arranged in order of their importance.

Thirty-one species of Copepoda representing twenty-one families have been listed. *Paracalanus*; *Diaptomus*; *Temora*; *Longipedia*; *Oithonina*; *Mesocyclops*; *Oncaea*; *Corycaeus*; *Sapphirina* are the chief components of the plankton. The Cladocerans are not dominated along the coast.

On the average, the Mediterranean shore is comparatively very rich and more productive, on account of its eutrophication through the fresh water supplies. The relative poverty of the Cladocerans in the Mediterranean, is also evident. The diatom group is the most important and widespread. Small sizes of the specimens are a striking character of the fauna and the flora. Quantitatively, the population is evidently influenced by the topographic and the hydrographic conditions prevailing on the spot.

In conclusion, the local habitats comprise a rich stock of plankton recruited from various localities. These forms can be classified into three distinct categories as follows :

1. Freshwater forms which are abundant in the Nile, and are rather less common along the Mediterranean [SALAH & THAMAS, 1970].
2. Brackish water forms with a wide range of distribution. These are very abundant and most common.
3. Marine forms which are capable of surviving a certain amount of changes in the external medium.

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