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CHAPTER 5

SPECIES COMPOSITION, DISTRIBUTION AND ABUNDANCE OF ALGAE AND SEAGRASSES OF THE SEYCHELLES ISLANDS

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SPECIES COMPOSITION, DISTRIBUTION AND ABUNDANCE OF ALGAE AND SEAGRASSES OF THE SEYCHELLES ISLANDS

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INTRODUCTION

Marine algae and seagrasses of the Republic of the Seychelles remain poorly studied. Macrophytic algae reported for the area (about 120 species) were collected between 1899-1990 by J. Stanley Gardiner during the *Sealark* Expedition to the Indian Ocean (Gepp and Gepp 1909; 1911, Weber van Bosse 1913a, 1913b). Aleem (1984) reported 9 species of seagrasses and 22 algal species for the macrophyte communities of Mahé, Latam, Aldabra, Comoro, Farquhar and Amirantes Islands. Subsequently, 5 seagrasses and 33 algal species were recorded (Titlyanova and Butorin 1987) for Mahé and Cöetivy Islands, half of these representing new records. There are no data on either algae or seagrasses for 12 of the Seychelles island groups. The present study of these island groups focused on: (1) macrophytic species composition; (2) distribution of algae and seagrasses at different depths for typical ecotopes; and (3) the structure of benthic plant communities (phytocoenoses), including determination of biomass for macroalgae and seagrasses.

METHODS AND MATERIALS

Studies were conducted at Cöetivy Atoll, Desroches, African Banks, Providence, Farquhar Atoll, Aldabra Atoll, St. Joseph Atoll, Cosmoledo Atoll, Astove Atoll, Mahé, Praslin and La Digue Islands. Quantitative and qualitative samples were collected using transects and square quadrats from the upper intertidal zone to a depth of 30-50 m, using a combination of snorkle and SCUBA diving techniques. In each intertidal horizon, four 25 x 25 cm quadrats were selected and sampled in representative habitats with vegetation coverage averaging 10-15%. In the subtidal zone, one 50 x 50 cm quadrat was harvested at each station.

A total of 687 samples (479 quantitative harvest samples) were taken at 257 stations. Vegetation was described for 28 intertidal and 37 subtidal transects. About 4000 plant specimens were collected and duplicates are deposited in the herbaria of all three authors' institutions. Altogether, 327 algal species and 8 seagrass species were documented for the 12 island systems (Table 1).

Intertidal zones were surveyed during periods of low water at which time type of substratum, bottom relief, vegetation coverage and the width of vegetation belts were determined. Laboratory

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processing included determination of the population density (individuals·m^{-2}), wet biomass ($g \cdot m^{-2}$), plant height and species composition. Macroalgae were identified using the following works: Bφrgesen (1914, 1915, 1916, 1917, 1918, 1919, 1920, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1957), Cordero (1977), Colinvaux (1968), Dawson (1954), Durairatham (1961), Egerod (1975), Hartog (1970), Hillis (1959, 1980), Kraft (1986), Misra (1966), Olsen-Stojkovich (1985), Pham-Hoang Ho (1967, 1969), Tanaka and Pham-Hoang Ho (1962), Taylor (1960) and Valet (1969).

The structure of phytocoenosis (community associations) was analyzed with the use of the Shannon species diversity index (Wilhm 1968),

$$H = \frac{W \lg_w - {}^{s}\Sigma W_i \lg W_i}{W \lg_2}$$

where: H - species diversity of a sample; W_i - biomass of the i-th species sampled ($g \cdot m^{-2}$); W - total biomass of the sample ($g \cdot m^{-2}$) and s - number of species in the sample. At H = 0 - 0.8 the phytocoenosis structure was considered to be monodominant; at H = 0.9 - 1.5 - oligodominant and at H > 1.5 - polydominant.

STUDY AREAS

The Seychelles islands surveyed can be divided into three groups by their structure and the type of bottom vegetation. The first group includes: Cöetivy, Desroches, African Banks and Providence; the second: Farquhar, Aldabra, St. Joseph and D'Arros, Cosmoledo and Astove; and the third: Mahé, Praslin and La Digue. Cöetivy, Desroches, African Banks and Providence are calcareous and fringed with barrier reefs. Farquhar, Aldabra, St. Joseph and D'Arros, Cosmoledo and Astove are atolls with shallow sand lagoons and sand banks exposed at low waters. On their ocean sides, these atolls are fringed with a broad (250-1000 m) reef-flat, pre-slope platform and reef slope. The intertidal zone of these islands is mostly wide (100-1000 m), sloping and uniform in structure. The upper and the middle horizons of the intertidal zone consist of sand. The lower horizon is sandy with pits, or built of dead consolidated corals covered with sand. The subtidal zone has different relief and substrata: the upper reef edge is sandy. The reef edge is built of coral plates and blocks above a steep sandy slope covered with dead corals with live coral colonies. The upper intertidal horizon is usually devoid of vegetation; a wide belt of seagrasses spreads from the middle horizon of the intertidal zone down to depths of 15-20 m. Greater depths are occupied by *Halimeda* communities. Cöetivy is the most thoroughly studied island in the first group.

Mahé, Praslin and La Digue, the third group, are high granitic islands with numerous inlets and are fringed by narrow reefs. Vegetation of the carbonate islands (groups 1 and 2) is dominated by seagrasses, and red and green algae. While on these granitic islands, brown algae (Phaeophyta), mostly *Sargassum*, predominate in plant communities along with seagrasses.

RESULTS AND DISCUSSION

Cöetivy Island

The benthic vegetation was surveyed along nearly the entire coastline (Fig. 1) and showed uneven distributional patterns. At the northern point of the island, the intertidal zone is narrow (5-10 m in width), sandy and devoid of vegetation. Macrophytic growth begins at a depth of 2-3 m, a

distance of 100-150 m from the shoreline. The southernmost intertidal zone is broad (500-1000 m in width) with numerous intertidal pools at low waters. Along the eastern and western coasts, the intertidal zone does not exceed 500 m in width. Settlements of *Enteromorpha kylinii* sometimes occur on individual coral blocks in the upper intertidal horizon. The middle horizon is occupied by the seagrasses *Syringodium isoetifolium*, *Halodule uninervis* and *Thalassodendron ciliatum* (Fig. 2, Table 2) characterizing the major associations (or phytocoenoses, characterized by dominant species). The species composition of these associations is limited, including among the dominant species, *Jania adhaerens*, *Hypnea pannosa*, *Dictyosphaeria setchellii*, *Boodlea composita* and *Halimeda gracilis*.

The lower intertidal horizon is dominated by *Thalassodendron ciliatum*. *Halimeda gracilis*, *H. stuposa*, *H. micronesica*, *Dictyurus purpurascens* and *Laurencia* sp. are subdominants in all associations dominated by *T. ciliatum*. Dense mats of *Gelidiella acerosa*, *Laurencia parvipapillata*, *L. paniculata* and *Halimeda opuntia* develop at the stem bases and on the rhizomes of *T. ciliatum*, while the stems are populated by the algal epiphytes *Haloplegma duperreyi*, *Gelidiella myrioclada*, *Champia parvula*, *Ceramium fastigiatum*, *Lophosiphonia villum*, *Polysiphonia* sp. and *Centroceras apiculatum*. Among the other organisms noted were *Dictyosphaeria cavernosa*, *D. setchellii*, *Caulerpa sertularioides*, *Udotea argentea*, *U. orientalis*, *Laurencia obtusa*, *Dictyurus purpurascens*, *Jania ungulata* and *Valonia aegagropila*. Scattered individuals of *Lobophora variegata* and *Turbinaria ornata* occur on the reef edge.

Twelve associations were distinguished in the intertidal zone (Table 2), ranging in structure from mono- to oligo-dominant (i.e., H = 0 - 0.8 and 0.9 - 1.6, respectively) with well developed plant coverages ranging from 70-100%. In the sublittoral zone, associations of *Thalassodendron ciliatum* - *Halimeda* dominate the sandy reef slope among coral debris (Fig. 2). Biomass of these two dominant species contributes 80-100% to the association (Fig. 1), which includes almost all the species recorded for the lower intertidal horizon. In addition, *Rhipilia tomentosa*, *Heterosiphonia* sp., *Lophocladia trichoclados*, *Griffithsia subcylindrica*, *Chlorodesmis comosa*, *Kallymenia* sp., *Coelarthrum boergesenii*, *Tricleocarpa oblongata*, *Liagora divaricata* and *Botryocladia skottsbergii* were also found. The lower border of the association extends to a depth of 15-20 m with isolated specimens of *T. ciliatum* occuring to depths of 30-33 m. One of the most prominent species of subtidal coenoses is *Halimeda opuntia*. Off the southwestern border of the island, phytocoenoses of *Halimeda* appear at 1-m deep on the sand plateau and extend down to depths of 30-50 m and over vast areas. The biomass of *Halimeda* increases from 429 to 5078 $g \cdot m^{-2}$ at depths between 1-5 m (Table 2; Fig. 1; Stations 15-20). Species composition of the phytocoenosis is limited, with the associated species being *T. ciliatum*, *Lobophora variegata*, *Caulerpa cupressoides*, *Haloplegma duperreyi*, *Dictyurus purpurascens* and *Heterosiphonia* sp.

At depths of 30-50 m, dominants were *Avrainvillea amadelpha* f. *submersa*, *Halimeda copiosa*, *Caulerpa* sp., *Dasya* sp., *Struvea elegans*, *Antithamnion* sp., *Chrysymenia pyriformis*, *Peyssonnelia* sp. and *Anadyomene wrightii*. The associations are characterized by a monodominant structure with sparse and low-statured vegetation coverage (Table 2). The H index of species diversity ranges mainly from 0 to 0.7, but in some phytocoenoses it exceeds 1.0 (Table 2).

The distributional pattern of common species of algae and seagrasses around Cetivy is shown in Figure 3. The lower intertidal horizon and the upper sublittoral horizon down to a depth of 7-10 m (Fig. 4) show the greatest biomass of macrophytes (mean of 3096 ± 393 S.D. $g \cdot m^{-2}$2). Ranking second in biomass (1597 ± 272 $g \cdot m^{-2}$) are phytocoenoses at 10-20 m in depth along the eastern coast and in the lower intertidal zone of the southern end of the island. Closest to the shore, within the middle horizon of the intertidal zone, the mean biomass of macrophytes is 878 ± 306 $g \cdot m^{-2}$. The lowest biomass (557 ± 157 $g \cdot m^{-2}$) was found at greater depths. The total area of algal and seagrass growths around Coetivy Island is approximately 13,190 ha, with an estimated total standing stock of

196,316 t wet weight. On average, 1 ha supports 15 t phytomass.

Altogether, 113 plant species were found at Coetivy, 4 of which are seagrasses. The 109 algal species include 58 Rhodophyta, 46 Chlorophyta, 4 Phaeophyta and 1 Cyanophyta (Table 1).

Desroches Island

The marine benthic vegetation of the island was studied in considerable detail (Figs. 5-7). The upper intertidal zone is similar to that of Coetivy Island. An association of *Thalassia hemprichii* with *Potolithon gardineri* forms in the middle horizon. The phytocoenosis is oligodominant in structure, vegetation coverage averages 80-100%. Population density and biomass do not exceed 1536 individuals·m^{-2} and 2471 g·m^{-2}, respectively (Table 2). Among the associated species, *Udotea orientalis*, *Caulerpa cupressoides*, *C. serrulata*, *Dictyosphaeria cavernosa* and *Jania capillacea* are common. In the lower intertidal horizon, *Thalassodendron ciliatum* forms three associations (characterized by their dominant species): *Thalassodendron ciliatum* + *T. hemprichii* - *Halimeda micronesica*, *T. ciliatum* - *Halimeda opuntia* and *T. ciliatum* alone. Biomass of *T. ciliatum* accounts for 60-100% of the total biomass of the three phytocoenoses (Fig. 5). Population density and biomass are high, up to 2600 individuals·m^{-2} and 5095 g·m^{-2} (Table 2), respectively. The stalks of *Thalassodendron ciliatum* are densely overgrown with epiphytes. The most common associated species are *Laurencia parvipapillata*, *L. papillosa*, *Dasya mollis*, *Dictyurus purpurascens*, *Struvea anastomosans*, *Haloplegma duperreyi*, *Hypnea esperi*, *H. spinella*, *Gelidiella lubrica*, *G. myrioclada*, *Heterosiphonia crispella*, *Jania capillacea*, *J. ungulata*, *Dictyosphaeria cavernosa*, *D. verslyusii*, *Caulerpa serrulata*, *C. cupressoides*, *Valonia aegagropila*, *V. fastigiata* and *Halimeda stuposa*, with *Laurencia*, *Jania* and *Halimeda* forming mats.

In terms of depth of habitat, community structure, species composition and the main quantitative characteristics, subtidal associations of *Thalassodendron ciliatum-Halimeda* at Desroches Island do not differ appreciably from corresponding associations at Cöetivy Island (Table 2). In addition to species that were also common on Cöetivy Island, we found *Neomeris bilimbata*, *Caulerpa mexicana*, *Halymenia* sp., *Liagora pennata*, *Galaxaura marginata*, *Tricleocarpa oblongata*, *G. rudis*, *Haliptilon subulatum* and *Lomentaria mauritiana*. In the depth range between 15-20 and 35-38 m, a steep cliff partly fringing the island is covered with sparse algal growths. Below the cliff, a *Halimeda* phytocoenosis extends to a depth of 50 m (Table 2), with high species diversity of associated algae, most of them being common in the upper subtidal and lower intertidal zones. Typical of these deep waters were *Avrainvillea amadelpha* f. *submersa*, *Halimeda copiosa*, *H. tuna*, *Dudresnaya* sp., *Caloglossa* sp., *Hypoglossum* sp. and *Caulerpa mexicana*. Altogether, 132 plant species, including 3 seagrasses and 129 algal species (72 red algae, 50 green algae, 5 brown algae and 2 blue-green algae) were collected near Desroches Island. In general, the bottom vegetation of Desroches Island is characterized by relatively high quantitative indices (Fig. 8). The total area covered by benthic vegetation is about 711 ha and supports about 16,581 t wet plant biomass.

African Banks

The South Island's lower intertidal and upper subtidal zones (Figs. 9-11) are characterized by associations of *Thalassia hemprichii* + *Thalassodendron ciliatum* - *Microdictyon montagnei*. *Thalassodendron ciliatum* is responsible for 40-100% of the total biomass of all phytocoenoses (Fig. 9). In the subtidal zone, this association is replaced by the *T. ciliatum* association which extends along the slope of the reef down to a depth of 20-25 m. The population density and biomass in the *T. ciliatum* association is significantly lower than on Cetivy and Desroches Islands (Table 2). Common associated species were *Halimeda micronesica*, *H. stuposa*, *H. gracilis*, *H. macroloba*, *H. opuntia*,

Dictyosphaeria cavernosa, D. verluysii, Rhipilia tomentosa, Anadyomene plicata, Struvea anastomosans, Tricleocarpa oblongata, Haloplegma duperreyi and *Lobophora variegata.* The deep-water association of *Halimeda* sp. (25-37 m) is characterized by a rich species diversity of associated algae similar to that near Desroches Island. Most characteristic were *Halimeda stuposa, H. micronesica, Caulerpa cupressoides, Avrainvillea amadelpha* f. *submersa* and *Udotea orientalis.* Several species were found only at the 37 m depth (Station 200): *Halophila stipulacea, Caulerpa* sp., *Boergesenia forbesii, Boodleopsis pusilla, Anotrichium tenuis, Galaxaura rudis* and *Chrysymenia pyriformis. Tydemania gardineri, Halophila stipulacea* and *Anadyomene plicata* were found only near South Island. Altogether, 84 plant species were collected near South Island: 3 seagrasses and 81 algae (47 red algae, 31 green algae, 3 brown algae and 3 blue-green algae).

Providence Atoll

The interdidal zone of the southern coast of Cerf Island (Fig. 12, 13) is sandy, almost devoid of vegetation, with scattered coral debris covered by *Enteromorpha clathrata.* The distribution of plant communities in the subtidal zone was typical of the other islands of this group. At a depth of 20-23 m, the *Thalassodendron ciliatum* association is replaced by communities dominated by *Halimeda gracilis* extending the down to 32 m (Table 2). *Thalassodendron ciliatum* associates include *Microdictyon montagnei, Herposiphonia secunda* f. *tenella, Dictyurus purpurascens, Griffithsia subcylindrica* and *Cottoniella arcuata.* The *Halimeda* communities included *Halimeda micronesica, Microdictyon montagnei, Valonia fastigiata, Caulerpa brachypus, Tricleocarpa oblongata, Galaxaura rudis* and other minor species. Two seagrass species and 58 algal species (40 red algae, 16 green algae and 2 brown algae) were collected near Cerf Island.

The intertidal vegetation of islands of the first and second groups is similar in structure and distribution. The upper, and sometimes mid-tidal horizons, are devoid of plant coverage. The middle and lower intertidal horizons support associations of *Thalassia hemprichii* + *Thalassodendron ciliatum.* In the lower intertidal and subtidal horizons, this association is replaced by communities of *T. ciliatum* and green algae, which become more frequent in all phytocoenoses compared with those of the islands of the first group.

Farquhar Atoll

At Farquhar Atoll, *Thalassia hemprichii* + *Thalassodendron ciliatum* associations of North Island, South Island, Bird Island and the lagoon (Figs. 14-17) had moderate population densities and biomasses (Fig. 15, Table 2). Plant coverage near South Island ranges from 5 to 40% and 100% near North Island. Macrophyte associations include *Boodlea struveoides, Valonia aegagropila, Cladophoropsis sundanensis, Dictyosphaeria cavernosa* and *D. verluysii.* The green algae *Cladophora socialis* and *B. struveoides* form monodominant intertidal phytocoenoses. *Boodlea struveoides, Caulerpa cupressoides* and *Valonia aegagropila* are included as subdominant species in both the *Thalassodendron ciliatum - B. struveoides* and *T. ciliatum - V. aegagropila - C. cupressoides* (Table 2) plant associations. The phytocoenoses also include *Microdictyon okamurai, Dictyosphaeria cavernosa, Cladophoropsis sundanensis, Jania adhaerens, J. ungulata, Gelidiella pannosa, G. myrioclada, G. lubrica, Lophosiphonia villum, Ceramium fastigiatum* and *Hypnea esperi. Haloplegma duperreyi, Liagora ceranoides, Laurencia papillosa, L. obtusa* and *Lobophora variegata* are epiphytic on the stems of *T. ciliatum* at the reef edge.

The subtidal zone vegetation is poorly developed on the reef slope, because abundant coral populations extend almost to the reef-front. The following phytocoenoses were distinguished at depths of 3-17 m: *Caulerpa cupressoides* + *Boodlea struveoides, Halimeda opuntia* + *C. cupressoides*

and *Thalassodendron ciliatum - Halimeda*. With increasing depth these were replaced by phytocoenoses of *M. okamurai + B. struveoides*, *Microdictyon* and *Udotea + Caulerpa* (Table 2). Plant coverage ranges from 5 to 90%, but more often 5-30%. The height of vegetative cover is not great (1-2, seldom more than 1 cm) and the biomass is small (261-520 $g \cdot m^{-2}$).

Species richness of algae in the subtidal zone is low, and does not change with depth. Such species as *M. okamurai*, *C. cupressoides*, *B. struveoides*, *H. opuntia* and *Struvea anastomosans*, are widespread at 35 m. The epiphytes *Haloplegma duperreyi*, *Jania ungulata*, *Gelidiella myrioclada*, *G. lubrica*, *Griffithsia subcylindrica*, *G. metcalfii*, *Heterosiphonia crispella* and *Lophocladia trichoclados* inhabit the stems of *T. ciliatum*. *Turbinaria ornata* and *Lobophora variegata* also occur but are rare.

Sargassum ilicifolium was found between 1-4 m deep on a sunken vessel at the southwestern end of the atoll representing the only low island location where the genus occurred. *Ulva rigida*, *Boodlea struveoides*, *Dictyosphaeria cavernosa*, *Struvea anastomosans*, *Cladophora laetevirens*, *Dictyopteris delicatula*, *Padina* sp., *Sphacelaria rigidula*, *Gelidium pusillum*, *Jania ungulata*, *Hypnea esperi* and *H. pannosa* occurred with the *Sargassum*.

The vegetation of the lagoon is considerably richer than that of the outer reef slope. It is characterized by the *Thalassodendron - Halimeda* phytocoenosis (Figs. 14-17; Table 2). The central part of the lagoon is covered with sand and corals and is devoid of vegetation. In the southern region of the lagoon, sites with *Thalassodendron ciliatum* phytocoenoses are rare. The belt of *Thalassia hemprichii + T. ciliatum*, including species of *Laurencia* and *Halimeda*, runs along the northwestern reef edge. Northern and western parts of the lagoon are occupied by dense populations of *T. ciliatum*, which is responsible for 60-95% of the plant biomass. *Halimeda opuntia*, *Caulerpa cupressoides* and *Microdictyon okamurai* are community subdominants. *Halimeda gracilis*, *Caulerpa serrulata*, *C. peltata*, *C. racemosa*, *C. mexicana*, *Valonia aegagropila*, *Boodlea struveoides*, *Laurencia obtusa*, *L. papillosa*, *Hypnea esperi*, *Jania ungulata*, *J. capillacea*, *Centroceras apiculatum*, *Ceramium fastigiatum* and *Gelidiella lubrica* are of frequent occurrence. At Farquhar Atoll, an estimated 195,139 t of benthic phytomass occupies an area of 10,085 ha. Altogether near Farquhar Atoll, 2 seagrasses and 115 algal species (including 66 red, 39 green, 7 brown and 3 blue-green species) were found.

Aldabra Atoll

The structure of the Aldabra Atoll differs considerably from some of the other island groups, since its coasts are built primarily of dead consolidated corals and are steeply undercut and overhang the water. Surveys were conducted mostly on the western coast of the atoll near Bua Passage in the lagoon and on the outer part of the reef, as well as the southeastern parts of the atoll (Figs. 18-20). A polydominant association of *Thalassodendron ciliatum - Thalassia hemprichii - Halimeda* forms in the lower intertidal horizon (Table 2). *Thalassodendron ciliatum* is responsible for 40-90% of the community biomass, while *T. hemprichii*, *Halimeda opuntia*, *Caulerpa cupressoides* and *Laurencia* combine to contribute 60-10%. In addition to the above species, the phytocoenosis includes *Laurencia*, *Hypnea* and *Jania* species forming dense mats. The stems of *T. ciliatum* are overgrown with epiphytes, including *Ulva rigida*, *Hypnea esperi*, *Dasya mollis*, *Dictyurus purpurascens*, *Heterosiphonia* sp., and occasionally *Lobophora variegata* and *Syringodium isoetifolium* are present. At the lower border of the intertidal zone, the association of *Thalassodendron - Thalassia - Halimeda* is replaced by a *T. ciliatum* association which forms a belt 400-500 m in width along the entire western coast. On the reef slope, *T. ciliatum* populations disappear at 10 m in depth on a sandy bottom with abundant dead coral debris. The most common associated species are *Ulva rigida*, *Halimeda opuntia*, *H. tuna*, *H. gracilis*, *H. micronesica*, *Lobophora variegata*, *Turbinaria ornata*, *Spyridia filamentosa*, *Acanthophora spicifera*, *Dasya mollis*, *Caloglossa adnata* and species of

Ceramium, Hypnea and *Gelidiella. Wurdemannia miniata, Gelidiella myrioclada* and *Ulva rigida* grow on the stems of *T. ciliatum*. Depths to 12-35 m are occupied by simple monodominant phytocoenoses of *Halimeda*. These phytocoenoses include a considerable number of species similar to that of the *T. ciliatum* association. Additionally, *Chlorodesmis comosa, Avrainvillea amadelpha* f. *submersa, Acetabularia parvula, A. clavata, Boergesenia forbesii* and *Chondria polyrhiza* occur here.

The lagoon is connected with the ocean by the Bua Passage (depth of 5-6 m). The passage bottom is swept by strong currents and is hard and sandy with settlements of black gorgonians. Often the dead coral debris is populated by extensive growths of *Thalassodendron ciliatum* (Station 93). *Thalassodendron* leaves and stems are devoid of epiphytes, probably because of the strong current in the passage. Seagrass growths spread into the lagoon and occupy a zone 600-800 m from the shore where the depth decreases sharply. On shallow intertidal areas of the lagoon, vegetative coverage is composed of numerous assemblages, the most common of which is a phytocoenosis dominated by *Spyridia filamentosa*. A phytocoenosis of *Thalassia - Halimeda* occupies the area near the coast along the northern part of the lagoon (Fig. 18; St. 90; Table 2). Opposite the passage, phytocoenoses of *Turbinaria - Halimeda* (St. 91) and *Thalassodendron - Laurencia - Halimeda* (St. 89) are present. Plant communities of the lagoon have oligo- to poly-dominant structures, mosaic patterns of the phytocoenoses and rich macrophyte compositions.

Near Aldabra Atoll, 4 seagrass species and 119 algal species (i.e., 73 Rhodophyta, 40 Chlorophyta, 4 Phaeophyta, and 2 Cyanophyta) were collected.

Cosmoledo Atoll

The bottom vegetation of the reef slope and lagoons was surveyed at depths from 4 to 42 m near Wizard and Pagoda islands (Figs. 21, 22). The vegetative coverage at 4-20 m depths is poorly developed and consists of separate groups with dominants consisting of species of *Laurencia, Turbinaria, Galaxaura, Caulerpa* and *Boodlea*. Below 20 m, *Halimeda, Microdictyon* and *Avrainvillea* species predominate (Table 2). *Thalassodendron ciliatum, Microdictyon* and *Avrainvillea* species predominate (Table 2). *Thalassodendron ciliatum* phytocoenoses, common in the majority of the atolls surveyed, were not found in the subtidal zone. Most of the species found at this coastal site occur at all depths examined and do not reveal any definite regularity in vertical distribution. The following species were found rarely or for the first time: *Neomeris vanbosseae, Caulerpa webbiana, C.* sp., *Acetabularia pusilla, Mesophyllum mesomorphum, Hydrolithon breviclavium, Wrangelia argus, Ceramium huysmansii, Sphacelaria tribuloides* and *Phaeophila dendroides.*

The lagoon contains a rich vegetative cover. The vast sandy shallow water areas between the islands Wizard and Polit and the coastal zone of Wizard are occupied by an association dominated by *Halodule uninervis*. An association of *Thalassia + Cymodocea* is situated somewhat farther from the shore. An association dominated by *Thalassodendron ciliatum - Laurencia* was found between 0.4-5.5 m in depth. The central and western parts of the lagoon are occupied by an association of *T. ciliatum - Halimeda opuntia* (Table 2). The coenobionts *Laurencia papillosa, Caulerpa racemosa, C. cupressoides, C.* sp., *Microdictyon okamurai* and *Chaetomorpha capillare* are typical members of the association.

The species composition of the lagoon algae is uniform and includes mostly green algae. In addition to the above mentioned species, *Boergesenia forbesii, Dictyosphaeria cavernosa, Neomeris annulata, Lobophora variegata* and *Haloplegma duperreyi* were found here. Cosmoledo Atoll contained 4 seagrass species and 106 algal species, including 60 red, 42 green and 6 brown algae.

St. Joseph Atoll

The southern coast of D'Arros and Resourse islands and the eastern, northeastern and southern coasts of St. Joseph Island were surveyed. The distribution of seagrass communities over the intertidal zone of D'Arros and St. Joseph islands is typical of the other systems (Figs. 23-25; Table 2). A phytocoenosis dominated by *Thalassodendron - Thalassia* is replaced by a phytocoenosis of *Cladophoropsis sundanensis*+ *Valonia fastigiata* in the lower intertidal horizon near D'Arros island. The dominant species are all mat formers. *Boodlea struveoides, Dictyosphaeria verluysii, Microdictyon montagnei, Jania capillacea* and *Gelidiella pannosa* also occur here. The reef edge is exposed to a heavy wave action and is devoid of vegetation. Separate populations of *Halimeda gracilis* and *Botryocladia skottsbergii* occur at depths of 3-5 m. Deeper substrata are covered by crustose algae, such as *Fosliella, Peyssonnelia* and *Neogoniolithon*, and by corals.

Resourse Island

Two communities dominated by *Thalassodendron - Microdictyon* or *Thalassodendron* form in the lower intertidal and upper subtidal zones of Resourse island. *Halimeda* communities occupy depths of 7-37 m (Table 2). *Thalassia hemprichii* dominates the areas exposed to air at low waters. In the lagoon of St. Joseph Island, *T. ciliatum* tends to predominate with increasing depth. *Microdictyon okamurai, M. montagnei, Boodlea struveoides, Dictyosphaeria cavernosa, D. verluysii, Valonia fastigiata, Udotea orientalis, Halimeda stuposa, H. micronesica* and *H. opuntia* dwell among the *Thalassodendron. Caulerpa serrulata* and *C. cupressoides* inhabit bottoms of sandy depressions. Phytocoenoses of *T. ciliatum* with typical species composition were found on parts of the northeastern coast of the subtidal zone of St. Joseph Island (Fig. 25). *Halimeda* communities with rich species composition of associated algae dominate on the reef slope.

Cladophoropsis sundanensis, Boodlea struveoides and *Valonia aegagropila* form mats along the reef edge. Populations of *Turbinaria ornata, Lobophora variegata, Dictyosphaeria cavernosa, D. verluysii, Dictyurus purpurascens, Rhipilia tomentosa* and *Udotea argentea* occur at depths of 3-5 m. Deeper to 35-38 m, rubble and blocks are covered with dense low growing populations of numerous red algae such as *Gelidiella myrioclada, Gelidium pusillum, Gelidiopsis scoparia, Polysiphonia* sp., *Lophosiphonia villum, Herposiphonia secunda* f. *tenella, Heterosiphonia crispella, Ceramium fastigiatum, Centroceras apiculatum, Hypnea spinella* and *Laurencia* sp. The green algae *Microdictyon okamurai, Struvea anastomosans, Caulerpa* sp., *Halimeda micronesica, H. stuposa, Valoniopsis pachynema* and *Valonia aegagropila* are the most frequent, while *Codium tomentosum, C. geppii, Cladophora laetevirens, Lophosiphonia reptabunda, Lomentaria mauritiana, L. hawaiiana, Chondria dasyphylla, Jania decussatodichotoma* and *Halophila stipulacea* occur less frequently. *Anadyomene plicata, Scinaia* and *Gracilaria cylindrica* are occasional and sparcely distributed.

St. Joseph and D'Arros Islands contain 4 seagrasses and 120 algal species, including 69 Rhodophyta, 46 Chlorophyta, 4 Phaeophyta and 2 Cyanophyta.

Astove Atoll

As a rule, the intertidal zone of Astove Atoll is characterized by a mosaic structure of phytocoenoses and massive development of *Laurencia.* The intertidal and upper subtidal vegetative cover differs considerably from that of the other islands by its structure and species composition. There is a polydominant phytocoenosis of *Thalassodendron ciliatum - Caulerpa sertularioides + Acanthopora spicifera* formed on the vast silt-sand shallow area along the coast (Fig. 27; Table 2). In the lower horizon, this is replaced by a phytocoenosis formed by *T. ciliatum* and several *Laurencia*

species, including *L. decumbens* (Fig. 26, Sts. 247-249; Table 2). Maximal quantitative development of macrophytes occurs at the reef edge (Fig. 27), with associates consisting of *Laurencia parvipapillata, L. corymbosa, L.* sp., *Liagora* sp., *Hypnea spinella, Chaetomorpha crassa, Halimeda opuntia, Dictyosphaeria cavernosa, D. verluysii, Valonia aegagropila* and *Boodlea struveoides.*

Two phytocoenoses can be distinguished on the subtidal reef slope. A phytocoenosis of *Thalassodendron ciliatum - Halimeda hederacea - Laurencia* sp. occurs from 0-3 m in depth. Deeper, coral populations appear, and between them oligodominant phytocoenoses of *Halimeda copiosa + Caulerpa* sp. are located on sandy areas containing dead coral debris (Table 2). *Valonia aegagropila, Dictyosphaeria cavernosa, D. verluysii, Halimeda opuntia, H. tuna, Avrainvillea amadelpha* f. *submersa, Laurencia patentisamea, L. corymbosa* and *Gelidiella myrioclada* are commonly associated species (Fig. 28). The distinctive feature of the subtidal vegetation of Astove Island is the development of massive populations of *Caulerpa* sp. at 20-50 m depths. The benthic vegetation of Astove Island was not examined fully due to time constraints, so only 3 seagrasses and 61 algal species (32 red, 27 green and 2 brown algae) were found.

Mahé and adjacent islands

The northern, eastern and northeastern coasts of the island and three small islands just outside Victoria Harbor (Figs. 29-31) were studied. The intertidal zone of the northeastern coast is open to the sea and narrow (60-80 m), with a slight slope. A phytocoenosis of *Cladophoropsis sundanensis + Centroceras clavulatum*, along with the associated species *Ulva rigida, Cladophora socialis, Valonia aegagropila, Champia parvula, Cladophora patentiramea, Hypnea* sp. and *Jania* sp., populate stone blocks in the middle intertidal horizon. An oligodominant association dominated by *Sargassum-Gracilaria multifurcata* occupies the lower intertidal horizon spreading almost to the reef-flat edge (Fig. 30: Table 2). *Gracilaria crassa* develops in shallow water habitats, deeper it is replaced by populations of *G. multifurcata, G.* sp., *Amphiroa foliacea, Gelidiella acerosa, Jania capillacea* and *Cheilosporum spectabile*, forming mats. The species composition of the associated algae is rather rich with *Gelidiopsis scoparia, Hypnea valentiae, Laurencia papillosa, Sargassum cristaefolium, S. microcystum, Colpomenia sinuosa, Dictyopteris delicatula*, along with species of *Padina, Dictyota, Turbinaria* and *Sphacelaria* being found here.

Sargassum cristaefolium and *Turbinaria decurrens* occur on the fringing reef-flat of the northeast and east coasts and dominate on stony reef slope sites lacking corals in the subtidal zone (Fig. 29; Table 2; Sts. 164-167) where *Tricleocarpa oblongata* is a subdominant. Associates include *Hypnea valentiae, Ulva rigida, Caulerpa taxifolia, Cladophora patentiramea, Chlorodesmis comosa* and *Syringodium isoetifolium.*

Seagrass communities develop southwards into the harbor with *Cymodocea rotundata* inhabiting a narrow band along the shore, which is then replaced by *Thalassodendron ciliatum* occupying the entire area exposed at low waters. Associations of *Sargassum cristaefolium* occupy the southeastern coast's lower intertidal and upper subtidal zones (Figs. 29-31; Table 2). In the intertidal zone, the lower level of the *Sargassum* phytocoenosis includes *Gracilaria crassa, Cheilosporum spectabile, Jania longiartha, J. ungulata, Hypnea pannosa, H. nidulans, Laurencia parvipapillata, Amphiroa foliacea, Cladophoropsis sundanensis* and *Gelidiella acerosa*, which form mats. Isolated populations of *Dictyota indica, D. dichotoma, D. divaricata, Turbinaria ornata, Padina* sp. and *Caulerpa racemosa* occur as well.

Sargassum phytocoenoses have mono- and oligodominant structures (H = O-1, 1), provide 100% cover and high biomass (Table 2). Minimal biomass was found in the upper intertidal zone while maximal biomass occurred near the reef edge (Fig. 30). The biomass of the various phytocoenoses

decreases with depth. At 8-10 m deep, *Sargassum* phytocoenoses are replaced by those dominated by *Halimeda*, which are distributed around the island in a form of belt, as well as *Sargassum* spp. Seagrass phytocoenoses, including *Thalassia hemprichii, Thalassodendron ciliatum, Halodule uninervis* and *Halophila ovalis*, develop on shallow sites in the middle intertidal horizon where they attain maximal biomass. *Sargassum* phytocoenoses of the subtidal zone include species such as *Turbinaria decurrens, Lobophora variegata, Dictyota indica, Padina* sp. and *Tricleocarpa oblongata.*

St. Anne Island

The association of *Sargassum polycystum* + *Turbinaria ornata* occupies the middle intertidal horizon of the south part of the island (Fig. 29), whereas in the lower horizon it is replaced by an association of *Sargassum cristaefolium*. The lower level of this association is made up of dense mats of *Amphiroa foliacea* and *Gelidiella acerosa*. *Thalassia hemprichii* and *Halodule uninervis* grow along this coast in small shallow bays, while *Halophila ovalis* occupies more silty sites. The lower border of the *Sargassum* phytocoenosis extends to a depth of 0.8-2 m. Coral populations occupy the bottom deeper.

Cerf Island

Sargassum microcystum and *S. cristaefolium* dominate the lower intertidal and upper subtidal zones. The main coenobiont of this community is *Turbinaria ornata*. The lower level is formed by *Amphiroa foliacea, Cheilosporum spectabile, Jania capillacea, Haliptilon subulatum, Gelidiella acerosa* and *Halimeda opuntia*. Populations of *Padina* sp., *Dictyota* sp. and *Cymodocea serrulata* occur rarely and near the shore. Dense mats of *Gelidiopsis scoparia* cover dead coral blocks among *Sargassum* spp. in the upper subtidal zone and *Cladophoropsis membranacea* grows on the sandy bottom among the blocks. Below 3-4 m in depth, *Sargassum* spp. communities are replaced by populations of coral.

Anonyme Island

The marine vegetation of the north side of Anonyme Island, situated at the south end of Victoria Harbor, was investigated. Monodominant continuous phytocoenoses of *Sargassum microcystum* + *S. cristaefolium* occupy sandy-stony bottoms at 0.5-1.2 m in depth (Fig. 29; Sts. 169-173; Table 2). The species composition of these phytocoenoses is limited and includes such species as *Hypnea nidulans, Jania capillacea, J. ungulata, Centroceras clavulatum, Leveillea jungermannioides, Sphacelaria rigidula, Gelidium pusillum, Chlorodesmis comosa, Acetabularia parvula, Bryopsis pennata* and *Gelidiella acerosa*. The north reef slope is exposed to wave action and consists of blocks with poorly developed vegetation (Fig. 12; Table 2; Sts. 173-175). *Turbinaria ornata, Lobophora variegata, Dasya baillouviana* and crustose algae occur rarely.

Near Mahé and its adjacent islands, 7 seagrasses and 173 algal species were collected, including 86 reds, 53 greens, 27 browns and 7 blue-greens.

Praslin Island

The marine vegetation of the eastern and central areas of Grande Anse Bay and the southern and southwestern coasts of Praslin were investigated to a depth of 40 m (Figs. 32-34). In the middle intertidal horizon of Grande Anse Bay, an association of *Gelidiella acerosa* is formed on separate rocky blocks, lower it is replaced by *Gracilaria crassa* associations. Sandy bottom sites between rocky

blocks are overgrown by *Sargassum ilicifolium*. Phytocoenoses of the seagrasses *Cymodocea serrulata + Syringodium isoetifolium + Thalassodendron ciliatum, S. isoetifolium* and *Halodule uninervis* are situated in the nearshore sandy intertidal zone. *Caulerpa serrulata* predominates in the association of *C. serrulata + S. isoetifolium* and is responsible for 60-70% of the biomass. From the lower intertidal border, to 1-1.2 m deep, the *T. ciliatum* association inhabits sandy to stony substrata (Table 2; Fig. 34). The width of the *T. ciliatum* belt reaches 800-1000 m. *Halimeda stuposa* is typically found in this association.

At shallow sites (0.3-0.5 m), the above seagrass belt is replaced by a phytocoenosis of *Sargassum cristaefolium - Padina* sp. The species composition of this association is reduced and includes *Lobophora variegata, Dictyota indica* and *Chlorodesmis comosa*. With increasing depth, populations of *S.cristaefolium - Padina* sp. are replaced by multiple *Sargassum* assemblages that extend down to 8-10 m in depth. Maximal cover and biomass are found between depths of 1 to 3 m (Table 2). The species composition of *Sargassum*-dominated phytocoenoses is diverse and includes *Caulerpa cupressoides, C. serrulata, C. racemosa, C. sertularioides, C. mexicana, C. taxifolia, C. ambigua, Dictyosphaeria cavernosa, Enteromorpha clathrata, Chlorodesmis cosmosa, Cladophoropsis sundanensis, Struvea anastomosans, Dictyopteris polypodiodes, Dictyota indica, D. friabilis, D. divaricata, Lobophora variegata, Turbinaria conoides, Sphacelaria rigidula, S. tribuloides, Centroceras clavulatum, C. apiculatum, Gelidiopsis scoparia, Gelidiella acerosa, Champia parvula, Tolypiocladia glomerulata* and *Wurdemannia miniata*.

Below 9 m, the bottom is sandy with large calcium carbonate blocks and coral colonies. Hard substrata are overgrown with crustose and small algae such as *Gelidiella lubrica, Ceramium fastigiatum, Lophosiphonia villum, Gelidium pusillum* and *Champia parvula*. Among the larger macroalgae, *Lobophora variegata and Laurencia* species are the most frequent.

At the 40 m depth, *Chlorodesmis comosa, Cladophora laetevirens, Halimeda* sp., *Cladophoropsis sundanensis, Dictyota divaricata, Champia salicornioides, Dasya* sp., *Antithamnion herminieri* and *Chondria* sp. are common.

La Digue Island

The eastern intertidal zone is exposed to strong wave action and is narrow and devoid of vegetation, whereas the western coast is more protected from wave effects. The upper and middle intertidal horizons consist of a sandy beach. Algae overgrow sandy-stony reef-flat habitats. The oligodominant association of *Thalassodendron ciliatum - Hypnea pannosa* occurs near the shoreline (Table 2; St. 180; Fig. 34) and includes *Turbinaria ornata*, which deeper forms a 15-20 m wide belt. *Sargassum turbinarioides* dominates the middle of the reef-flat (Table 2). Distinctive phytocoenoses develop at lower levels, consisting mainly of *Hypnea nidulans* and *H. pannosa* mats which provide up to 8-20% of the total biomass. Populations of *Heterosiphonia* sp. often occur along the edge of the reef-flat among the *Sargassum* phytocoenoses. In the subtidal zone, *Sargassum* phytocoenoses extend down to 8 m in depth. Deeper, down to 30-31 m, there is a belt of crustose algae with mats of small red algae and separate patches of *Lobophora variegata* and *Laurencia* sp. The species composition of algae in this region is similar to that of deep waters off Praslin Island.

Phytocoenoses of granitic islands tend to have oligodominant structures, considerable biomass and limited species composition of associated species. *Sargassum* communities have monodominant structure, great biomass and rich species composition, which all become reduced with depth.

Near Praslin and La Digue Islands, 6 seagrass and 136 algal species, including 72 red, 35 green, 22 brown and 7 blue-green species were recorded.

CONCLUSIONS

The benthic vegetation of the Seychelles Islands shows several common characteristics, presumably related to similar geomorphological features of the coastal zones and the tropical oceanic location of the islands:

1. Rich species composition of algae at every island.
2. Wide range of vertical distribution of most the macrophyte species.
3. Domination of red (45-64.2%) and green (25.5-42.4%) algal species and poor development of brown algae (2.5-16.1%) in the floras of the low carbonate islands.
4. A great number of genera are common to all islands surveyed: green algae - *Caulerpa, Halimeda, Microdictyon, Boodlea, Anadyomene, Cladophoropsis, Avrainvillea, Udotea, Acetabularia, Valonia, Dictyosphaeria* and *Struvea*; brown algae - *Lobophora, Turbinaria* and *Dictyopteris*; red algae - *Galaxaura, Gelidiella, Wurdemannia, Peyssonnelia, Jania, Melobesia, Hypnea, Champia, Haloplegma, Anotrichium, Chondria, Centroceras, Dasya, Heterosiphonia, Lophocladia, Herposiphonia* and *Laurencia*; and the seagrasses - *Thalassia* and *Thalassodendron*.
5. *Thalassodendron ciliatum* and *Thalassia hemprichii* dominate the overall vegetative cover of soft bottoms. In the middle and lower intertidal horizons, seagrasses occur in the following sequence: *Halophila ovalis - Halodule uninervis - Thalassia hemprichii - Cymodocea serrulata - C. rotundata - Syringodium isoetifolium - T. ciliatum. Thalassodendron ciliatum* consistently forms a belt that dominates in the subtidal zone.
6. *Thalassodendron ciliatum* plays an important role in the stabilization of unconsolidated substrata in the coastal ecosystems of the atoll islands.
7. The benthic vegetation is characterized by relatively high standing stocks. In habitats with highly developed vegetative cover approaching 100%, the biomass reaches 2-4 $kg \cdot m^{-2}$. Maximal biomass was found over the depth range of 0.5-0.3 m, and averaged 4-8 $kg \cdot m^{-2}$.
8. Commercially exploitable stocks of macrophytes were found: mainly *Thalassodendron ciliatum* (biomass = 1-4 $kg \cdot m^{-2}$) on atoll island sand and on the granitic islands, primarily species of *Sargassum* (biomass = 2-10 $kg \cdot m^{-2}$) and *Gracilaria* (biomass = 2-6 $kg \cdot m^{-2}$).

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Table 1. Preliminary checklist of benthic marine algae and seagrasses collected near Seychelles Islands. M = Mahé, P = Praslin, Co = Cöetivy, F = Farquhar, D = Desroches, A = Aldabra, AB = African Banks, S = St. Joseph, Pd = Providence, Cs = Cosmoledo and As = Astove.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
CYANOPHYTA											
Oscillatoriales											
Oscillatoriaceae											
1. *Oscillatoria margaritifera* (Kütz.) Gom.					P	M	AB				
2. *Oscillatoria miniata* (Zanard.) Hauck					P	M					
3. *Lyngbya confervoides* Ag.					P	M	AB				
4. *Lyngbya majuscula* (Dillw.) Harv.		F	A	D	P	M	AB	S			
5. *Lyngbya martensiana* Menegh.		F	A			M					
6. *Lyngbya* sp.		F				M		S			
7. *Symploca hydnoides* (Harv.) Kütz.					P						
Nostocales											
Rivulariaceae											
8. *Calothrix confervicola* (Dillwyn) Ag.						M					
9. *Calothrix aeruginea* (Kütz.) Thuret					P						
Nostocaceae											
10. *Calothrix parietina* (Näg. ex Kütz.) Thuret					P						
Nostocales											
11. *Hormothamnium solutum* Born. et Grunow	Co			D							
RHODOPHYTA											
Goniotrichales											
Goniotrichaceae											
12. *Chroodactylon ornatum* (C. Ag.) Basson (=*Asterocytis ornata*; *Asterocytis ramosa*)		F	A	D		M	AB	S			
13. *Stylonema alsidii* (Zanard.) Drew		F	A	D	P	M	AB	S		Cs	
Bangiales											
Erythropeltidaceae											
14. *Erythrotrichia carnea* (Dillw.) J. Ag.	Co	F	A				AB	S	Pd	Cs	
15. *Erythrocladia* sp.						M					
Floridepphyceae											
Acrochaetiales											
Acrochaetiaceae											
16. *Acrochaetium occidentale* Bφrg.				D							
17. *Acrochaetium robustum* Bφrg.						M					
18. *Acrochaetium seriatum* Bφrg.					P	M					
19. *Acrochaetium* sp.	Co										
20. *Chromastrum crassipes* (Bφrg.) Papenf. (=*Acrochaetium crassipes*)						M					

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
Nemaliales											
Liagoraceae											
21. *Liagora ceranoides* Lam.		F	A					S			
22. *Liagora divaricata* Tseng	Co										
23. *Liagora pinnata* Harv.				D							
24. *Liagora* sp.1		F									
25. *Liagora* sp.2	Co										
26. *Liagora* sp.3											As
Galaxauraceae											
27. *Scinaia complanata* (Collins) Cotton								S			
28. *Galaxaura marginata* (Ell. et Sol.) Lam.				D							
29. *Tricleocarpa oblongata* (Ell. et Sol.) Huisman et Borowitzka (=*Galaxaura oblongata*)	Co	F	A		P	M			Pd		
30. *Galaxaura rugosa* (Ellis et Soland.) Lam. (=*Galaxaura rudis*)	Co	F	A	D	P	M			Pd	Cs	
31. *Galaxaura* sp.				D					Pd		
Gelidiales											
Gelidiaceae											
32. *Gelidium crinale* f. *corymbosa* (Kütz.) J. Feldm. et Hamel						M					
33. *Gelidium pusillum* (Stackh.) Le Jolis	Co	F	A	D	P	M		S		Cs	
34. *Pterocladia caloglossoides* (Howe) Daws.					P						
Gelidiellaceae											
35. *Gelidiella acerosa* (Forsskål) J. Feldm. et Hamel					P	M				Cs	As
36. *Gelidiella adnata* Daws.	Co	F	A		P	M				Cs	As
37. *Gelidiella lubrica* (Kütz.) J. Feldm. et Hamel	Co	F	A	D	P	M	AB				
38. *Gelidiella myrioclada* J. Feldm. et Hamel	Co	F	A	D	P		AB	S		Cs	As
39. *Gelidiella sanctarum* J. Feldm. et Hamel	Co										
40. *Gelidiella pannosa* J. Feldm. et Hamel (=*Gelidiella tenuissima*)	Co	F	A		P	M	AB	S			
Bonnemaisoniales											
Bonnemaisoniaceae											
41. "*Falkenbergia hillebrandii*" (N.B. - stage of *Asparagopsis*)	Co	F		D	P	M					
Corallinales											
Corallinaceae											
42. *Fosliella farinosa* (Lam.) Howe					P	M		S		Cs	
43. *Neogoniolithon* sp.								S	Pd	Cs	As
44. *Pheophyllum confervicola* (Kütz.) Chamb. (=*Melobesia minutula*)					P						
45. *Hydrolithon breviclavium* (Fosl.) Fosl.										Cs	
46. *Porolithon gardineri* (Fosl.) Fosl.		F	A				AB		Pd	Cs	
47. *Spongites reinboldii* (W.v. Bosse et Fosl.) Penrose et Woelkerling					P						

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
48. *Melobesia* sp.	Co	F	A	D	P	M			Pd	Cs	
49. *Mesophyllum mesomorphum* (Fosl.) Adey							AB		Pd	Cs	
50. *Sporolithon ptychoides* Heydrich (=*Spongites erythraeum*)					P	M					
51. *Spongites sporolithon*					P	M		S	Pd		
52. *Lithophyllum kotschianum* (Fosl.)					P	M					
53. *Cheilosporum spectabile* Harv.						M			Pd		
54. *Haliptilon subulatum* (Ell. et Sol.) Johan.				D							
55. *Jania adhaerens* Lam.	Co	F	A								
56. *Jania capillacea* Harv.	Co	F	A	D	P	M	AB	S	Pd	Cs	As
57. *Jania decussato-dichotoma* (Yendo) Yendo								S		Cs	As
58. *Jania longiartha* Daws.	Co					M					
59. *Jania ungulata* (Yendo) Yendo f. *brevior* (Yendo) Yendo	Co	F	A	D	P	M	AB		Pd	Cs	
60. *Jania* sp.				D		M		S			
61. *Amphiroa anastomosans* W.v. Bosse				D							
62. *Amphiroa foliacea* Lam.						M					
63. *Amphiroa fragilissima* (L.) Lam.						M		S			
64. *Metagoniolithon stelligerum* (Lam.) W.v. Bosse	Co	F			P						
Cryptonemiales											
Peyssonneliaceae											
65. *Peyssonnelia dubyi* Crouan										Cs	
66. *Peyssonnelia* sp.1	Co	F	A	D	P	M		S	Pd	Cs	As
67. *Peyssonnelia* sp.2									Pd	Cs	
Dumontiaceae											
68. *Dudresnaya* sp.				D							
69. *Gibsmithia hawaiiensis* Doty					P						
Halymeniaceae											
70. *Halymenia* sp.				D	P	M					
Kallymeniaceae											
71. *Kallymenia* sp.	Co	F									
Gigartinales											
Gymnophlocaceae											
72. *Titanophora* sp.										Cs	
73. *Portieria hornemannii* (Lyngbye) Silva				D							
Hypneaceae											
74. *Hypnea cenomyce* J. Ag.					P						
75. *Hypnea cervicornis* J. Ag.						M					
76. *Hypnea cornuta* (Kütz.) J. Ag.					P	M					
77. *Hypnea esperi* Bory	Co	F	A	D	P	M		S	Pd		As
78. *Hypnea nidulans* Setchell					P	M	AB			Cs	
79. *Hypnea pannosa* J. Ag.	Co	F	A	D	P	M					As
80. *Hypnea spinella* (C. Ag.) Kütz.		F	A	D	P	M		S	Pd	Cs	As
81. *Hypnea valentiae* (Turn.) Mont.				D	P					Cs	As
82. *Hypnea* sp.		F	A					S			As

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
Plocamiaceae											
83. *Plocamium* sp.		F		D		M		S	Pd		As
Caulacanthaceae											
84. *Caulacanthus* sp.					P						
Wurdemanniaceae											
85. *Wurdemannia miniata* (Sprengel) J. Feldm. et Hamel		F	A		P	M	AB	S		Cs	As
Phyllophoraceae											
86. *Gymnogongrus chnoosporoides* Tan. et Pham-Hoang									Pd		
87. *Gymnogongrus pygmaeus* J. Ag.		F									
Gigartinaceae											
88. *Gigartina* sp.	Co		A			M					
Gracilariaceae											
89. *Gracilaria crassa* Harv.			A			M	AB				
90. *Gracilaria cylindrica* Bϕrg.			A		P	M		S			As
91. *Gracilaria multifurcata* Bϕrg.						M					
92. *Gelidiopsis gracilis* (Kütz.) Vickers					P						
93. *Gelidiopsis scoparia* (Mont. et Mill.) Schmitz					P	M					As
94. *Gelidiopsis* sp.		F									
95. *Ceratodictyon spongiosum* Zanard.		F	A								
Rhodymeniales											
Rhodymeniaceae											
96. *Botryocladia skottsbergii* (Bϕrg.) Levr.	Co	F	A	D	P	M	AB	S		Cs	As
97. *Chrysymenia enteromorpha* Harv.									Pd		
98. *Chrysymenia pyriformis* Bϕrg.	Co						AB	S			
99. *Chrysymenia* sp.	Co	F	A								
100. *Coelarthrum boergesenii* W.v. Bosse	Co	F	A	D			AB	S	Pd		
101. *Rhodymenia anastomosans* W.v. Bosse				D							
102. *Rhodymenia* sp.						M					
Lomentariaceae											
103. *Lomentaria corallicola* Bϕrg.				D	P						
104. *Lomentaria mauritiana* Bϕrg.				D	P	M	AB	S	Pd		
Champiaceae											
105. *Champia globulifera* Bϕrg.				D		M					
106. *Champia indica* Bϕrg.											As
107. *Champia parvula* (C. Ag.) Harv.	Co	F	A	D	P	M	AB	S	Pd	Cs	As
108. *Champia salicornoides* Harv.				D	P	M		S	Pd		
109. *Champia viellardii* Kütz.		F	A			M					
110. *Champia* sp.				D				S			
Ceramiales											
Ceramiaceae											
111. *Crouania attenuata* (C. Ag.) J. Ag.			A	D			AB	S	Pd		
112. *Antithamnion lherminieri* Nasr.	Co			D							
113. *Antithamnion* sp.			A	D		M	AB	S		Cs	

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
114. *Platythamnion* sp.							AB				
115. *Antithamnionella* sp.		F	A	D	P	M			Pd	Cs	
116. *Ceramium brevizonatum* var. *caraibicum* H. Petersen et Bϕrg.	Co										
117. *Ceramium fastigiatum* (Wulf. ex Roth) Harv.	Co	F	A	D	P		AB	S		Cs	
f. *flaccidum* H. Petersen	Co										
118. *Ceramium fimbriatum* Setch. et Gardn.		F	A	D	P	M					
119. *Ceramium gracillimum* (Kütz.) Zanard.	Co	F	A	D	P	M	AB	S		Cs	As
120. *Ceramium huysmansii* W.v. Bosse										Cs	
121. *Ceramium mazatlanense* Daws.	Co	F	A	D		M		S			
122. *Ceramium taylorii* Daws.					P	M	AB	S		Cs	
123. *Ceramium* sp.1			A	D							
124. *Ceramium* sp.2				D	P	M		S			
125. *Ceramium* sp.3						M					
126. *Centroceras clavulatum* (C. Ag.) Mont.		F	A	D	P	M	AB		Pd	Cs	
127. *Centroceras apiculatum* Yam.	Co	F	A	D	P		AB	S		Cs	
128. *Spyridia filamentosa* (Wulf.) Harv.		F	A							Cs	
129. *Wrangelia argus* (Mont.) Mont.			A			M		S		Cs	
130. *Callithamnion byssoides* Arn.			A	D				S			
131. *Aglaothamnion* sp.						M					
132. *Pleonosporium borreri* (Smith) Näg.								S			
133. *Haloplegma duperreyi* Mont.	Co	F	A	D			AB	S	Pd	Cs	
134. *Griffithsia globulifera* (Harv.) Kütz.						M					
135. *Griffithsia metcalfii* Tseng	Co	F	A	D			AB	S			
136. *Griffithsia subcylindrica* Okam.	Co		A	D			AB	S	Pd	Cs	
137. *Anotrichium tenuis* (C. Ag.) Näg.		F		D	P	M	AB	S		Cs	
138. *Griffithsia weber-van-bosseae* Bϕrg.				D				S			
139. *Griffithsia* sp.			A								
140. *Gymnothamnion elegans* (Schousboe ex C. Ag.) J. Ag.					P						
Delesseriaceae											
141. *Caloglossa adnata* (Zanard.) De Toni			A	D							
142. *Caloglossa leprieurii* (Mont.) J. Ag.			A								
143. *Caloglossa stipitata* Post			A						Pd		
144. *Hypoglossum attenuatum* Gardn.			A	D	P			S			
145. *Taenioma perpusillum* (J. Ag.) J. Ag.			A								
146. *Cottoniella arcuata* Bϕrg.									Pd	Cs	
147. *Platysiphonia* sp.				D			AB				
148. *Martensia* sp.					P			S			
Dasyaceae											
149. *Dasya mollis* Harv.	Co	F	A	D	P		AB	S			
150. *Dasya baillouviana* (Gmel.) Mont.	Co		A			M				Cs	
151. *Dasya sp.1*			A	D				S			
152. *Dasya sp.2*						M					
153. *Dasya sp.3*										Cs	

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
154. *Heterosiphonia crispella* (C. Ag.) Wynne (=*Heterosiphonia wurdemannii*)	Co	F	A	D	P	M	AB	S	Pd	Cs	
155. *Heterosiphonia* sp.1	Co		A	D	P			S		Cs	As
156. *Heterosiphonia* sp.2	Co	F	A				AB				
157. *Dictyurus purpurascens* Bory Rhodomelaceae	Co	F	A	D	P		AB	S	Pd	Cs	As
158. *Polysiphonia coacta* Tseng	Co	F									
159. *Polysiphonia mollis* J. Hook. et Harv.					P	M	AB	S			
160. *Polysiphonia ferulacea* Suhr ex J. Ag.					P						
161. *Polysiphonia scopulorum* Harv.	Co										
162. *Polysiphonia subtilissima* Mont.		F	A	D							
163. *Polysiphonia* sp.	Co	F	A	D	P	M	AB			Cs	
164. *Vidalia* sp.	Co	F		D				S			
165. *Tolypiocladia glomerulata* (Ag.) Schmitz					P	M				Cs	
166. *Lophocladia trichoclados* (C. Ag.) Schmitz	Co	F	A	D	P	M	AB	S	Pd		As
167. *Bostrychia binderi* Harv.						M					
168. *Herposiphonia secunda* (C. Ag.) Ambronn	Co		A								
f. *tenella* (Ag.) Wynne	Co	F	A	D	P	M	AB	S	Pd	Cs	As
169. *Leveillea jungermannioides* (Hering et Martens) Harv.					P	M			Pd	Cs	
170. *Lophosiphonia reptabunda* (Suhr.) Kyl.	Co	F			P			S		Cs	
171. *Lophosiphonia villum* (J. Ag.) Setch. et Gardn.	Co	F	A	D	P	M	AB	S		Cs	
172. *Lophosiphonia* sp.										Cs	
173. *Chondria dasyphylla* (Woodw.) C. Ag.			A					S			
174. *Chondria polyrhiza* Coll. et Herv.			A								
175. *Chondria repens* Bφrg.	Co	F			P	M	AB	S	Pd	Cs	
176. *Chondria sp.*		F	A							Cs	
177. *Acanthophora spicifera* (Vahl) Bφrg.			A			M					As
178. *Laurencia articulata* Tseng					P						
179. *Laurencia corymbosa* J. Ag.									Pd	Cs	As
180. *Laurencia decumbens* Kütz.		F	A	D	P			S		Cs	As
181. *Laurencia distichophylla* J. Ag.			A					S			
182. *Laurencia obtusa* (Huds.) Lam.	Co	F				M					
183. *Laurencia patentiramea* (Montagne) Kütz.	Co	F	A			M	AB	S		Cs	As
184. *Laurencia parvipapillata* Tseng.	Co	F	A	D		M		S	Pd	Cs	As
185. *Laurencia papillosa* (Ag.) Grev.		F	A	D	P	M		S	Pd	Cs	As
186. *Laurencia pygmaea* W.v. Bosse			A			M					
187. *Laurencia* sp.1	Co	F	A				AB	S			As
188. *Laurencia* sp.2						M					
189. *Laurencia* sp.3			A			M					
190. *Laurencia* sp.4					P						
191. *Laurencia* sp.5				D	P		AB	S			

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
PHAEOPHYTA											
Ectocarpales											
Ectocarpaceae											
192. *Ectocarpus* sp.						M					
193. *Hincksia mitchelliae* (Harv.) Silva				D		M					
194. *Hincksia breviarticulata* (J. Ag.) Silva						M					
195. *Streblonema* sp.					P						
Scytosiphonales											
Scytosiphonaceae											
196. *Colpomenia sinuosa* (Mert. ex Roth) Derb. et Sol.					P	M					
197. *Hydroclathrus clathratus* (C. Ag.) Howe						M					
198. *Rosenvingea intricata* (J. Ag.) Bϕrg.						M					
Chnoosporaceae											
199. *Chnoospora minima* (Hering) Papenf.						M					
Sphacelariales											
Sphacelariaceae											
200. *Sphacelaria rigidula* Kütz.		F	A		P	M	AB			Cs	
201. *Sphacelaria tribuloides* Menegh.	Co				P	M				Cs	
Dictyotales											
Dictyotaceae											
202. *Dictyota bartayresii* Lam.			A	D	P						
203. *Dictyota ceylanica* Kütz.					P						
204. *Dictyota divaricata* Lam.					P						
205. *Dictyota friabilis* Setch.			A		P						
206. *Dictyota indica* Sond. ex Kütz.					P	M					
207. *Dictyota patens* J. Ag.						M					
208. *Dictyota* sp.						M		S			
209. *Dictyopteris delicatula* Lam.	Co	F		D	P	M		S	Pd		
210. *Dictyopteris polyposioides* (DeCandalle) Lam.					P	M					
211. *Padina minor* Yam.		F									
212. *Padina pavonica* (L.) Thivy					P	M					
213. *Padina* sp.					P						
214. *Lobophora variegata* (Lam.) Womers.	Co	F	A	D	P	M	AB	S	Pd	Cs	As
Fucales											
Cystoseiraceae											
215. *Hormophysa cuneiformis* (Gmelin) Silva						M					
Sargassaceae											
216. *Sargassum cristaefolium* C. Ag.		F				M					
217. *Sargassum ilicifolium* (Turn.) C. Ag.		F				M					
218. *Sargassum mcclurei* Setch.					P	M					
219. *Sargassum microcystum* J. Ag.					P	M					
220. *Sargassum piluliferum* (Turner) C. Ag.					P						

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
221. *Sargassum polycystum* C. Ag.						M					
222. *Sargassum turbinarioides* Grun.					P	M					
223. *Sargassum* sp.					P						
224. *Turbinaria conoides* (J. Ag.) Kütz.			A		P	M					
225. *Turbinaria decurrens* Bory						M	AB				
226. *Turbinaria ornata* (Turn.) J. Ag.	Co	F	A	D	P	M		S		Cs	As
227. *Turbinaria* sp.					P					Cs	
CHLOROPHYTA											
Phaeophilales											
Phaeophilaceae											
228. *Phaeophila dendroides* (P. et H. Crouan) Batt.	Co										
Dasycladales											
Dasycladaceae											
229. *Neomeris annulata* Dickie			A							Cs	As
230. *Neomeris bilimbata* Koster				D							
231. *Neomeris vanbosseae* Howe			A						Pd	Cs	
232. *Neomeris* sp.				D							
Polyshysacaea											
233. *Polyphysa* sp.			A	D							
234. *Acetabularia clavata* Yam.	Co		A	D		M					
235. *Acetabularia exigua* Solms-Laub.	Co					M					
236. *Acetabularia parvula* Solms-Laub.	Co		A	D	P	M				Cs	
237. *Acetabularia pusilla* (Howe) Collins			A	D	P	M				Cs	
238. *Acetabularia* sp.	Co										
Bryopsidales											
Caulerpaceae											
239. *Caulerpa brachypus* Harv.										Cs	As
240. *Caulerpa cupressoides* (Vahl) Ag.	Co	F	A	D	P		AB	S	Pd	Cs	As
241. *Caulerpa cupressoides* var. *mamillosa* (Mont.) W.v. Bosse		F		D	P					Cs	
242. *Caulerpa fastigiata* Mont.		F									
243. *Caulerpa mexicana* Sond. ex Kütz.		F	A	D	P			S			
244. *Caulerpa microphysa* (W.v. Bosse) J. Feldm.					P	M					
245. *Caulerpa peltata* Lam.		F	A		P	M					As
246. *Caulerpa racemosa* (Forsskål) J. Ag.	Co	F			P	M					As
var. *macrophysa* (Sond. ex Kütz.) W. Taylor		F				M				Cs	
var. *occidentalis* (J. Ag.) Bϕrg.										Cs	
var. *peltata* (Lam.) Eubank	Co				P	M					
247. *Caulerpa serrulata* (Forsskål) J. Ag.	Co	F	A	D	P	M		S		Cs	As
var. *serrulata* f. *spiralis* (W.v. Bosse) Gilbert		F						S		Cs	As
248. *Caulerpa setularioides* (Gmel.) Howe	Co				P	M	AB	S		Cs	As
f. *farlowii* (W.v. Bosse) Bϕrg.										Cs	As

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
249. *Caulerpa taxifolia* (Vahl) C. Ag.	Co	F	A		P	M		S			
250. *Caulerpa ambigua* Okam.					P	M		S		Cs	
251. *Caulerpa webbiana* Mont.										Cs	
252. *Caulerpa* sp.1	Co	F									
253. *Caulerpa* sp.2			A								
254. *Caulerpa* sp.3	Co			D	P		AB	S	Pd		As
Udoteaceae											
255. *Chlorodesmis comosa* Harv. et Bail.	Co	F	A	D	P	M		S		Cs	
256. *Boodleopsis pusilla* (Collins) W. Taylor, Joly et Bernatowicz			A	D	P		AB				
257. *Avrainvillea amadelpha* f. *submersa* Gepp	Co	F	A	D		M	AB	S	Pd	Cs	As
258. *Tydemania gardineri* A. et B. Gepp							AB	S			
259. *Rhipiliopsis reticulata* (van den Hoek) Farghaly	Co			D						Cs	
260. *Rhipilia tomentosa* Kütz.	Co	F		D			AB	S		Cs	As
261. *Udotea argentea* Zanard.	Co	F		D		M	AB	S			
262. *Udotea flabellum* (Ell. et Sol.) Howe	Co			D							
263. *Udotea javensis* (Mont.) A. Gepp et E. Gepp				D		M					
264. *Udotea orientalis* A. Gepp et E. Gepp	Co	F		D		M	AB	S	Pd		
Halimedaceae											
265. *Halimeda gracilis* Harv. ex J. Ag.	Co	F	A	D		M	AB	S	Pd	Cs	As
266. *Halimeda copiosa* Goreau et Graham	Co		A				AB	S		Cs	As
267. *Halimeda macroloba* Decne.		F	A	D	P	M	AB	S			
268. *Halimeda micronesica* Yam.	Co	F	A	D			AB	S	Pd		
269. *Halimeda opuntia* (L.) Lam.	Co	F	A	D	P	M	AB	S			As
270. *Halimeda stuposa* W. Taylor	Co	F	A	D			AB	S		Cs	
271. *Halimeda tuna* (Ell. et Sol.) Lam.	Co	F	A	D			AB	S	Pd	Cs	As
272. *Halimeda* sp.			A	D	P		AB	S			
Codiaceae											
273. *Codium formosanum* Yam.						M					
274. *Codium geppii* O.C. Schmidt								S			
275. *Codium tomentosum* (Huds.) Stackh.						M		S			
276. *Codium* sp.						M					
Bryopsidaceae											
277. *Derbesia marina* (Lyngb.) Solier		F	A			M					
278. *Derbesia* sp.					P						
279. *Halicystis ovalis* (Lyngb.) Aresch. (N.B. - sporophyte stage of *Derbesia marina*)						M					
280. *Bryopsis pennata* Lam.			A	D	P	M					
281. *Trichosolen* sp.								S			
Siphonocladales											
Valoniaceae											
282. *Valonia aegagropila* C. Ag.	Co	F		D		M	AB	S	Pd	Cs	As
283. *Valonia fastigiata* Harv. es J. Ag.				D		M	AB	S	Pd		
284. *Valonia utricularis* (Roth) Ag.	Co			D				S		Cs	
f. *crustacea* Kuck.										Cs	

Table 1. Continued.

Taxon	Island										
	Co	F	A	D	P	M	AB	S	Pd	Cs	As
285. *Ventricaria ventricosa* (J. Ag.) Olsen et West		F	A			M				Cs	
286. *Dictyosphaeria cavernosa* (Forsskål) Bφrg.	Co	F	A	D	P	M	AB	S	Pd	Cs	As
287. *Dictyosphaeria versluysii* W.v. Bosse	Co	F	A	D	P	M	AB	S		Cs	As
288. *Valoniopsis pachynema* (Mart.) Bφrg.	Co			D			AB	S		Cs	As
Siphonocladaceae											
289. *Boergesenia forbessii* (Harv.) J. Feldm.			A			M	AB			Cs	
290. *Siphonocladus rigidus* Howe	Co			D		M			Pd	Cs	As
291. *Siphonocladus tropicus* (P. et H. Crouan) J. Ag.				D				S			
292. *Cladophoropsis herpestica* (Mont.) Howe					P	M					
293. *Cladophoropsis membranacea* (Ag.) Bφrg.						M	AB	S		Cs	
294. *Cladophoropsis modonensis* (Kütz.) Bφrg.					P	M					
295. *Cladophoropsis sundanensis* Reinb.	Co	F	A	D	P	M	AB	S		Cs	
Boodleaceae											
296. *Boodlea composita* (Harv.) Brand	Co			D				S			
297. *Boodlea siamensis* Reinb.				D							
298. *Boodlea struveoides* Howe	Co	F	A	D	P	M	AB	S	Pd	Cs	As
299. *Boodlea* sp.								S			
300. *Struvea anastomosans* (Harv.)Picc. et Grun.	Co	F	A	D	P	M	AB	S			
301. *Struvea elegans* Bφrg.		F			P				Pd		
302. *Struvea* sp.1	Co			D	P						
303. *Struvea* sp.2	Co										
Anadyomnaceae											
304. *Microdictyon okamurae* Setch.	Co	F	A	D		M	AB	S	Pd	Cs	As
305. *Microdictyon montagnei* Harv.	Co							S	Pd	Cs	
306. *Microdictyon* sp.	Co		A					S			
307. *Anadyomene plicata* C. Ag.							AB				
308. *Anadyomene wrightii* Harv. ex J.E. Gray	Co	F	A	D			AB	S	Pd	Cs	As
Cladophoraceae											
309. *Cladophora vagabunda* (L.) van den Hoek						M					
310. *Cladophora laetevirens* (Dillw.) Kütz.	Co				P	M		S		Cs	
311. *Cladophora patentiramea* (Mont.) Kütz.						M		S			
312. *Cladophora socialis* Kütz.		F				M				Cs	
313. *Cladophora* sp.			A			M					
314. *Rhizoclonium implexum* (Dillw.) Kütz.		F				M		S			
(=*Rhizoclonium kerneri*)											
315. *Chaetomorpha ligustica* (Kütz.) Bφrg.	Co					M				Cs	As
316. *Chaetomorpha crassa* (C. Ag.) Kütz.	Co	F				M					As
Chaetophorales											
Ulvellaceae											
317. *Entocladia* sp.		F									
318. *Phaeophila dendroides* (P. and H. Crouan) Batt.					P					Cs	
Ulvales											
Ulvaceae											
319. *Enteromorpha clathrata* (Roth) Grev.	Co		A	D	P	M	AB			Cs	
320. *Enteromorpha flexuosa* (Wulf.) J. Ag.				D							

Table 1. Continued.

Taxon	Island Co	F	A	D	P	M	AB	S	Pd	Cs	As
321. *Enteromorpha intestinalis* (L.) Link ex Nees				D	P	M					
322. *Enteromorpha kylinii* Bliding	Co	F	A	D		M					
323. *Enteromorpha linza* (L.) J. Ag.					P						
324. *Enteromorpha ralfsii* Harv.			A			M					
325. *Enteromorpha* sp.				D							
326. *Ulva rigida* C. Ag.	Co	F	A			M		S			As
SPERMATOPHYTA											
Potamogetonaceae											
1. *Halodule uninervis* (Forsskål) Aschers.	Co		A		P	M				Cs	As
2. *Cymodocea rotundata* Ehrenb. and Hemprich ex Aschers.					P	M				Cs	
3. *Cymodocea serrulata* (R. Br.) Aschers. et Magnus					P	M					
4. *Syringodium isoetifolium* (Aschers.) Dandy	Co		A		P	M					
5. *Thalassodendron ciliatum* (Forsskål) den Hartog	Co	F	A	D	P	M	AB	S	Pd	Cs	As
Hydrocharitaceae											
6. *Thalassia hemprichii* (Ehrenb.) Aschers.	Co	F	A	D		M	AB	S	Pd	Cs	As
7. *Halophila ovalis* (R. Br.) Hooker								S			
f. *hawaiiana* (Doty et Stone) den Hartog				D		M					
8. *Halophila stipulacea* (Forsskål) Aschers.							AB	S			

Table 2. Quantitative characteristic of bottom vegetation of the Seychelles Islands (12 January - 12 March, 1989). In zone heading, "mih" = middle intertidal horizon, "lih" = lower intertidal horizon. "s" = sand, "st" = stones, "c" = corals, "cd" = coral debris and "Hs" = *Halimeda* sand.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
					Cöetivy Island				
N-W	1	mih	s, cd, st	-	6	5	-	*Enteromorpha kylinii*	
N-W	2	mih	s, cd	1308	1327	100	15	*Thalassia hemprichii*	0
N-W	3	mih	s, cd	1768	424	100	10	*Halodule uninervis* +*Thalassia hemprichii*	0.90
N-W	4	mih	s, cd	1332	652	70	6	*Halodule uninervis* +*Thalassia hemprichii*	0
N-W	5	lih	s, cd,	720	1645	80	15	*Thalassodendron -Halimeda+Hypnea*	1.76
N-W	6	lih	s, cd,	3532	6631	100	20	*Thalassodendron-Halimeda -Dictyurus*	0.56
S	7	mih	s, cd,	1872	3306	90	20	*Thalassodendron*	0
S	8	mih	s, cd,	524	470	100	15	*Thalassia-Caulerpa*	0.39
S	9	lih	s, cd,	-	3442	100	10	*Halimeda+Dictyurus+Laurencia*	1.68
S	10	mih	s, cd	692	588	90	15	*Thalassia+Thalassodendron*	0.55
S	11	mih	s, cd,	408	3276	90	20	*Halimeda+Thalassodendron ciliatum-Laurencia*	1.30
N	12	1-2	s, cd,	1040	2490	90	25	*Thalassodendron-Halimeda*	1.73
N-E	13	1	s, cd,	1396	3257	100	25	*Thalassodendron-Halimeda*	0.68
W	14	8	s, cd,	1564	3570	50	30	*Thalassodendron-Caulerpa*	1.00
W	15	1.5	s, cd	-	1300	-	10	*Halemeda*	0.12
W	16	2.5	s, cd	-	429	-	10	*Halemeda*	0.15
W	17	3.5	s, cd	84	1690	-	20	*(Thalassodendron)-Halemeda*	0.36
W	18	3.5	s, cd	-	3400	-	10	*Halemeda*	0.12
W	19	4.0	s, cd	-	5078	-	10	*Halemeda*	0.05
W	20	4.5	s, cd	-	2628	-	10	*Halemeda*	0.15
W	21	3.0	s, cd	1060	3144	-	21	*Thalassodendron ciliatum*	0.38
W	22	4.5	s, cd	336	1474		22	*Thalassodendron-Halimeda*	1.38
W	23	5-6	s, cd	188	1026		25	*Thalassodendron*	0
E	24	mih	s, cd	668	362	80	12	*Thalassia*	0
E	25	mih	s, cd	1516	1820	100	25	*Thalassodendron-Thalassia*	0.25
E	26	lih	s, cd	2532	2930	100	25	*Thalassodendron-Dictyurus*	0.45
E	27	2	s, cd	1416	2645	100	20	*Thalassodendron-Halimeda -Dictyurus*	0.76
E	28	7	s, cd	792	1533	80	20	*Thalassodendron-Halimeda*	0.39
E	29	25	s, cd	28	583	30	12	*(Thalassodendron)-Caulerpa -Halimeda*	1.60
N-E	30	3.0	s, cd	788	1700	100	18	*(Thalassodendron)-Caulerpa- -Halimeda*	0.70
N-E	31	6	s, cd	-	1221	95	10	*Halimeda+Boodlea+Microdictycon*	2.47
N-E	32	7	s, cd	74C	1809	50	23	*Thalassodendron-Halimeda*	0.42
N-E	33	17	s, cd	468	1640			*Thalassodendron-Halimeda*	0.42
N-E	34	25	s, cd	832	2319	10	27	*Thalassodendron-Halimeda*	0.21

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
N-E	35	mih	s, cd	1096	1061	80	15	*Thalassia*	0
N-E	36	mih	s, cd	492	2501	100	16	*Thalassodendron+Thalassia*	0.67
N-E	37	lih	s, cd	3004	3360	100	17	*Thalassodendron-Dictyurus*	0.37
N-E	38	32	s, cd	-	-	15	25	*Avrainvillea-Halimeda*	-
S	39	5	s, cd	868	2087	50	20	*Thalassodendron*	0.62
S	40	10	s, cd	684	1164	40	21	*Thalassodendron*	0.33
S	41	12	s, cd	28	418	40	18	*(Thalassodendron)-Halimeda -Microdictyon*	1.55
W	42	mih	f, s	1840	1401	100	23	*Thalassia+Halodule*	2.46
W	43	mih	f, s	3240	5051	100	40	*Syringodium+Thalassodendron*	1.24
W	44	mih	f, s	3336	2592	100	30	*Halodule+Thalassia*	1.73
W	45	lih	cd	1960	3994	100	20	*Thalassodendron*	0
W	46	3	s, c	732	2040	40	24	*Thalassodendron*	0.44
W	47	3	s, c	692	1736	40	25	*Thalassodendron*	0
W	48	6	s, c	1088	2467	30	27	*Thalassodendron*	0
W	49	7	s, cb	376	668	20	24	*Thalassodendron*	0
W	50	17	s, cb	120	681	20	21	*Thalassodendron-Dictyurus*	1.12
W	51	1.5	s	1080	2322	100	18	*Thalassodendron*	0
					Farquhar Island				
S	52	mih	s	732	541	40	15	*Thalassodendron+Thalassia*	0.45
S	53	lih	s, cd	888	897	70	13	*Thalassodendron*	0.12
S	54	lih	s, cd	-	1660	60	1-2	*Boodlea*	0
S	55	lih	s, cd	128	720	80	15	*(Thalassodendron)-Caulerpa -Boodlea*	2.26
S	56	6	s, cd	-	261	5	3	*Caulerpa*	0.08
S	57	15	s, cd	-	266	50	1-2	*Microdictyon+Boodlea*	0.18
S	58	25	s, cd	-	180	60	1-2	*Microdictyon*	0
N	59	mih	b, r	1068	1014	5	8	*Thalassodendron-Boodlea*	0.85
N	60	lih	s, cd	-	1360	80	1-2	*Boodlea struveoides*	0
N	61	lih	s, cd	-	1273	50	1-2	*Microdictyon+Boodlea*	1.24
N-E	62	6-7	s, cd	-	354	5	2	*Caulerpa+Boodlea*	0.24
N-E	63	12h	d, c	-	130	20	2	*Caulerpa*	0
N-E	64	22	d, c	-	340	20	2-5	*Udotea+Caulerpa*	0.52
Lagoon	65	3	d, c	-	520	1	2	*Caulerpa cupressoides*	0
Lagoon	66	7	d, cd	-	440	3	2	*Caulerpa cupressoides*	0
Lagoon	67	9	d, cd	-	236	5-7	2	*Halimeda opuntia +Caulerpa cupressoides*	0.95
Lagoon	68	2.5	s, cd	472	1289	80	28	*Thalassodendron*	0.10
Lagoon	69	8	s	-	-	0	-	-	-
Lagoon	70	12	s	-	-	0	-	-	-
Lagoon	71	3	s, cd	918	4563	90	35	*Thalassodendron-Halimeda*	0.90
Lagoon	72	1.2	s, cd	664	2652	100	24	*Thalassodendron-Halimeda*	1.11
Lagoon	73	1.0	s, cd	1004	2614	100	28	*Thalassodendron-Caulerpa*	0.20

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
Lagoon	74	8	s, cd	-	-	0	-	-	-
Lagoon	75	10	s, c	-	-	0	-	-	-
Lagoon	76	12	l, c	-	-	0	-	-	-
Lagoon	77	6	s, c	-	-	1	-	*Heterosiphonia*	-
Lagoon	78	3-4	s, cd	446	2258	100	30	*Thalassodendron-Halimeda*	0.93
Lagoon	79	2	s, cd	868	2736	100	126	*Thalassodendron-Thalassia*	0.23
Lagoon	80	1	s, cd	848	1446	100	20	*Thalassodendron-Caulerpa*	0.54
N	81	mih	s, cd	584	1210	100	14	*Thalassodendron-Caulerpa*	1.49
N	82	lih	s, cd	1352	1850	100	12	*Thalassodendron-Valonia +Microdictyon*	1.05
N	83	lih	s, cd	1160	1567	100	12	*Thalassodendron-Valonia*	0.88
N	84	4	cd	120	2880	100	50	*Sargassum ilicifolium*	0
S	85	1	cd	-	-	70	25	*Thalassodendron*	-
					Aldabra Island				
E	86	12	s, cd	-	2828	60	10	*Halimeda*	0
E	87	25	s, cd	-	451	20	10	*Halimeda*	0
E	88	12	Halimeda s		-	-	30	10 *Halimeda*	-
Lagoon	89	lih	s, cd	518	1259	70	18	*(Thalassodendron)-Laurencia +Halimeda*	1.87
Lagoon	90	lih	s, cd	376	579	70	12	*Thalassia+Laurencia*	0.70
Lagoon	91	lih	s, cd	284	5467	80	25	*Thalassia+Halimeda*	1.24
Lagoon	92	mih	s, cd	584	1465	80	17	*Thalassia+Halimeda*	1.44
Lagoon	93	5	s, cd	960	2050	100	24	*Thalassia*	0.32
W	94	1	s, black c	1004	2718	100	24	*Thalassodendron*	0.19
W	95	lih	s, black c	960	1970	100	15	*Thalassodendron+Thalassia -Halimeda*	1.49
W	96	lih	s, black c	768	2089	100	17	*Thalassodendron+Thalassia -Halimeda*	1.20
W	97	lih	s, black c	-	-	100	20	*Thalassodendron+Halimeda*	-
					Desroches Island				
N-W	98	mih	s	788	662	80	20	*Thalassodendron+Thalassia -Halimeda*	
N-W	99	mih	s, cd	1476	2400	100	30	*Thalassodendron-Halimeda -Haloplegma*	1.20
N-W	100	lih	s, cd	1456	3864	100	42	*Thalassodendron*	0.12
N-W	101	2	s, cd	-	-	70	40	*Thalassodendron*	-
N-W	102	6	s, cd	648	2164	100	42	*Thalassodendron*	0
N-W	103	12	s, cd	408	1572	50	25	*Thalassodendron-Halimeda +Udotea*	1.43
N-W	104	4-5	s, cd	-	1700	25	10	*Halimeda*	0

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
N-W	105	30	s, cd	-	-	5	20	*Thalassodendron-Halimeda*	-
N-W	106	mih	s	1526	1420	80	20	*Thalassia+Thalassodendron -Halimeda*	1.34
N-W	107	mih	s	1324	2471	100	20	*Thalassia+Thalassodendron -Halimeda*	1.60
N-W	108	lih	s, cd	1232	4441	100	30	*Thalassodendron-Thalassia-Halimeda*	
N-W	109	lih	s, cd	2600	5095	100	40	*Thalassodendron*	
S-E	110	13	cd	-	-	40	40	*Thalassodendron-Halimeda*	-
S-E	111	30	Hs	-	-	5	10	*Halimeda*	-
W	112	2	s, cd	1282	4126	90	38	*Thalassodendron*	0
W	113	7	c	-	1185	50	10	*Halimeda*	0
W	114	8	c	1468	3768	50	40	*Thalassodendron*	0
W	115	12	s, c	-	-	15	10	*Halimeda*	-
S	116	mih	s	1396	596	100	6	*Thalassia+Thalassodendron -Udotea*	1.30
S	117	mih	s	1432	563	100	6	*Thalassodendron-Thalassia-Udotea*	1.62
S	118	lih	s, cd	1672	1146	70	15	*Thalassodendron-Thalassia*	1.24
S	119	lih	cd	1732	2244	70	25	*Thalassodendron-Halimeda +Dictyurus*	1.57
S	120	5-6	cd	1780	3269	60	33	*Thalassodendron*	0
S	121	20	s	4	929	30	10	*Halimeda*	0
S	122	35-38	s	-	-	10	10	*Halimeda*	0
S-E	123	50	s, cd	-	-	1	10	*Halimeda*	-
S-E	124	1.5-3	cd	764	2016	50	30	*Thalassodendron*	0.23
S-E	125	6	cd	1192	2048	40	30	*Thalassodendron*	0.14
S-E	126	15	cd	-	40	10		*Halimeda*	0.13
S-E	127	16-30	s	-	888	5	10	*Halimeda*	0
S-E	128	42	s	-	-	1	5	*Caulerpa+Halimeda*	-
S-E	129	30	s	-	-	1	10	*Caulerpa+Halimeda*	-
S-E	130	13	s	-	-	1	30	*Thalassodendron-Halimeda*	-
S-E	131	20	s	-	-	1	10	*Halimeda*	-
S-E	132	50	s	-	-	1	10	*Halimeda+Caulerpa*	-
S	133	mih	s	2312	2222	100	20	*Cymodocea+Thalassodendron +Syringodium*	1.33
S	134	lih	s, cd	1776	4260	100	30	*Thalassodendron*	0
S	135	lih	s, cd	2184	4100	100	40	*Thalassodendron*	0
S	136	1.2	cd	1244	9800	100	60	*Sargassum*	0
S	137	1.5-3	cd	516	6800	90	60	*Sargassum*	0.16
S	138	9	cd	8	621	10	40	*Sargassum*	0.21
S	139	20	cd	-	-	1	3	*Hypnea, Laurencia*	-
S-W	140	mih	s	784	1250	80	16	*Syringodium+Cymodocea +Thalassia*	1.20
S-W	141	lih	s	2448	2898	100	30	*Syringodium+Cymodocea*	0.30
S-W	142	lih	s	1356	2153	100	30	*Cymodocea-Syringodium*	0.76
S-W	143	lih	s, cd	1112	3776	40	50	*Sargassum cristaefolium-Padina* sp.	0.80
S-W	144	0.5	s, cd	656	5858	80	60	*Sargassum -Turbinaria*	
S-E	145	5	s, cd	248	1010	40	40	*Sargassum*	0

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
S-E	146	17	s	-	-	1	30	*Thalassodendron-Dictyota*	-
S-E	147	20	s	-	-	0.5	-	*Chlorodesmis*	-
S-E	148	5	cd	128	1480	50	50	*Sargassum*	0
S-E	149	8	cd	96	840	60	60	*Sargassum*	0
S-E	150	8	cd	-	-	5	-	*Chlorodesmis*	-
					Mahé (Cerf)				
W	151	lih	s, cd	948	4465	80	20	*Sargassum*	0.10
W	152	lih	s, cd	332	5700	100	30	*Sargassum-Jania+Gelidiella*	
W	153	0.5	cd	376	5600	100	30	*Sargassum*	0
W	154	mih	s	111	1396	70	10	*Cymodocea*	0
					Mahé (Saint Anne) Island				
E	155	mih	s	600	3304	70	30	*Sargassum poslycystum* *Turbinaria ornata*	0.78
E	156	lih	s, cd	708	6500	100	20	*Sargassum cristaefolium*	0
E	157	0.5	cd	268	5292	100	30	*Sargassum-Turbinaria*	0.55
E	158	mih	rock	8	2935	40	20	*Garcilaria crassa*	0.22
E	159	mih	silty s	624	342	40	10	*Cymodocea+Halodule*	0.75
					Mahé Island				
N-E	160	mih	s, cd	236	6426	80	30	(*Sargassum*)-*Gracilaria*	1.10
N-E	161	mih	s, cd	204	6619	90	30	(*Sargassum*)-*Gracilaria*	
N-E	162	lih	s, cd	216	5216	100	30	*Sargassum*	1.49
N-E	163	lih	s, cd	328	4240	100	30	*Sargassum*	0
N-E	164	3-6	cd	-	1400	30	10	*Turbinaria decurrens*	0
N-E	165	15-16	cd	-	-	-	-	*Chlorodesmis*	-
N-E	166	3-7	cd	-	-	30	40	*Sargassum*	-
N-E	167	13-14	cd	28	2016	20	30	*Sargassum*	0.39
					Anonyme Island				
N-E	168	0.5	rock	720	7480	80	30	*Sargassum*	0
N-E	169	0.5	cd	456	6340	100	40	*Sargassum*	0
N-E	170	0.5	cd	517	6933	100	20	*Sargassum*	0
N-E	171	0.5	cd	152	3320	100	20	*Sargassum*	0
N-E	172	0.2	cd	112	2900	100	20	*Sargassum*	0
N-E	173	2-11	cd	-	-	0	-	crustose algae	-
N-E	174	15	cd	-	-	1	-	*Lobophora+Dasya*	-
N-E	175	22	cd	-	-	-	-	-	-

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
					Mahé Island				
S-E	176	0.4	s, cd	284	1816	60	30	*Sargassum-Amphiroa-Caulerpa*	-
S-E	177	0.5	s, cd	500	2965	60	30	*Sargassum*	0.42
S-E	178	0.5	s, cd	116	5471	70	30	*Sargassum-Amphiroa*	0.84
S-E	179	0.5	s, cd	525	3986	90	15	*Sargassum*	0.11
N-W	180	lih	s, cd	992	1675	60	20	*Thalassodendron-Hypnea*	1.50
N-W	181	lih	s, cd	500	2503	70	18	*Turbinaria ornata-Hypnea pannosa*	1.10
N-W	182	lih	s, cd	316	3638	100	30	*Sargassum turbinarioides-Hypnea*	0.27
N-E	183	31	s	-	-	-	single	*Champia parvula*	-
N-E	184	22	s, rock	-	-	-	single	*Dictyota bartayresii+Hypnea*	-
S-E	185	30	s	-	-	-	-	*Dictyota+Gracilaria cylindrica* -	
S-E	186	10-15	cd	-	-	-	-	crustose algae	-
					African Banks				
S-E	187	15	cd	324	1206	50	32	*Thalassodendron*	0
S-E	188	10	cd	248	440	80	30	*Thalassodendron*	0.29
S-E	189	1.5	cd	540	1400	90	27	*Thalassodendron*	0.31
S-E	189a	6-7	cd	570	2215	80	26	*Thalassodendron*	0.15
S-E	190	17	cd	-	-	-	-	*Thalassodendron*	-
S-E	191	25	cd	-	-	-	-	*Thalassodendron*	-
S-E	192	18	cd	-	-	-	-	*Thalassodendron*	-
S-E	193	31	cd	-	-	-	-	*Thalassodendron*	-
S-E	194	17-19	cd	448	2240	50	42	*Thalassodendron*	0
S-E	195	0.6	s, cd	1412	2517	100	18	*Thalassodendron*	0
S-E	196	0.5	s, cd	716	2057	100	20	*Thalassodendron-Valonia-Thalassia*	1.63
S-E	197	0.5	s, cd	1096	2125	100	25	*Thalassodendron-Thalassia -Microdictyon*	1.50
S-E	198	0.5	s, cd	1268	2602	100	25	*Thalassodendron*	0.12
N-W	199	1.5	s	-	330	15	8	*Dasya+Halimeda*	0.90
S-E	200	37	s	-	-	-	-	*Halimeda*	-
					Saint Joseph Islands (D'Arros, Ressource)				
S	201	mih	s, cd	-	1003	50	10	*Thalassia hemprichii*	0
S	202	mih	s, cd	1312	1018	50	11	*Thalassodendron-Thalassia -Dictyosphaeria*	1.22
S	203	lih	cd	608	430	50	10	*Thalassodendron-Thalassia*	0.94
S	204	lih	cd	-	1150	30	-	*Cladophoropsis+Valonia*	0.66
S	205	30	cd	-	-	-	-		-
S	206	16	cd	-	-	-	-		-
S	207	3-5	cd	-	-	1-5	-	*Halimeda*	-
S	208	1	cd	-	-	20	-	*Thalassodendron*	-

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
S	209	37	cd	-	-	-	-	*Halimeda*	-
S	210	23	cd	-	-	-	-	*Halimeda*	-
S	211	37	cd	-	-	-	-	*Halimeda*	-
S	212	0.5	s	1264	1637	80	30	*Thalassodendron*	
S	213	lih	s	1148	1005	50	20	*Thalassodendron-Microdictyon*	1.14
S	214	lih	s	1416	2265	80	30	*Thalassodendron*	0.79
S	215	0.3	s	1384	2956	60	30	*Thalassodendron*	0.26
S	216	25	c	-	-	1	-	Crustose algae	-
S	217	18	c	-	-	1	-	*Halimeda*	-
S	218	7-8	c	-	-	5	-	*Halimeda*	-
E	219	10-12	c	6	-	5	-	*Thalassodendron-Udotea*	-
N-E	220	1.-1.5	cd	740	1680	50	40	*Thalassodendron*	0
N-E	221	5-6	cd	-	-	10	10	*Halimeda*	-
S	222	20	s, c	-	-	-	-	*Boodlea struveoides*	-
S	223	30	s, c	-	-	-	-	*Halimeda+Caulerpa*	-
					Providence Atoll				
S	224	1.5	cd	924	3940	100	30	*Thalassodendron*	0
S	225	13	cd	784	2302	90	30	*Thalassodendron*	0.11
S	226	23	cd	2876	3911	30	30	*Thalassodendron*	0.27
W	227	1.5	cd	-	-	80	30	*Thalassodendron-Microdictyon*	-
W	228	23	cd	-	-	30	20	*Thalassodendron-Microdictyon*	-
S-W	229	32	cd	-	-	-	-	*Halimeda*	-
S-W	230	3-6	cd	-	-	-	-	*Thalassodendron*	-
					Cosmoledo Islands				
Lagoon	231	0.4	s	392	1439	100	20	*Thalassodendron-Halimeda +Laurencia*	1.79
Lagoon	232	0.4	s	916	2616	100	25	*Thalassodendron-Halimeda*	1.07
Lagoon	233	0.4	s	716	5547	100	35	*Thalassodendron-Halimeda*	1.01
Lagoon	234	0.4	s	688	1995	100	30	*Thalassodendron-Laurencia*	1.10
Lagoon	235	0.2	s	172	280	80	10	*Thalassia+Cymodocea-Jania*	1.67
Lagoon	236	0.1	s	2592	192	60	6	*Halodule uniervis*	0
E	237	4-5	cd	-	-	-	-	*Laurencia-Caulerpa*	-
E	238	10	cd	-	-	-	-	*Caulerpa*	-
E	239	20	cd	-	-	-	-	*Avrainvillea amadelpha-Halimeda*	-
N	240	mih	cd	-	-	20	-	*Caulerpa+Halimeda+Boodlea*	-
E	241	40	cd	-	-	-	-	*Halimeda+Microdictyon*	-
S	242	10	cd	-	-	-	-	*Turbinaria+Galaxaura+Halimeda*	-
E	243	42	cd	-	-	-	-	*Halimeda*	-
Lagoon	244	1.0	s, c	1644	3855	90	20	*Thalassodendron-Halimeda*	1.06
Lagoon	245	0.5	s, c	980	1513	60	20	*Thalassodendron-Halimeda*	0.50

Table 2. Continued.

Coast	Station	Depth in m, zone	Substrate	# of species·m^{-2}	Biomass, in g·m^{-2}	% cover	Growth height	Association	H
					Astove Island				
S	246	lih	s	604	2558	100	25	(*Thalassia*)+*Caulerpa*+*Amphiroa*	2.12
S	247	lih	s	1360	2422	100	30	*Thalassodendron-Laurencia* +*Thalassia*	2.53
S	248	lih	c	1540	1643	100	30	*Thalassodendron-Laurencia* +*Thalassia*	1.34
S	249	lih	c	2100	3227	100	20	*Thalassodendron-Laurencia*	1.46
Lagoon	250	0.3	s	-	-	20	15	*Thalassia-Caulerpa*+*Acanthophora*	-
S	251	1.5	c	1032	1380	40	8	*Halimeda*+*Caulerpa* sp.	-
S	252	5	c	-	-	20	8	*Halimeda*+*Caulerpa* sp.	-
S	253	30	c	-	1768	10	8	*Halimeda*+*Caulerpa* sp.	1.02
S-W	254	50	s, c	-	-	80	12	*Caulerpa* sp.+*Halimeda copiosa*	-
S	255	50	s, c	-	-	60	12	*Caulerpa* sp.+*Halimeda copiosa*	-
S	256	5-40	s, c	-	-	80-20	20	*Avrainvillea*+*Halimeda* +*Caulerpa* sp.	-

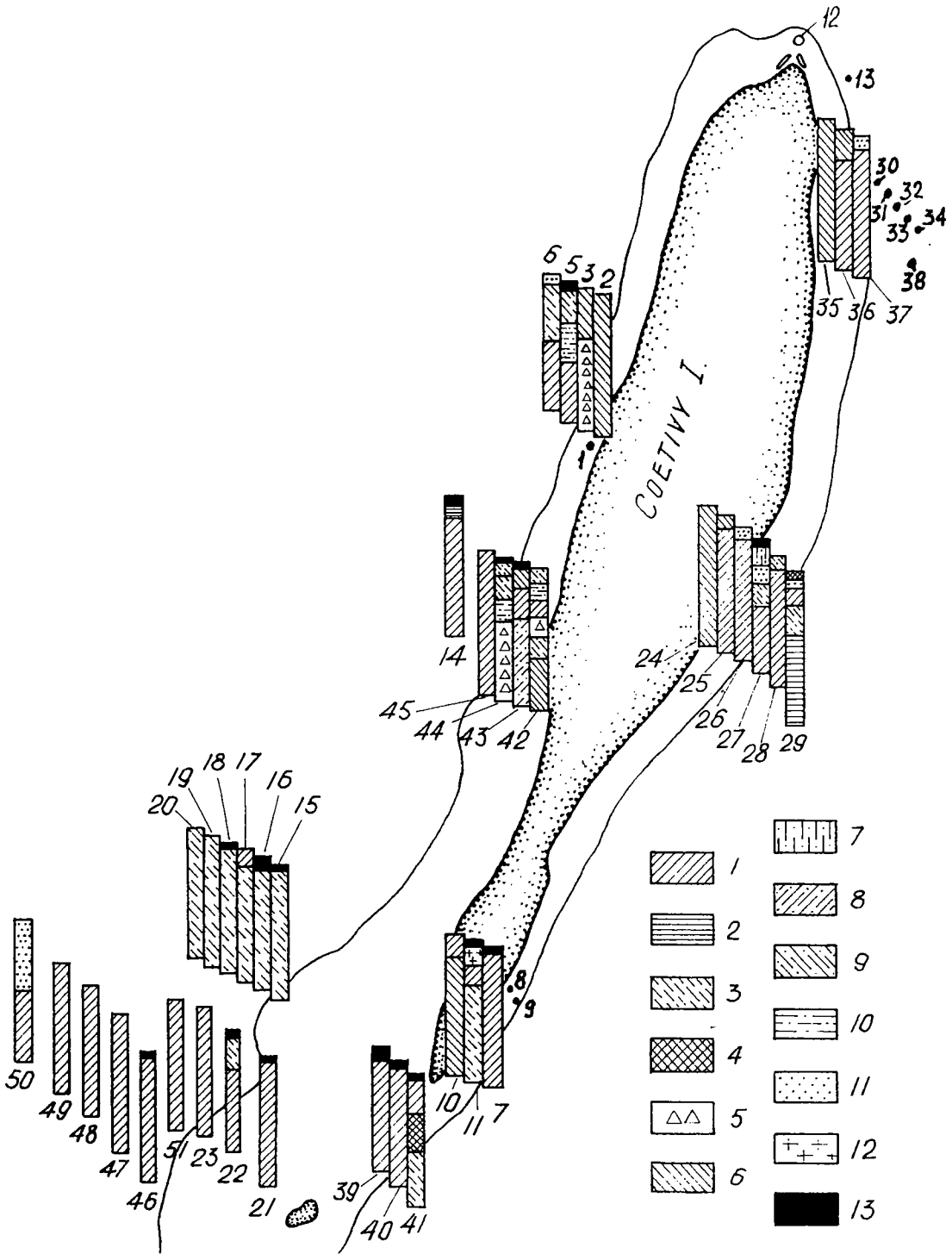


Figure 1. Location of stations and species ratios in phytocoenoses of Cöetivy Island. 1 - *Thalassodendron ciliatum*, 2 - *Caulerpa cupressoides*, 3 - *Halimeda* species, 4 - *Microdictyon okamurai*, 5 - *Halodule uninervis*, 6 - *Thalassia hemprichii*, 7 - *Gelidiella myrioclada*, 8 - *Syringodium isoetifolium*, 9 - *Jania adhaerens*, 10 - *Hypnea pannosa*, 11 - *Dictyurus purpurascens*, 12 - *Laurencia* species, 13 - other minor species.

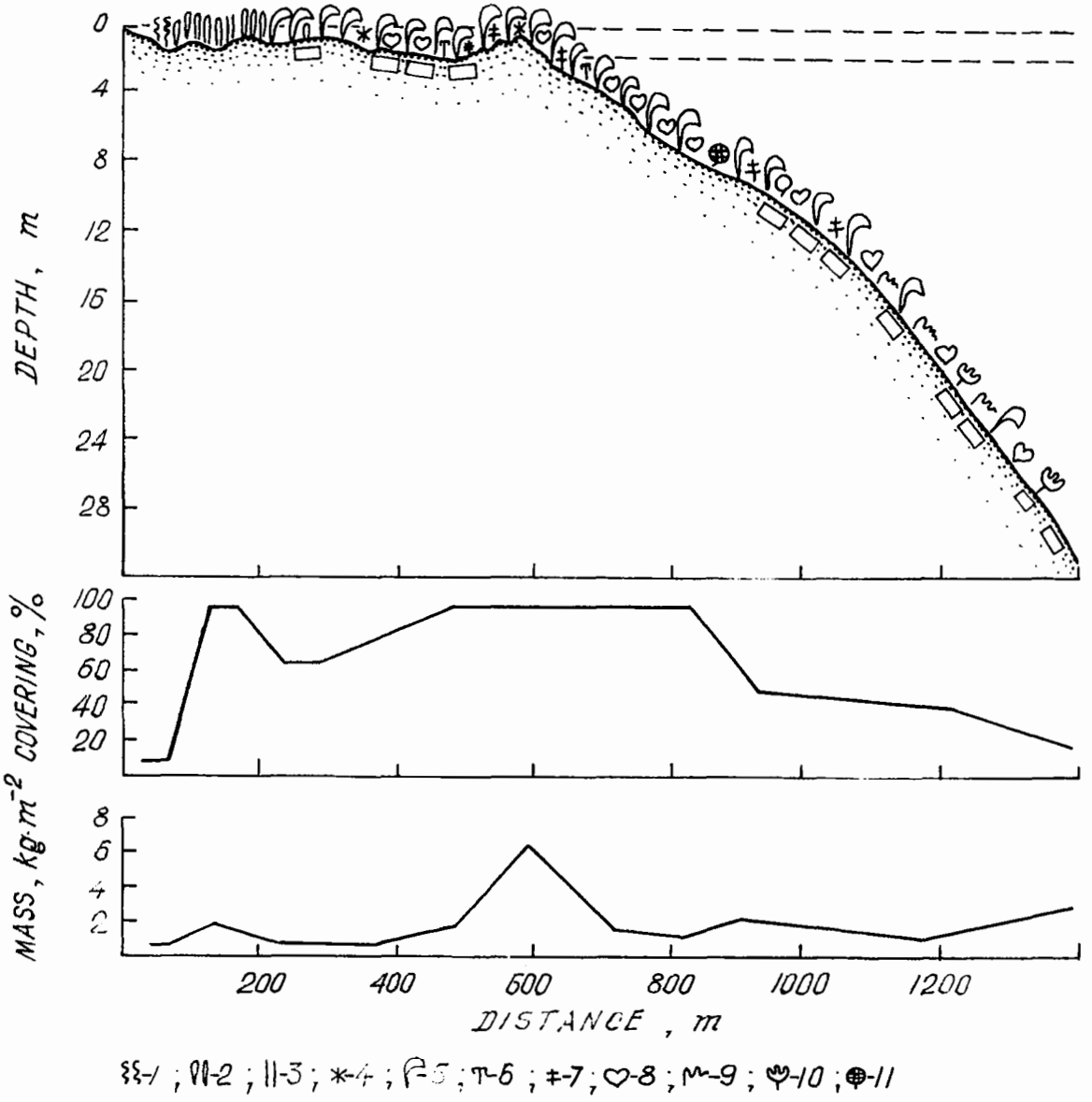


Figure 2. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at Cöetivy Island. 1 - *Enteromorpha*, 2 - *Thalassia hemprichii*, 3 - *Halodule uninervis*, 4 - *Porolithon gardineri*, 5 - *Thalassodendron ciliatum*, 6 - *Laurencia* species, 7 - *Dictyurus purpurascens*, 8 - *Halimeda* species, 9 - *Caulerpa* species, 10 - *Avrainvillea amadelpha*, 11 - *Boodlea struveoides*.

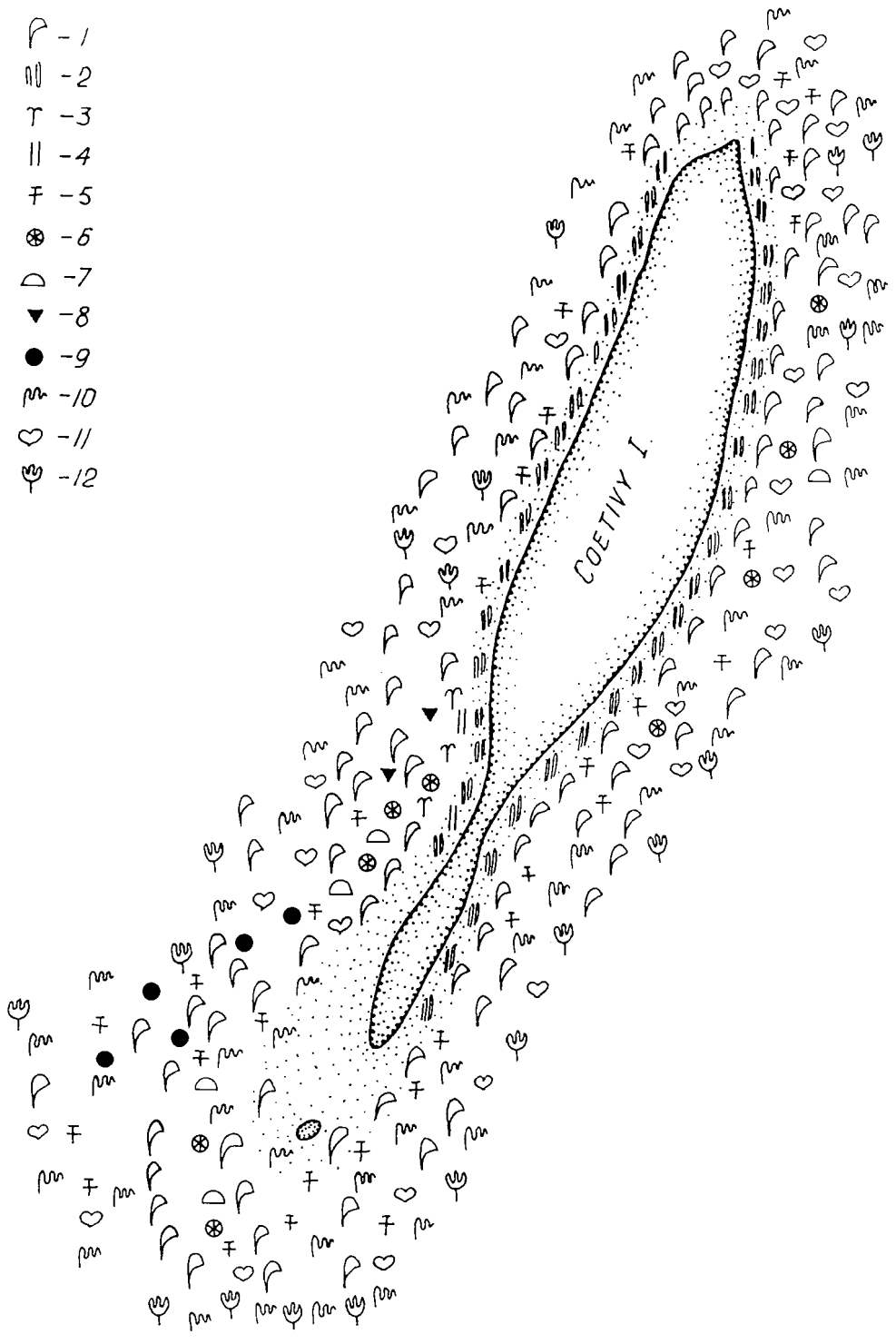


Figure 3. Horizontal distribution of algal and seagrass species of Cöetivy Island. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Syringodium isoetifolium*, 4 - *Halodule uninervis*, 5 - *Dictyurus purpurascens*, 6 - *Jania adhaerens*, 7 - crustose species, * - *Turbinaria ornata*, 9 - *Lobophora variegata*, 10 - *Caulerpa* species, 11 - *Halimeda* species, 12 - *Avrainvillea amadelpha* f. *submersa*.

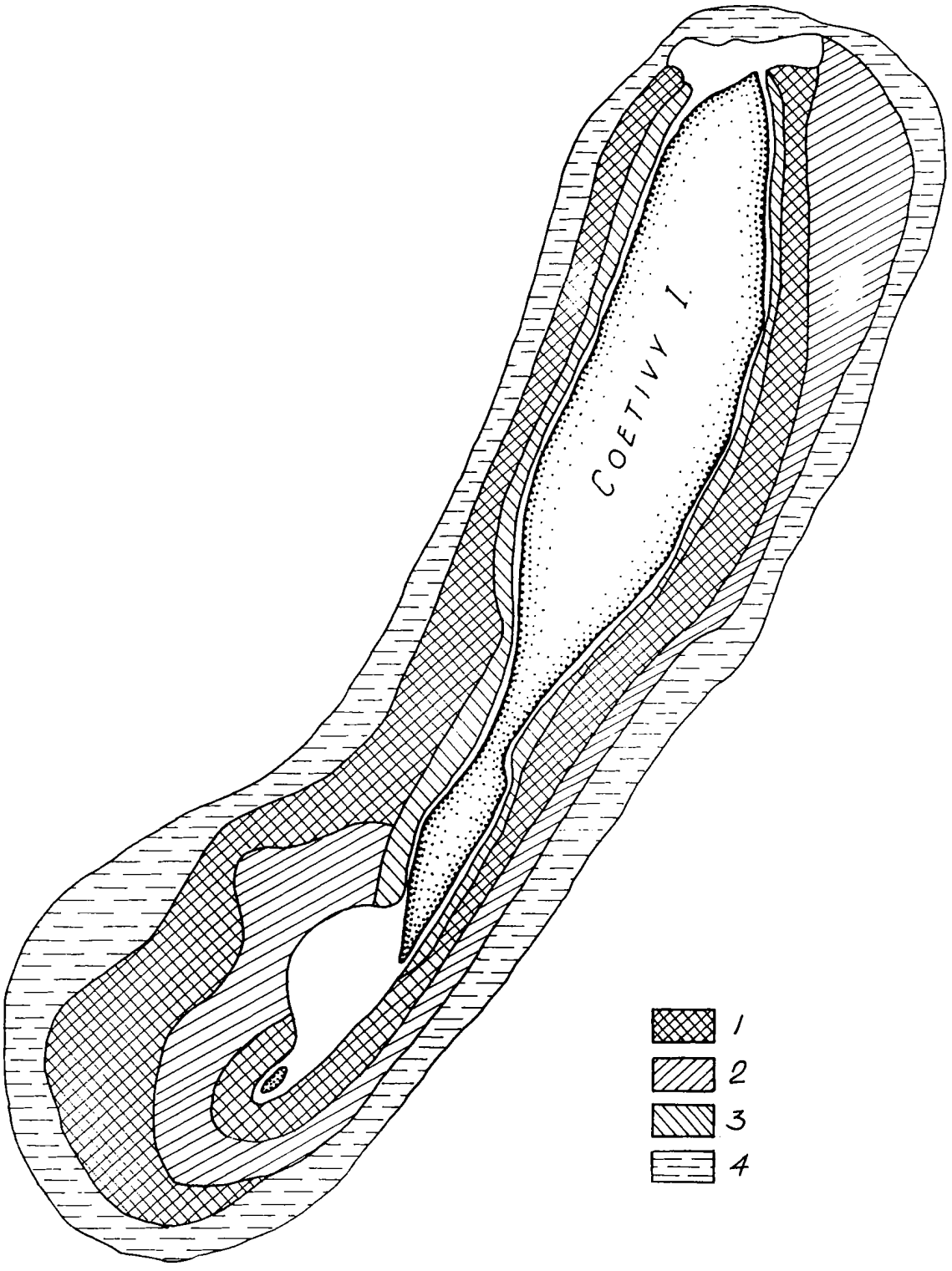


Figure 4. Distribution of macrophyte biomass at Cöetivy Island (in $g \cdot m^{-2}$): 1 - 3096±393; 2 - 1597±306; 3 - 878±306; 4 - 557±157.

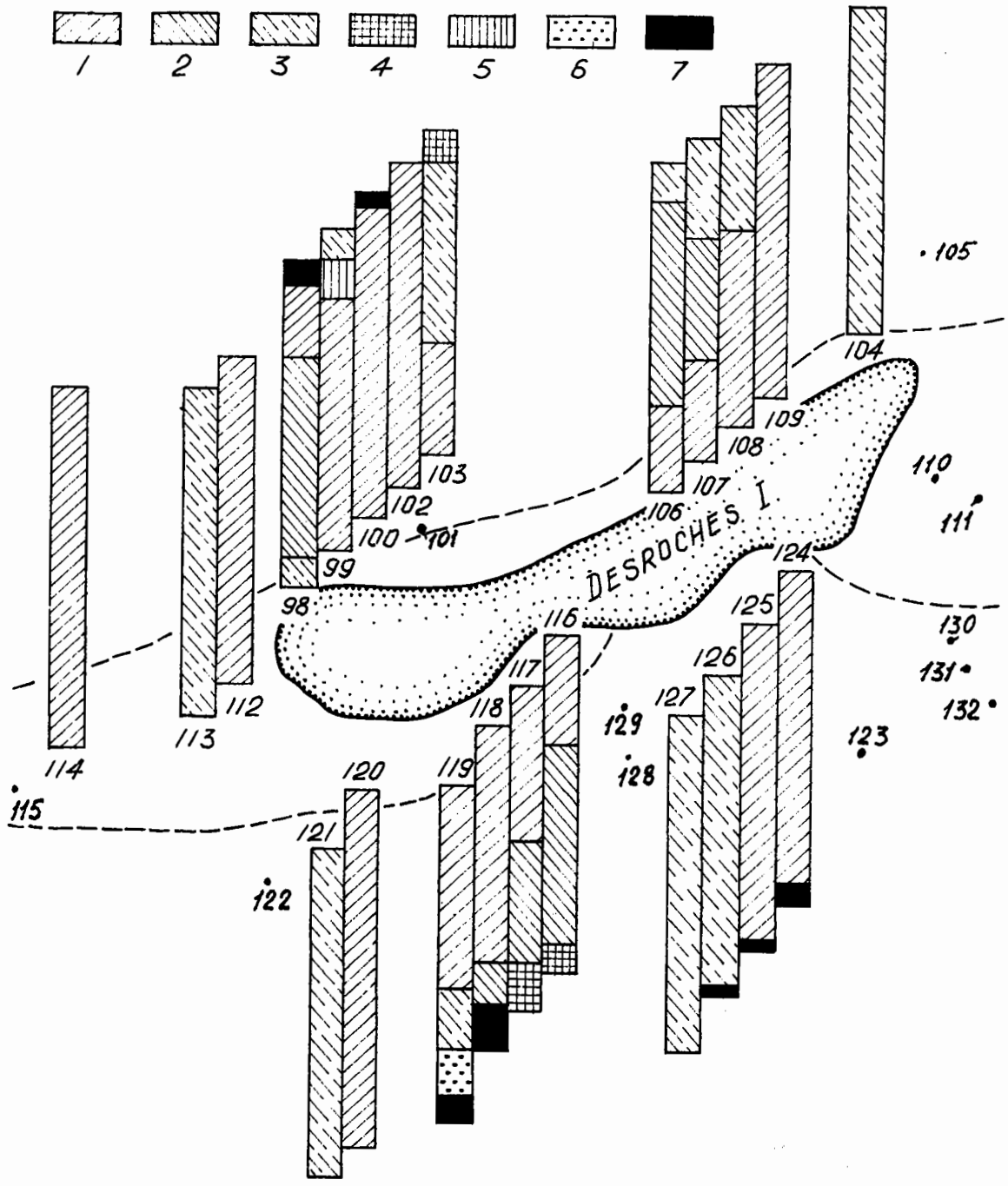


Figure 5. Location of stations and species ratios in phytocoenoses at Desroches Island. 1 - *Thalassia*, 3 - *Halimeda*, 4 - *Udotea*, 5 - *Haloplgema*, 6 - *Dictyurus*, 7 - other minor species.

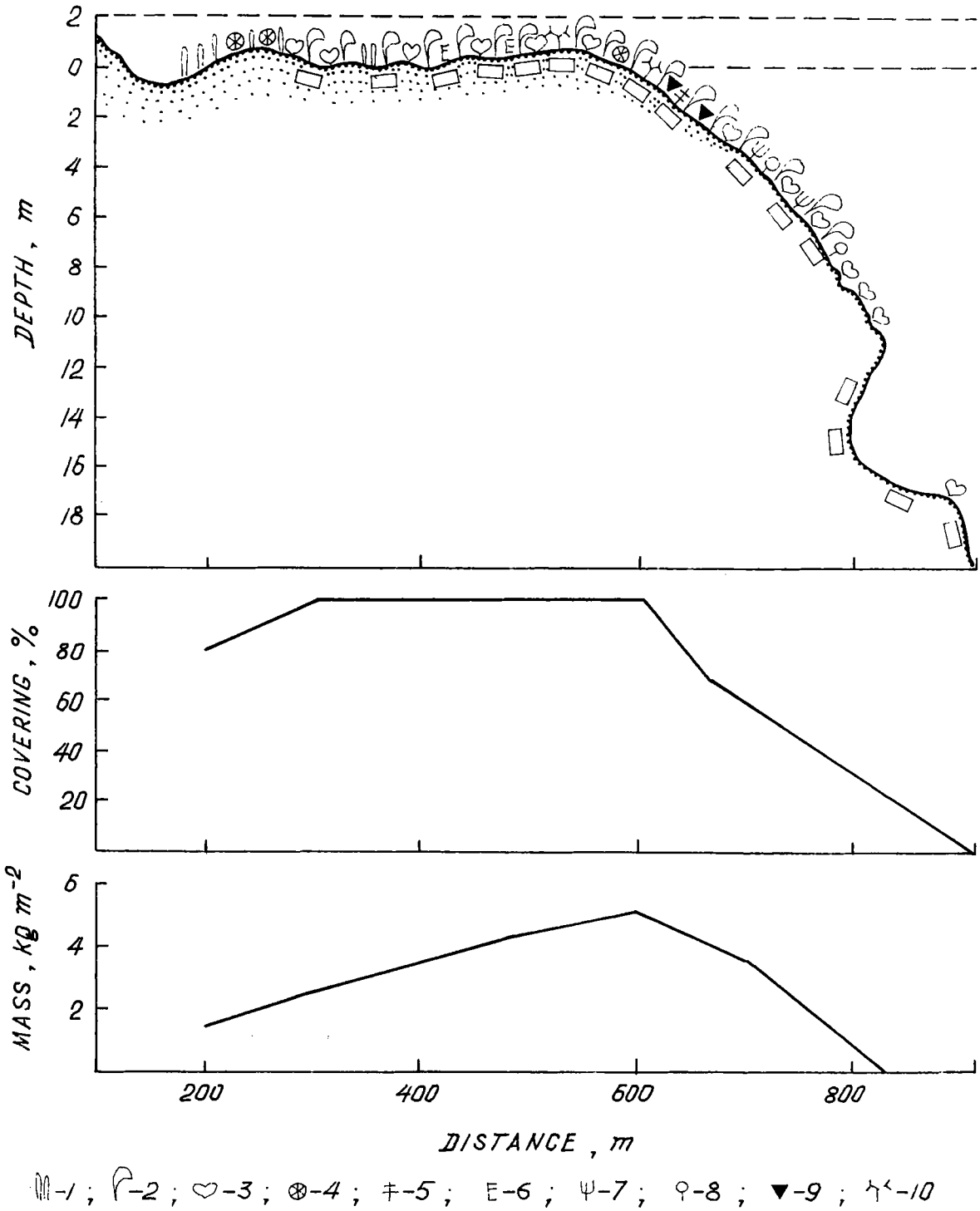


Figure 6. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at Desroches Island. 1 - *Thalassia hemprichii*, 2 - *Thalassodendron ciliatum*, 3 - *Halimeda* species, 4 - *Jania adhaerens*, 5 - *Dictyurus purpurascens*, 6 - *Dasya mollis*, 7 - *Microdictyon okamurai*, 8 - *Rhipilia tomentosa*, 9 - *Turbinaria ornata*, 10 - *Tricleocarpa oblongata*.

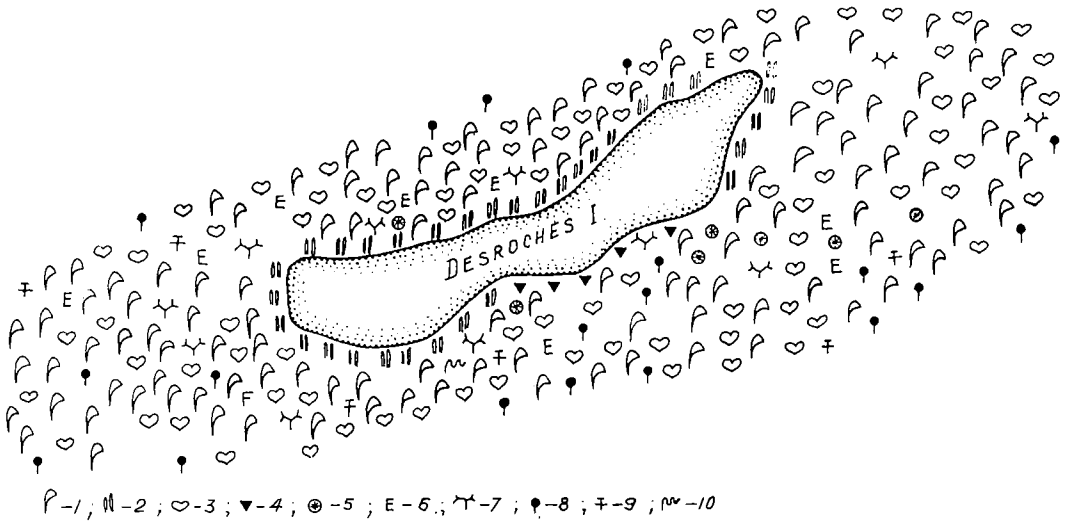


Figure 7. Horizontal distribution of algal and seagrass species at Desroches Island. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Halimeda*, 4 - *Turbinaria ornata*, 5 - *Jania* species, 6 - *Dasya mollis*, 7 - *Galaxaura* species, 8 - *Udotea argentea*, 9 - *Dictyurus purpurascens*, 10 - *Caulerpa* species.

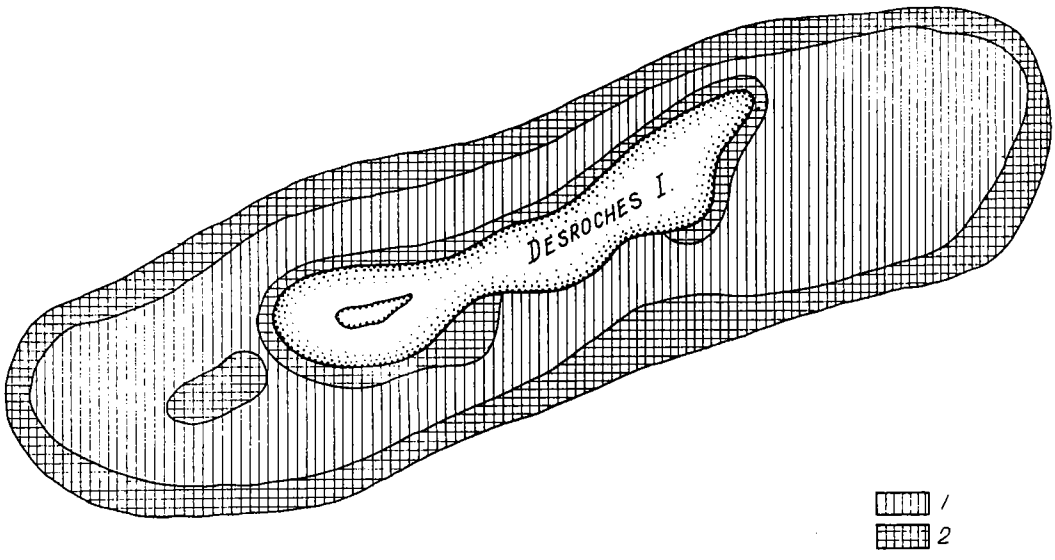


Figure 8. Distibution of macrophyte biomass at Desroches Island (in $g \cdot m^{-2}$): 1 - 3158±680; 2 - 1241±462.

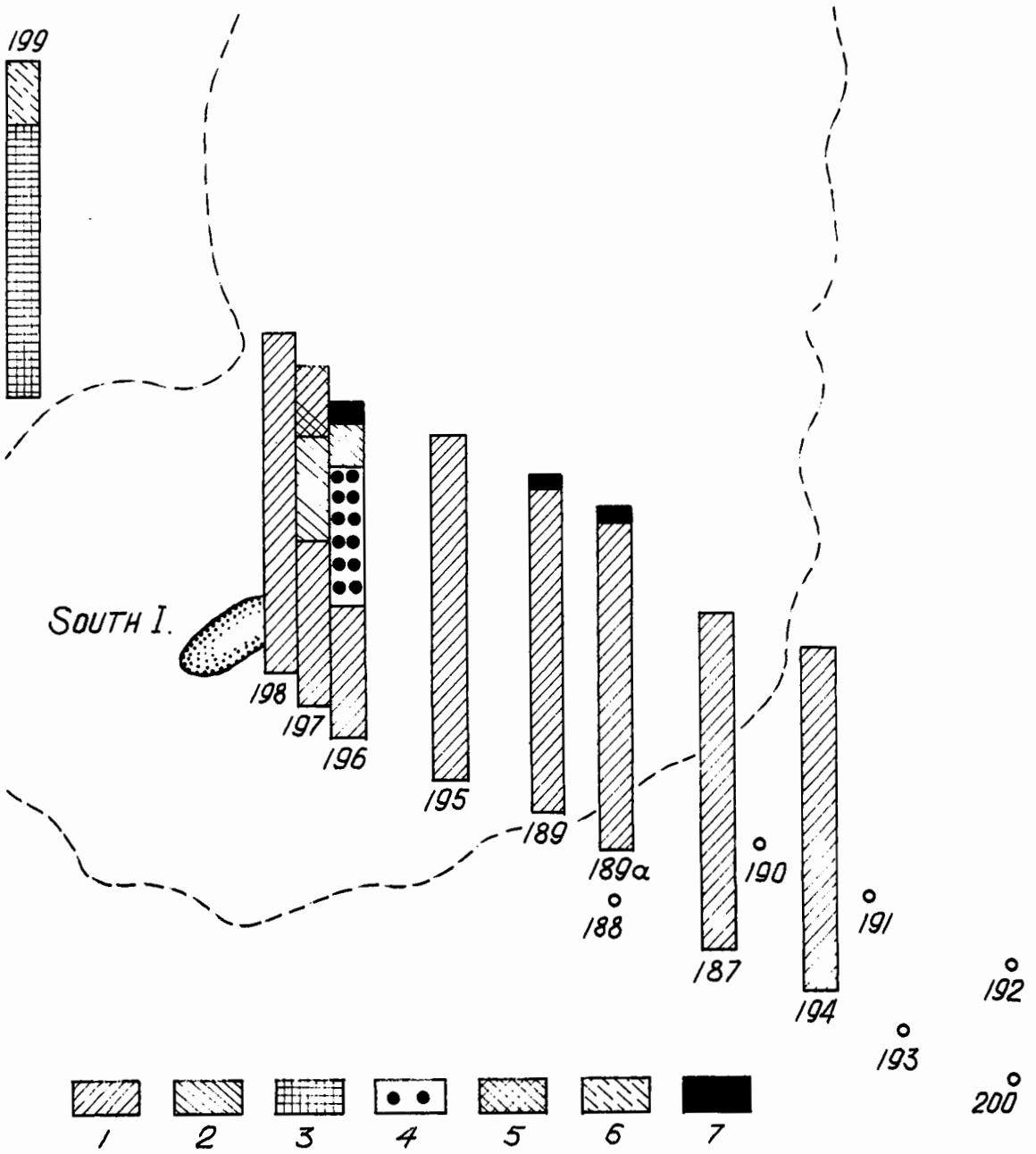


Figure 9. Location of stations and species ratios in phytocoenoses at African Banks (South Island). 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Dasya mollis*, 4 - *Valonia fastigiata*, 5 - *Microdictyon okamurai*, 6 - *Halimeda* species, 7 - other minor species.

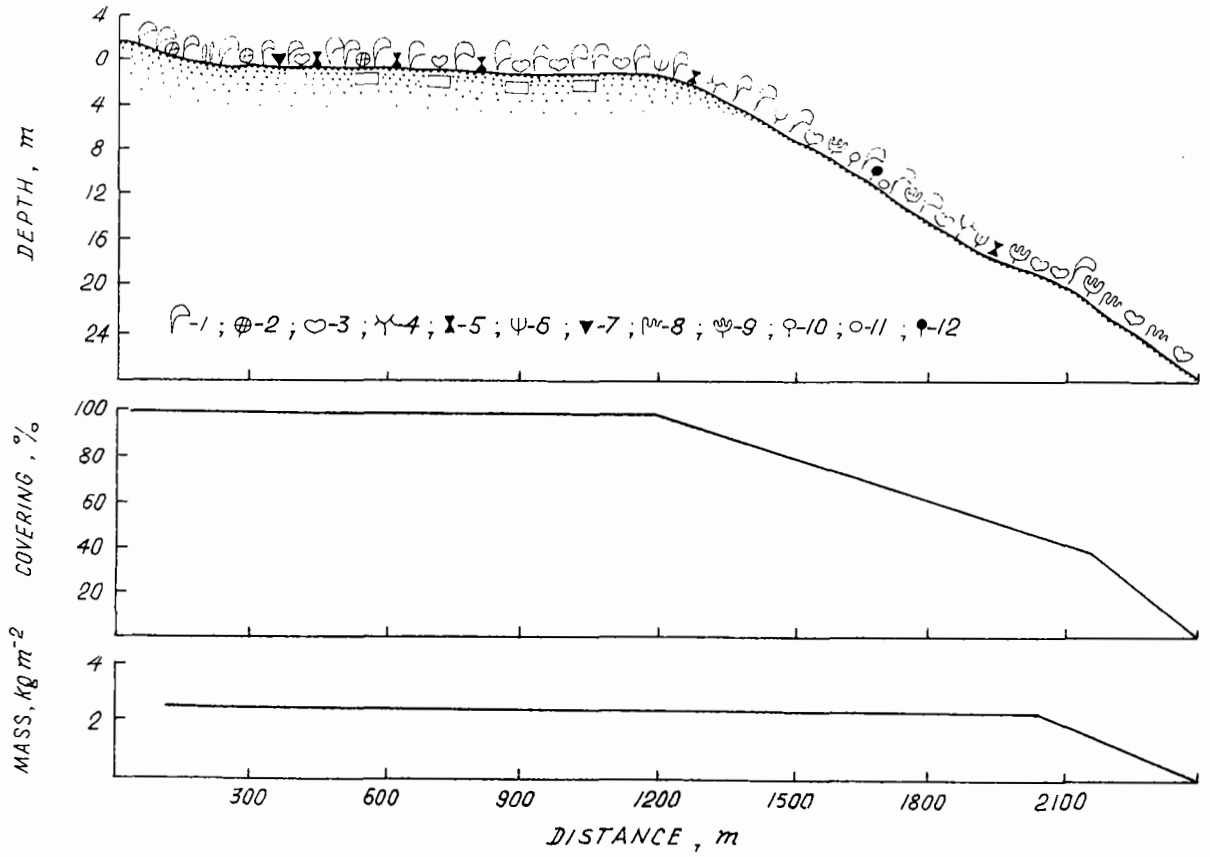


Figure 10. Vertical distribution of dominant species, biomass and percent cover of algae and segrasses at African Banks. 1 - *Thalassodendron ciliatum*, 2 - *Boodlea struveoides*, 3 - *Halimeda* species, 4 - *Tricleocarpa oblongata*, 5 - *Haloplegma duperreyi*, 6 - *Microdictyon okamurai*, 7 - *Turbinaria oblongata*, 8 - *Caulerpa* species, 9 - *Avrainvillea amadelpha*, 10 - *Rhipilia tomentosa*, 11 - *Lobophora variegata*, 12 - *Udotea argentea*.

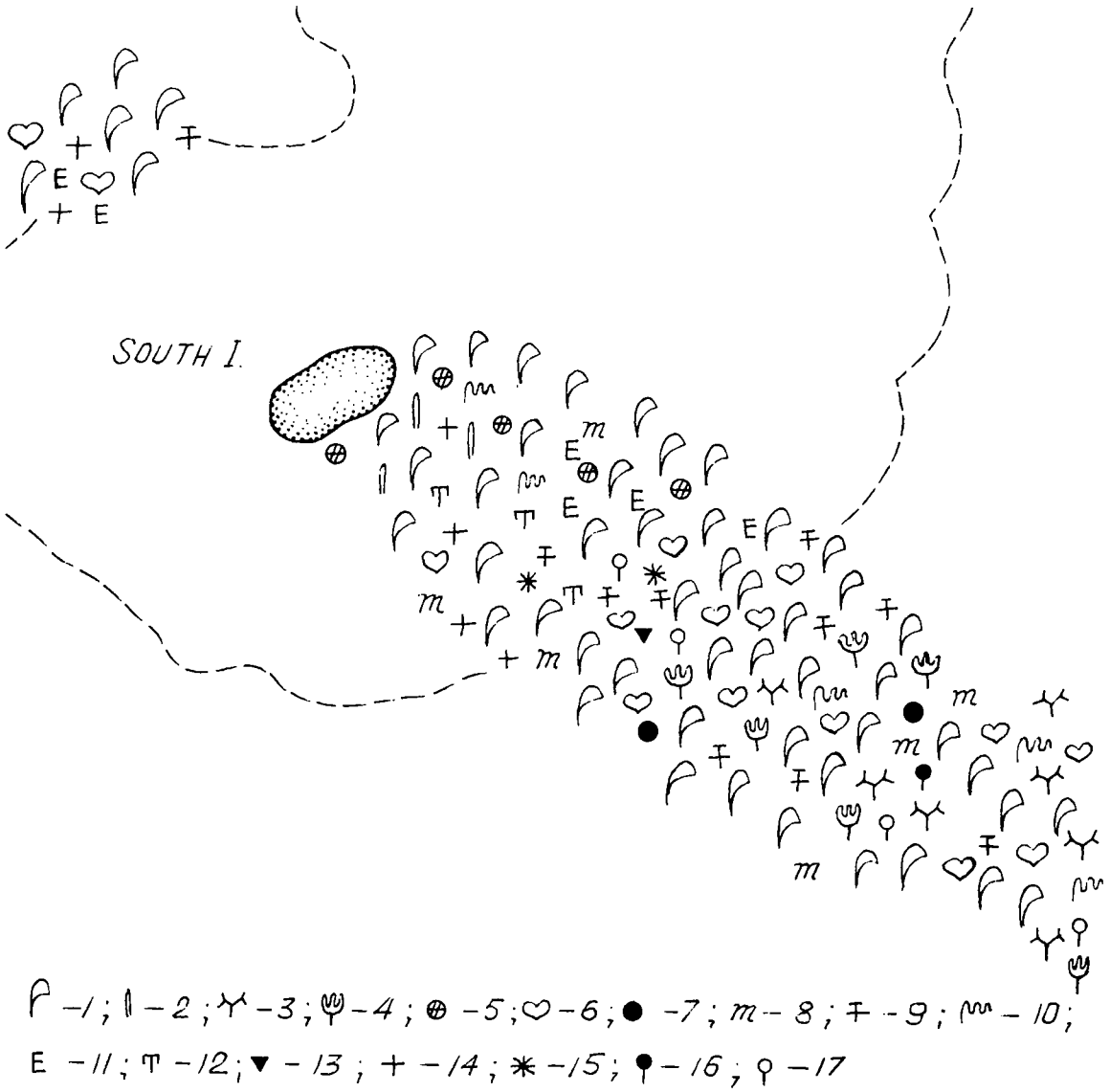


Figure 11. Horizontal distribution of algal and seagrass species of African Banks. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Tricleocarpa oblongata*, 4 - *Avrainvillea amadelpha*, 5 - *Boodlea struveoides*, 6 - *Halimeda* species, 7 - *Lobophora variegata*, 8 - *Valonia fastigiata*, 9 - *Dictyurus purpurascens* , 10 - *Caulerpa* species, 11 - *Dasya mollis*, 12 - *Laurencia* species, 13 - *Turbinaria ornata*, 14 - *Dictyosphaeria* species, 15 - *Porolithon gardineri*, 16 - *Udotea argentea*, 17 - *Rhipilia tomentosa*.

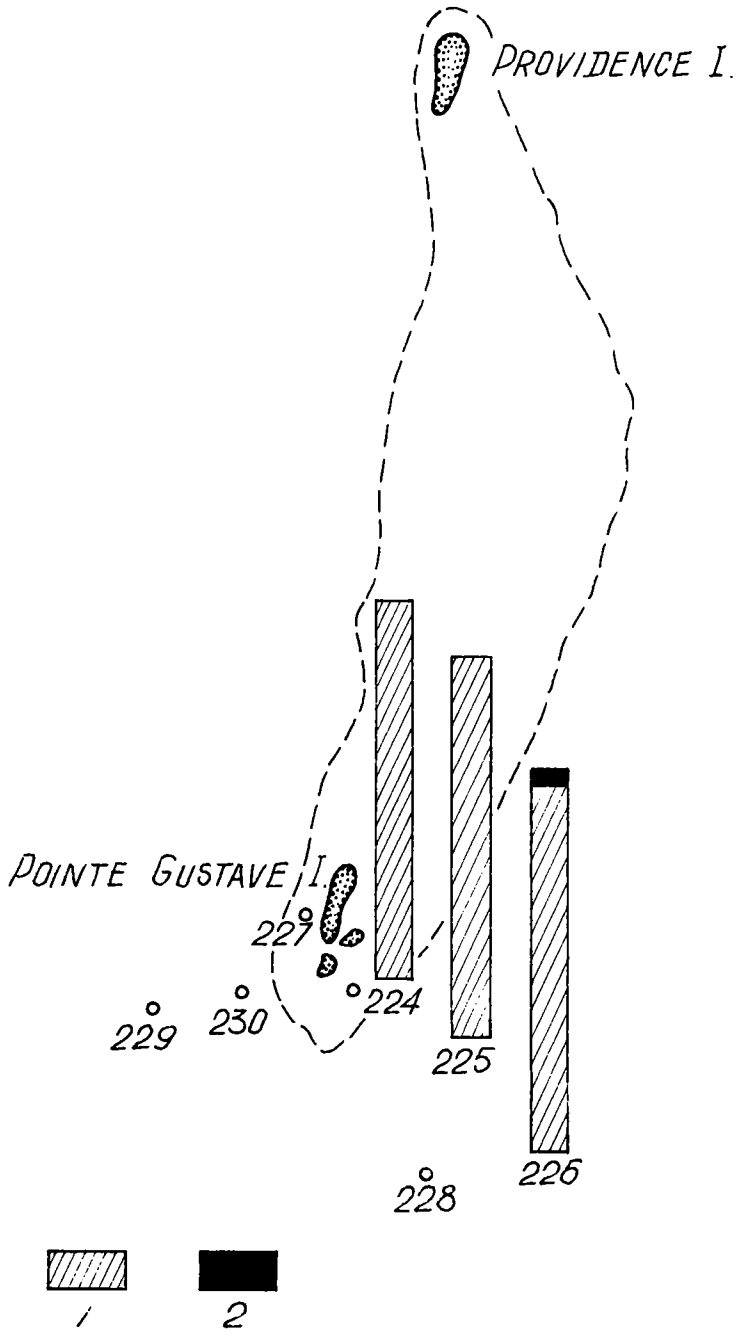
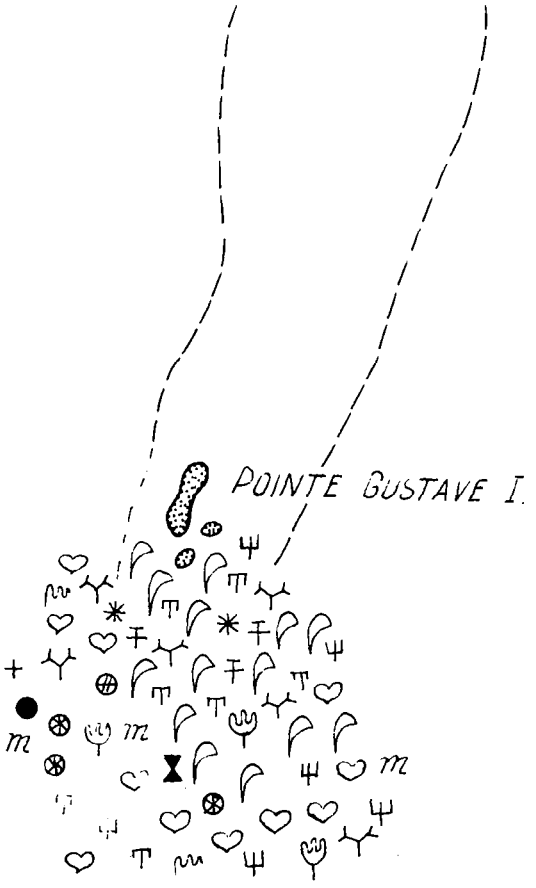


Figure 12. Location of stations and species ratios of phytocoenoses at Providence Island. 1 - *Thalassodendron ciliatum*, 2 - other species.



1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 -
11 - 12 - 13 - 14 - 15

Figure 13. Horizontal distribution of algal and seagrass species at Providence Island. 1 - *Thalassodendron ciliatum*, 2 - *Halimeda* species, 3 - *Caulerpa* species, 4 - *Laurencia* species, 5 - *Dictyurus purpurascens*, 6 - *Tricleocarpa oblongata*, 7 - *Microdictyon montagnei*, 8 - *Avrainvillea amadelpha*, 9 - *Jania* species, 10 - *Valonia fastigiata* 11 - *Lobophora variegata*, 12 - *Dictyosphaeria cavernosa*, 13 - *Haloplegma duperreyi*, 14 - *Boodlea struveoides*, 15 - *Porolithon gardineri*.

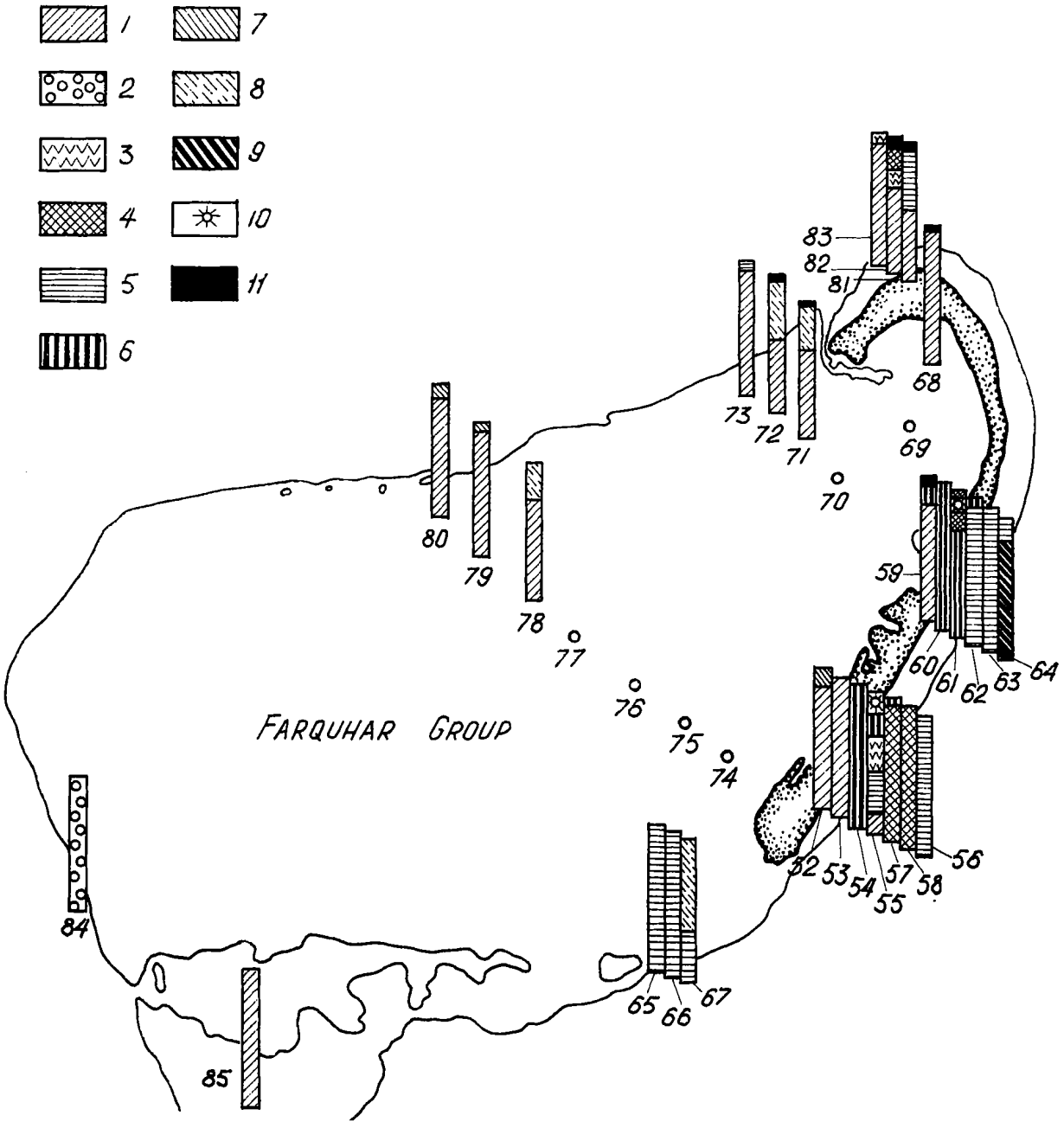


Figure 14. Location of stations and species ratios in phytocoenoses at Farquhar Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Sargassum ilicifolium*, 3 - *Valonia aegagropila*, 4 - *Microdictyon okamurai*, 5 - *Caulerpa cupressoides*, 6 - *Boodlea struveoides*, 7 - *Thalassia hemprichii*, 8 - *Halimeda opuntia*, 9 - *Udotea*, 10 - *Dictyosphaeria cavernosa*, 11 - other minor species.

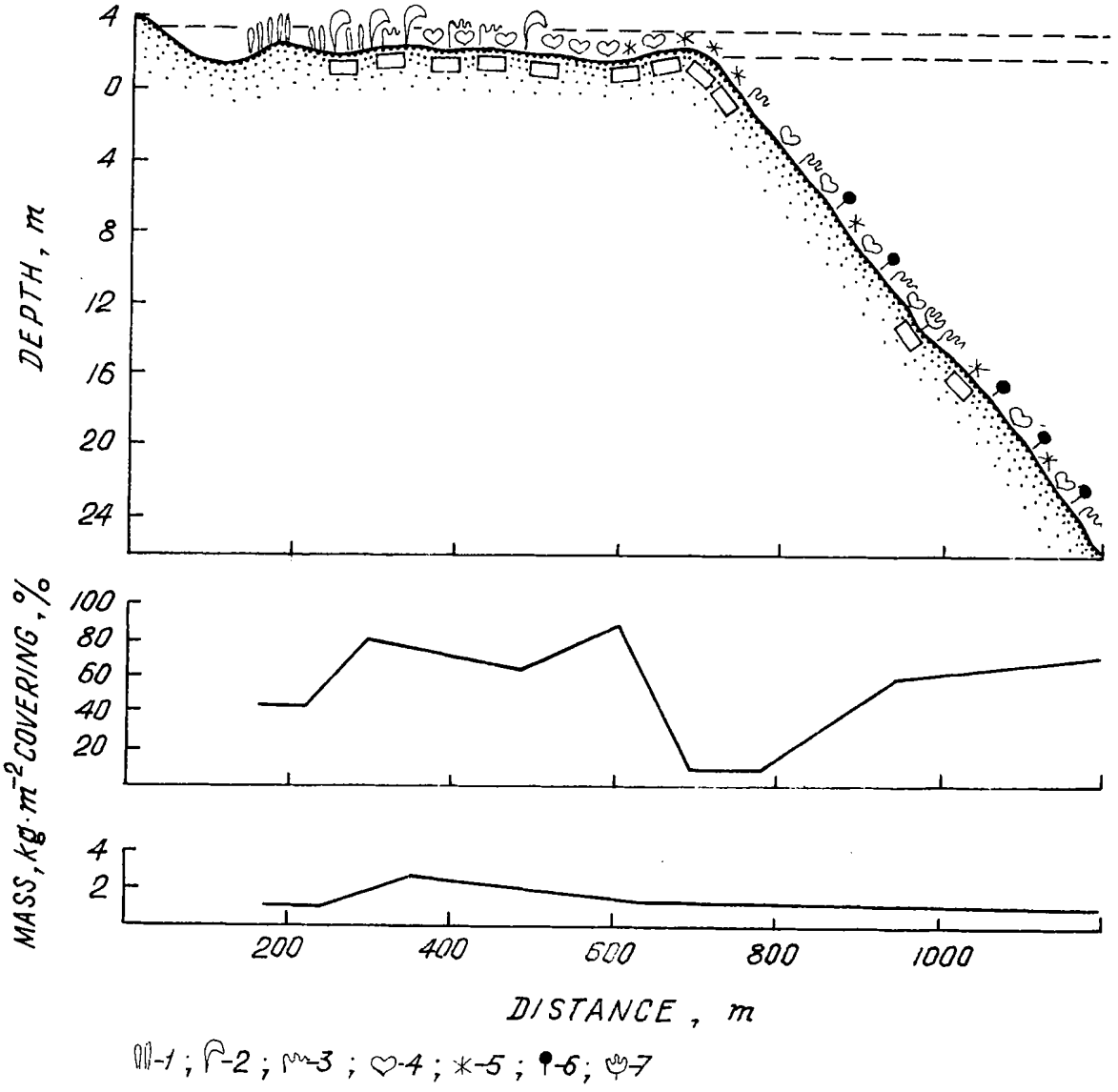


Figure 15. Vertical distributon of dominant species, biomass and percent cover of algae and seagrasses at Farquhar Atoll. 1 - *Thalassia hemprichii*, 2 - *Thalassodendron ciliatum*, 3 - *Caulerpa cupressoides*, 4 - *Halimeda opuntia*, 5 - *Porolithon gardineri*, 6 - *Udotea*, 7 - *Avrainvillea amadelpha*.

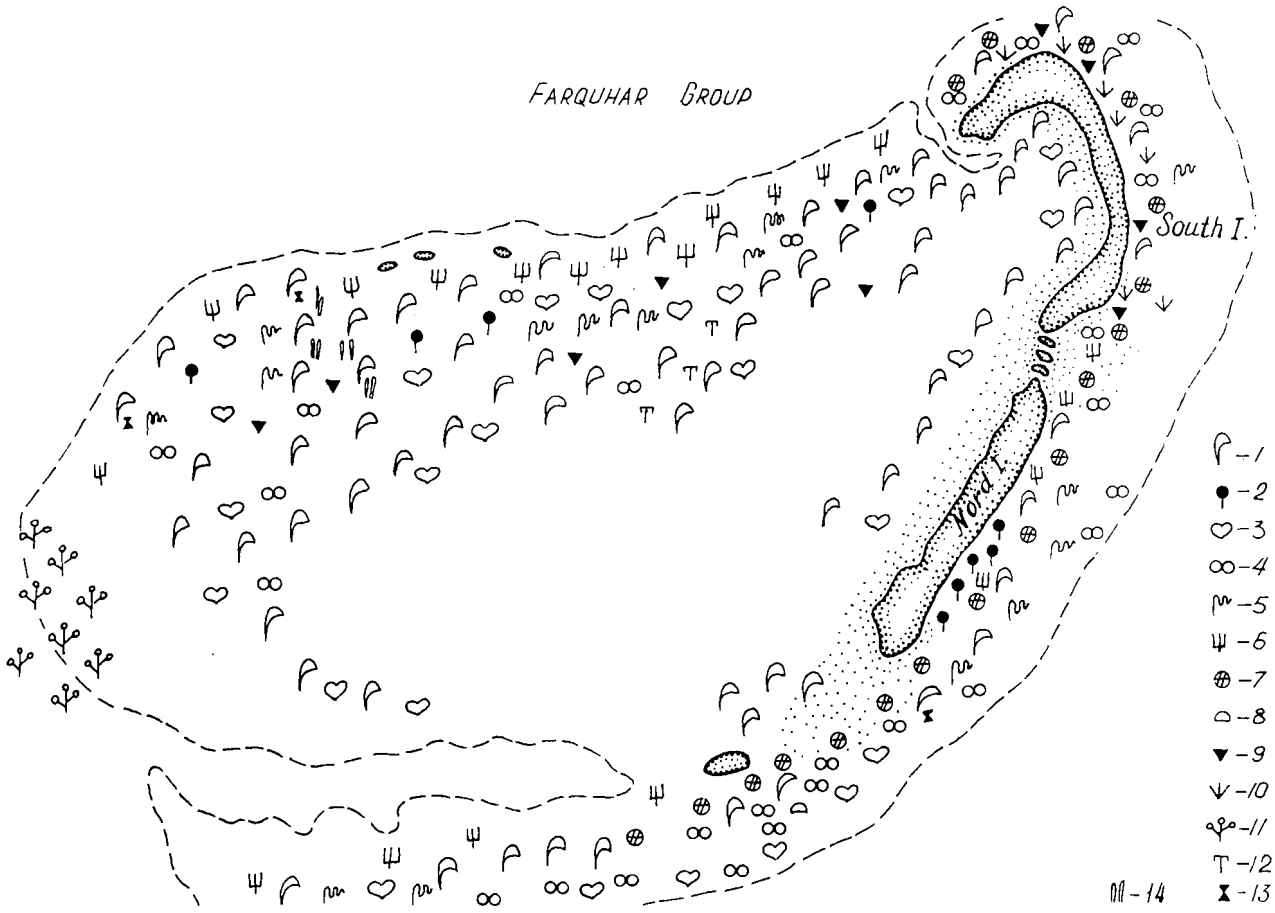


Figure 16. Horizontal distribution of algal and seagrass species at Farquhar Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Udotea*, 3 - *Halimeda* species, 4 - *Valonia aegagropila*, 5 - *Caulerpa cupressoides*, 6 - *Microdictyon okamurai*, 7 - *Boodlea struveoides*, 8 - crustose species, 9 - *Turbinaria ornata*, 10 - *Liagora ceranoides*, 11 - *Sargassum ilicifolium*, 12 - *Laurencia* species, 13 - *Haloplegma duperreyi*, 14 - *Thalassia hemprichii*.

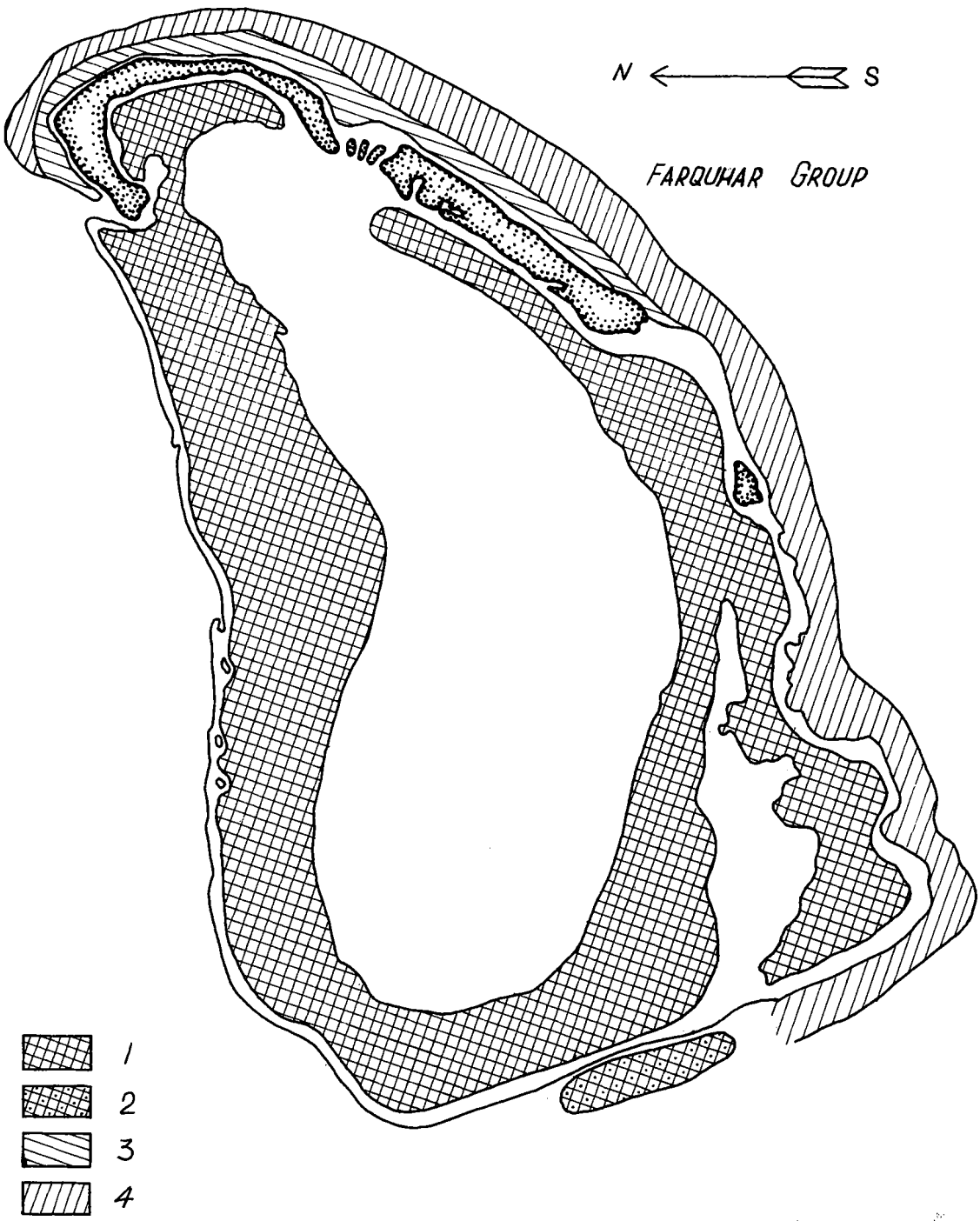


Figure 17. Distribution of macrophyte biomass at Farquhar Atoll (in $g \cdot m^{2-2}$): 1 - 2508±994; 2 - 2880; 3 - 1209±300; 4 - 303±94.

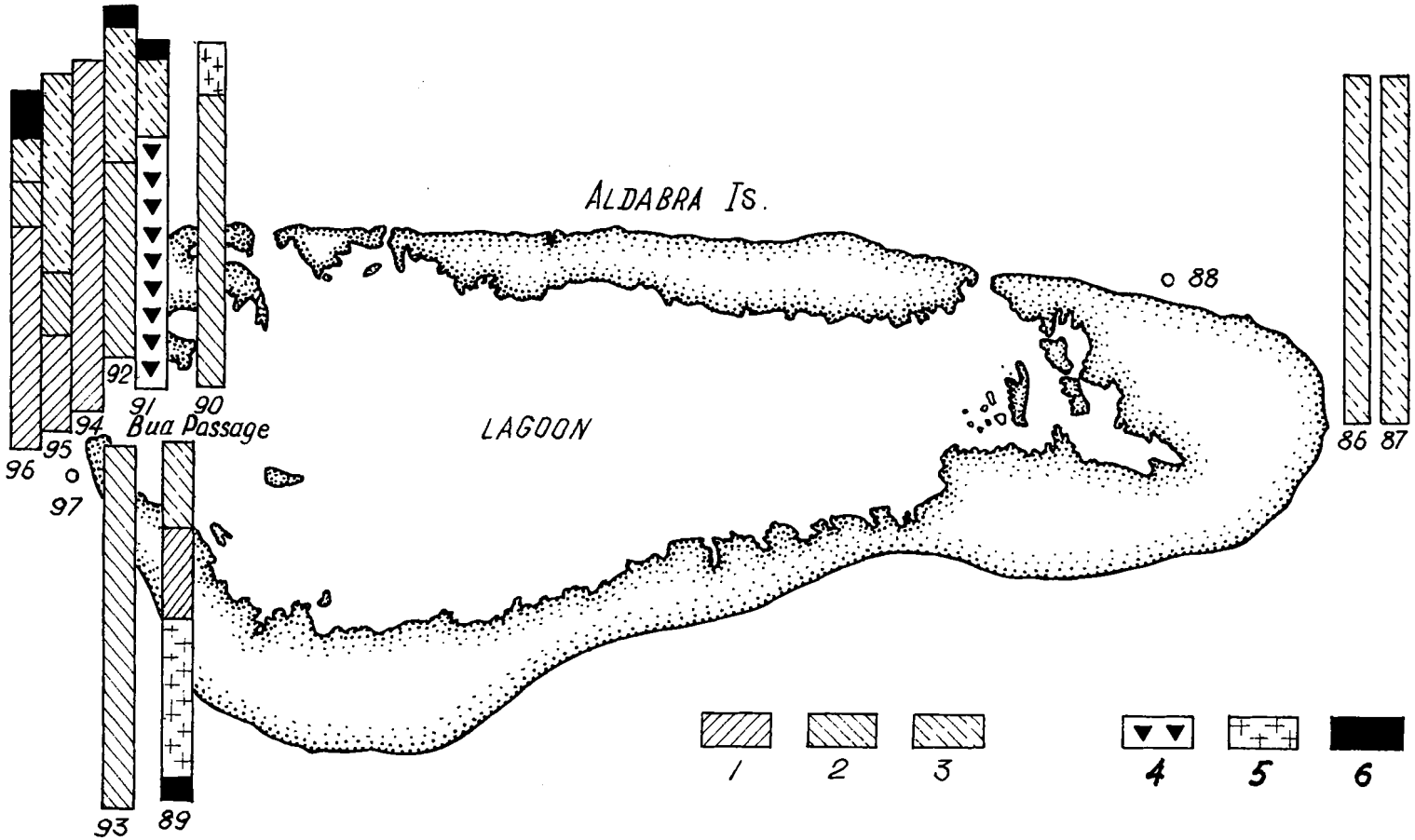


Figure 18. Location of stations and species ratios in phytocoenoses at Aldabra Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Halimeda opuntia*, 4 - *Turbinaria ornata*, 5 - *Laurencia* species, 6 - other minor species.

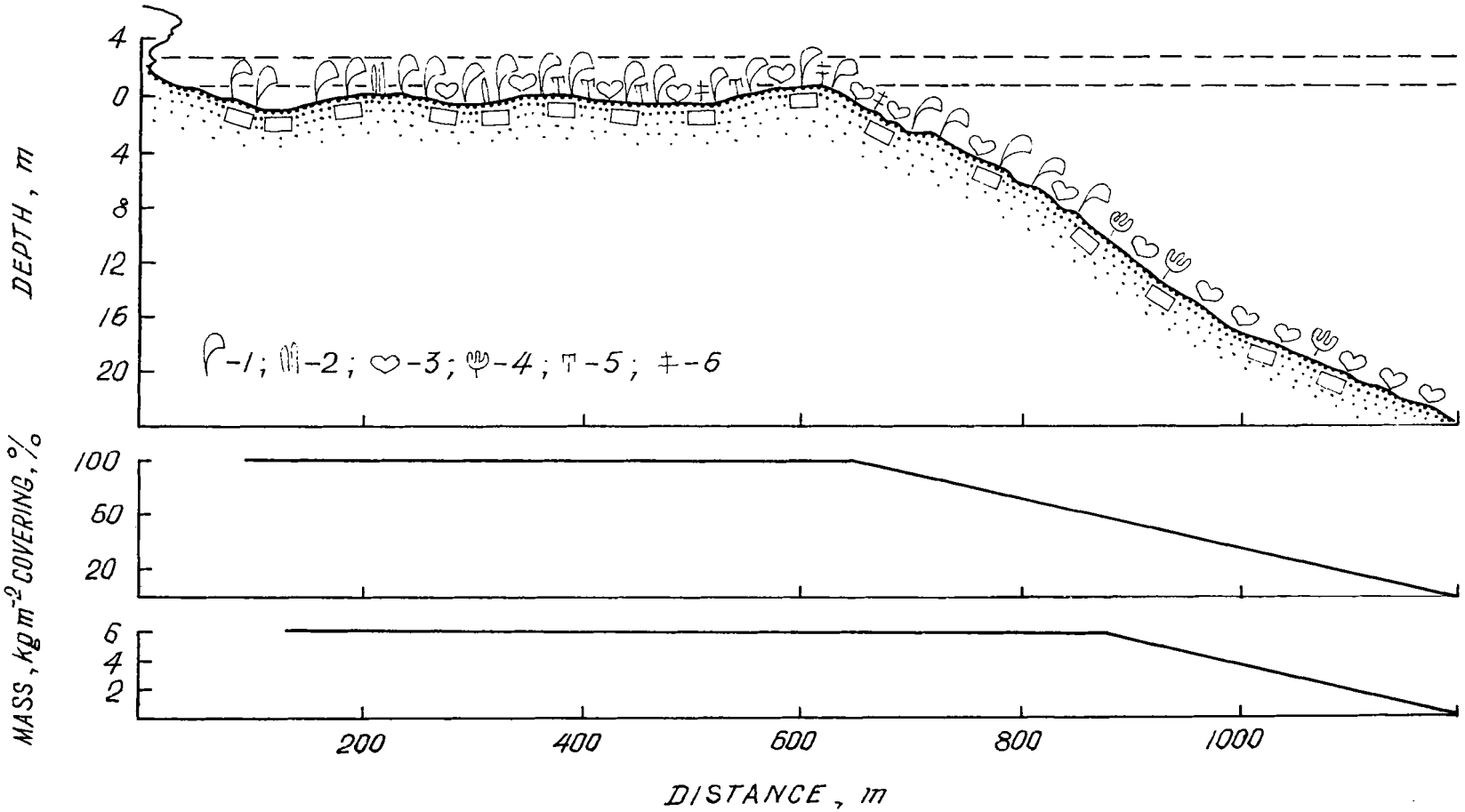


Figure 19. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at Aldabra Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Halimeda* species, 4 - *Avrainvillea amadelpha*, 5 - *Laurencia* species, *Dictyurus purpurascens*.

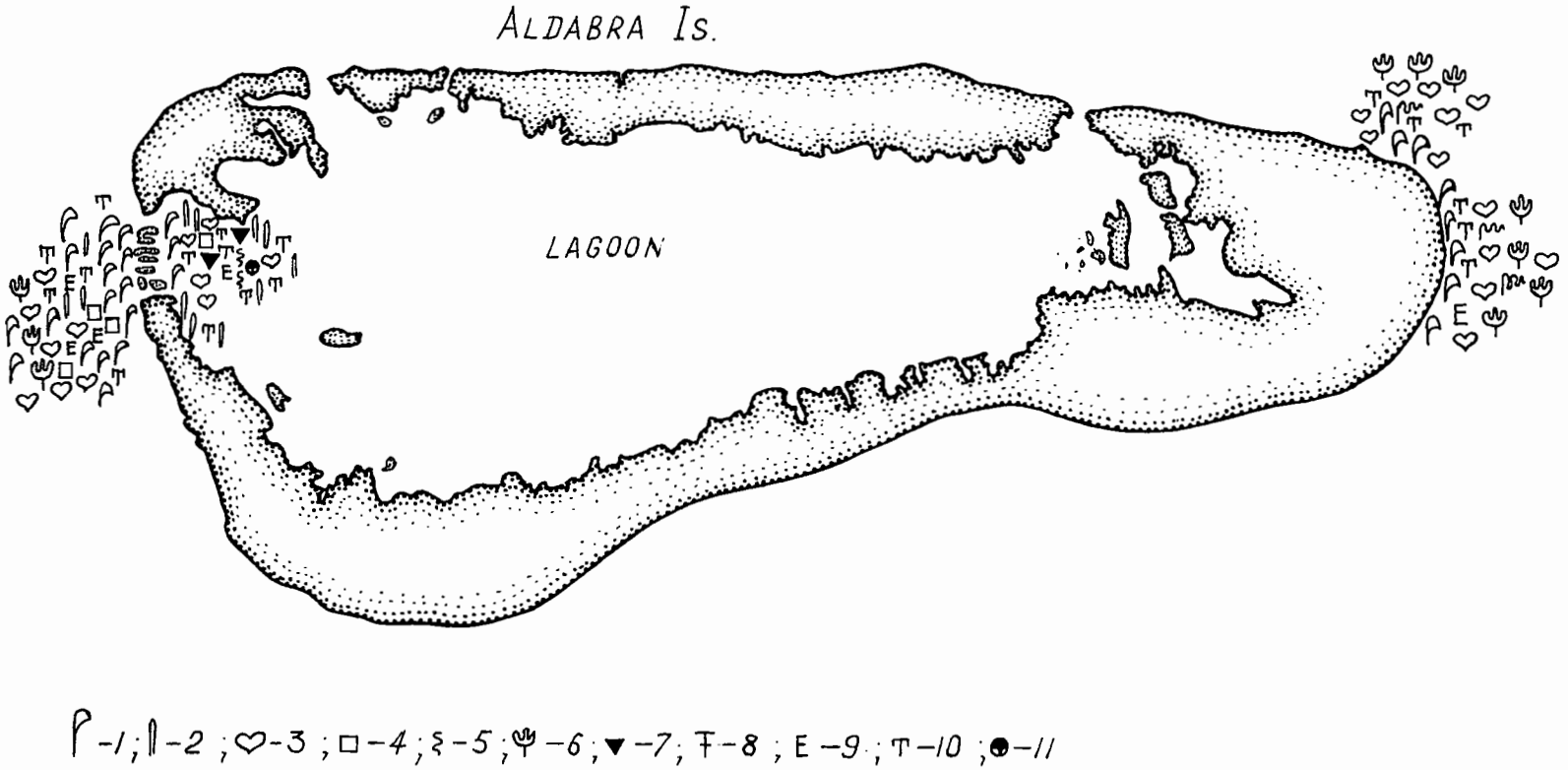


Figure 20. Horizontal distribution of algal and seagrass species at Aldabra Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Halimeda opuntia*, 4 - *Ulva rigida*, 5 - *Enteromorpha kylinii*, 6 - *Avrainvillea amadelpha*, 7 - *Turbinaria ornata*, 8 - *Dictyurus purpurascens*, 9 - *Dasya* species, 10 - *Laurencia* species, 11 - *Spyridia filamentosa*.

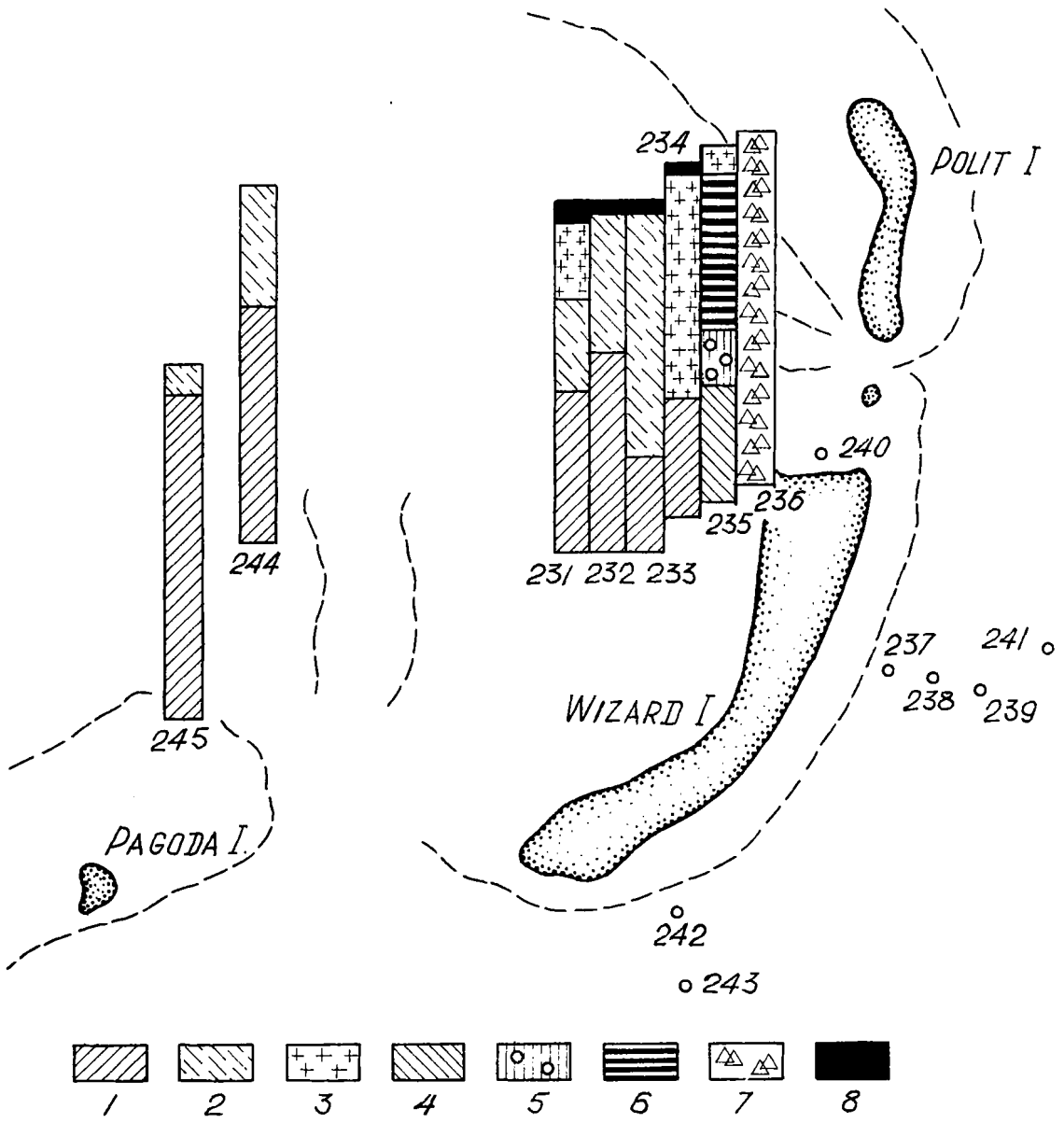


Figure 21. Location of stations and species ratios in phytocoenoses at Cosmoledo Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Halimeda opuntia*, 3 - *Laurencia papillosa*, 4 - *Thalassia hemprichii*, 5 - *Cymodocea serrulata*, 6 - *Jania* species, 7 - *Halodule uninervis*, 8 - other minor species.

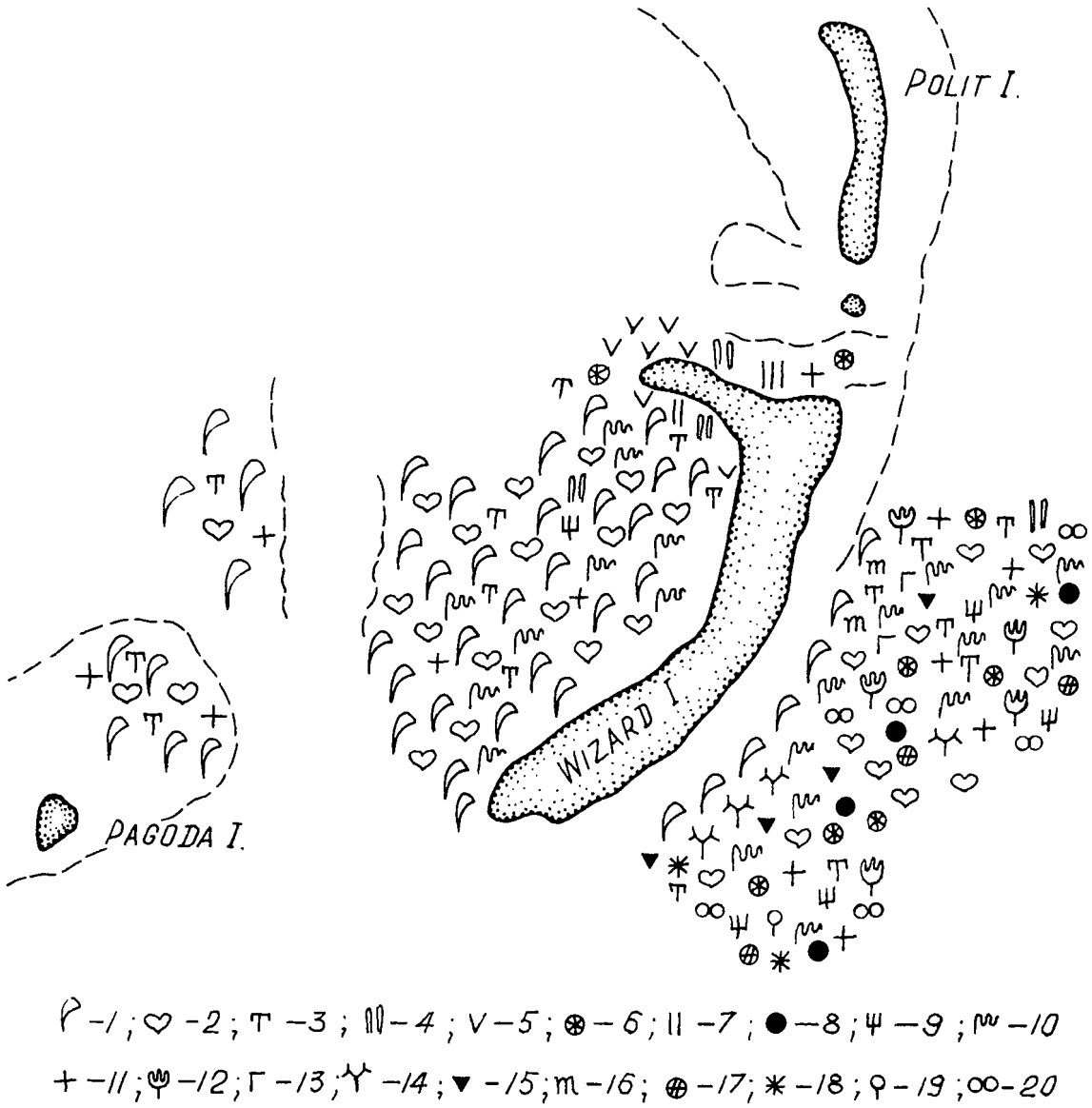


Figure 22. Horizontal distribution of algal and seagrasses at Cosmoledo Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Halimeda opuntia*, 3 - *Laurencia* species, 4 - *Thalassia hemprichii*, 5 - *Cymodocea serrulata*, 6 - *Jania* species, 7 - *Halodule uninervis*, 8 - *Lobophora variegata*, 9 - *Microdictyon okamurai*, 10 - *Caulerpa* species, 11 - *Dictyosphaeria cavernosa*, 12 - *Avrainvillea amadelpha*, 13 - *Hypnea* species, 14 - *Tricleocarpa oblongata*, 15 - *Turbinaria ornata*, 16 - *Valonia fastigiata* 17 - *Boodlea struveoides*, 18 - *Porolithon gardineri*, 19 - *Rhipilia tomentosa*, 20 - *Valonia aegagropila*.

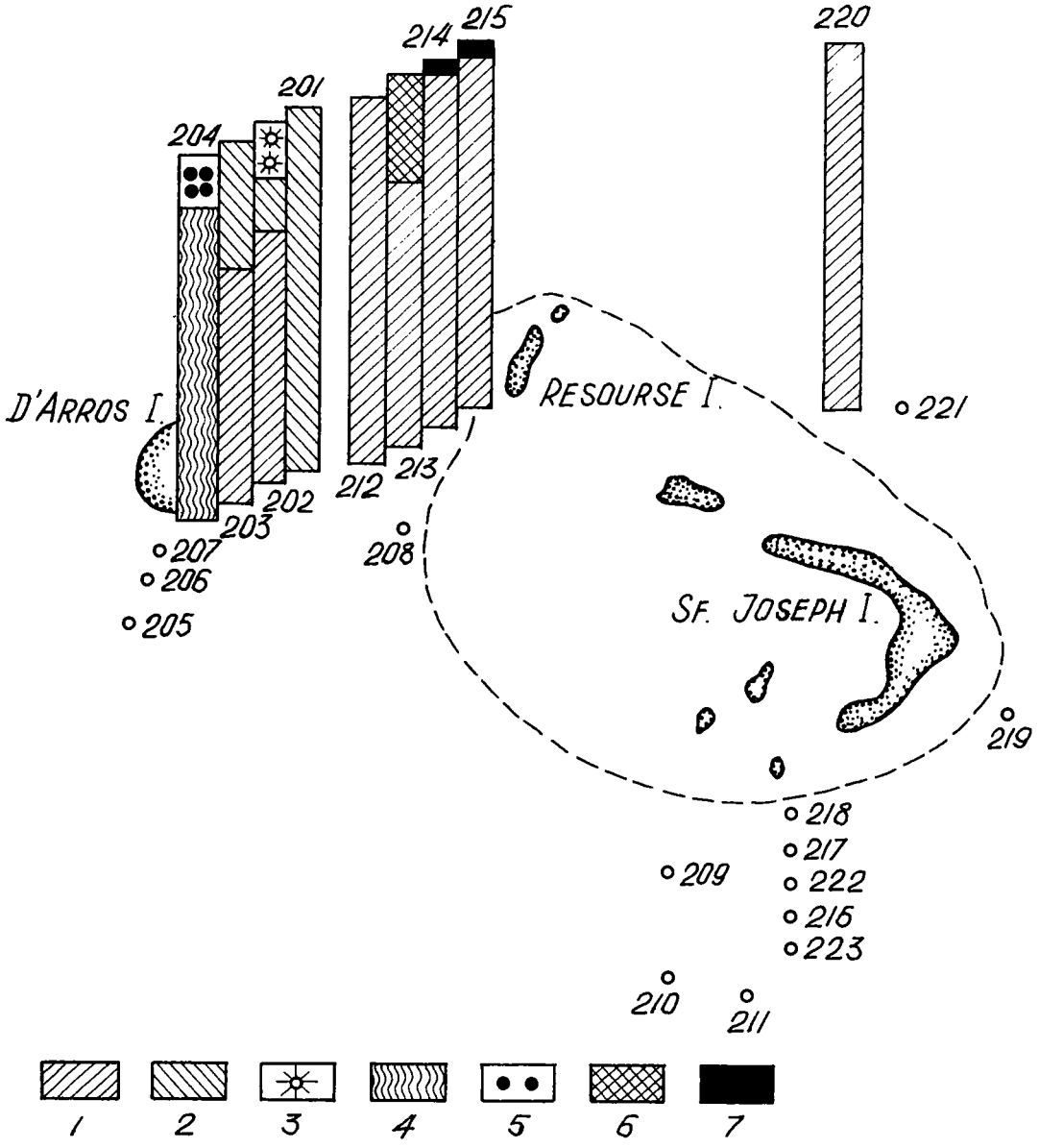


Figure 23. Location of stations and species ratios in phytocoenoses at St. Joseph Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Dictyosphaeria* species, 4 - *Cladophoropsis sundanensis*, 5 - *Valonia* species, 6 - *Microdictyon* species, 7 - other minor species.

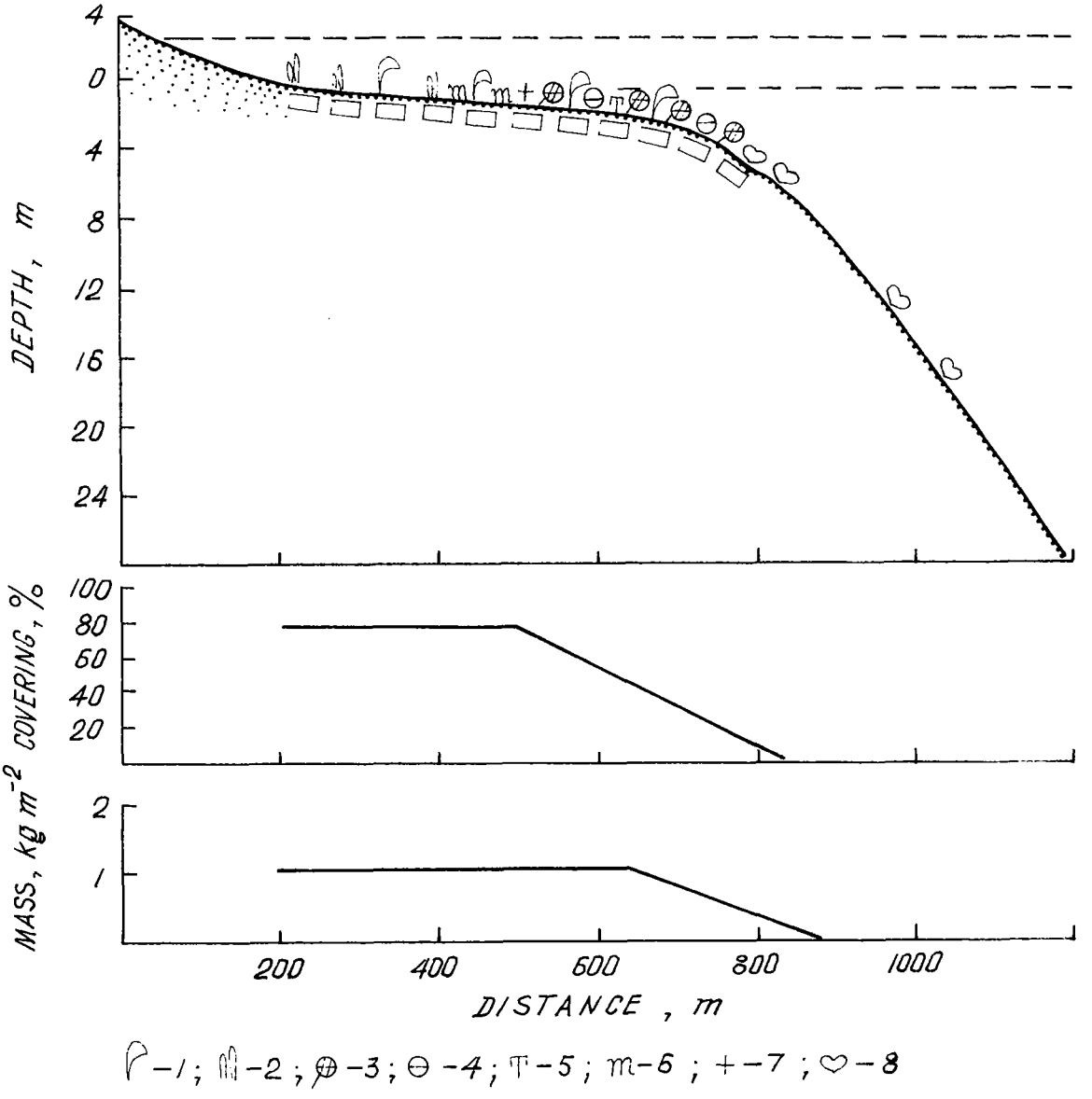


Figure 24. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at St. Joseph Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Boodlea struveoides*, 4 - *Cladophoropsis sundanensis*, 5 - *Laurencia* species, 6 - *Valonia fastigiata* 7 - *Dictyosphaeria* species, 8 - *Halimeda* species.

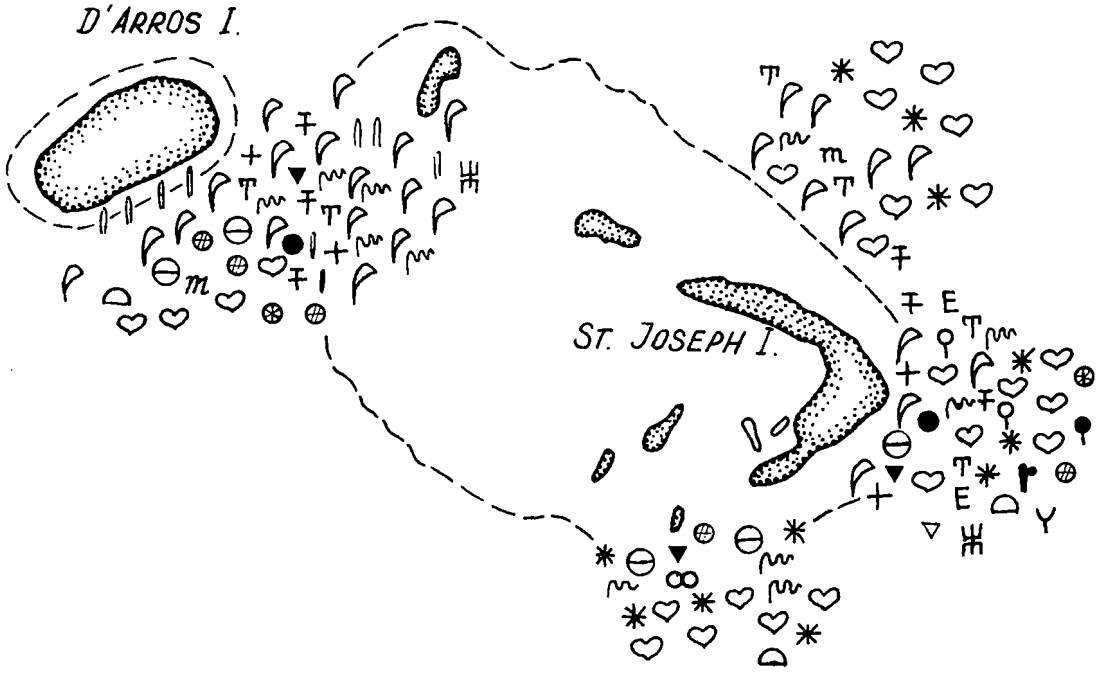


Figure 25. Horizontal distribution of algal and seagrass species at St. Joseph Atoll. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Halimeda* species, 4 - *Boodlea struveoides*, 5 - *Microdictyon montagnei*, 6 - *Valonia fastigiata* 7 - *Valonia utricularis*, 8 - *Valonia aegagropila*, 9 - *Dictyosphaeria* species, 10 - *Rhipilia tomentosa*, 11 - *Udotea argentea*, 12 - *Udotea orientalis*, 13 - *Codium* species, 14 - *Cladophoropsis sundanensis*, 15 - *Caulerpa* species, 16 - *Lobophora variegata*, 17 - *Turbinaria ornata*, 18 - *Laurencia* species, 19 - *Dictyurus purpurascens*, 20 - *Dasya mollis*, 21 - *Sporolithon sporolithon*, 22 - *Jania* species, 23 - crustose species.

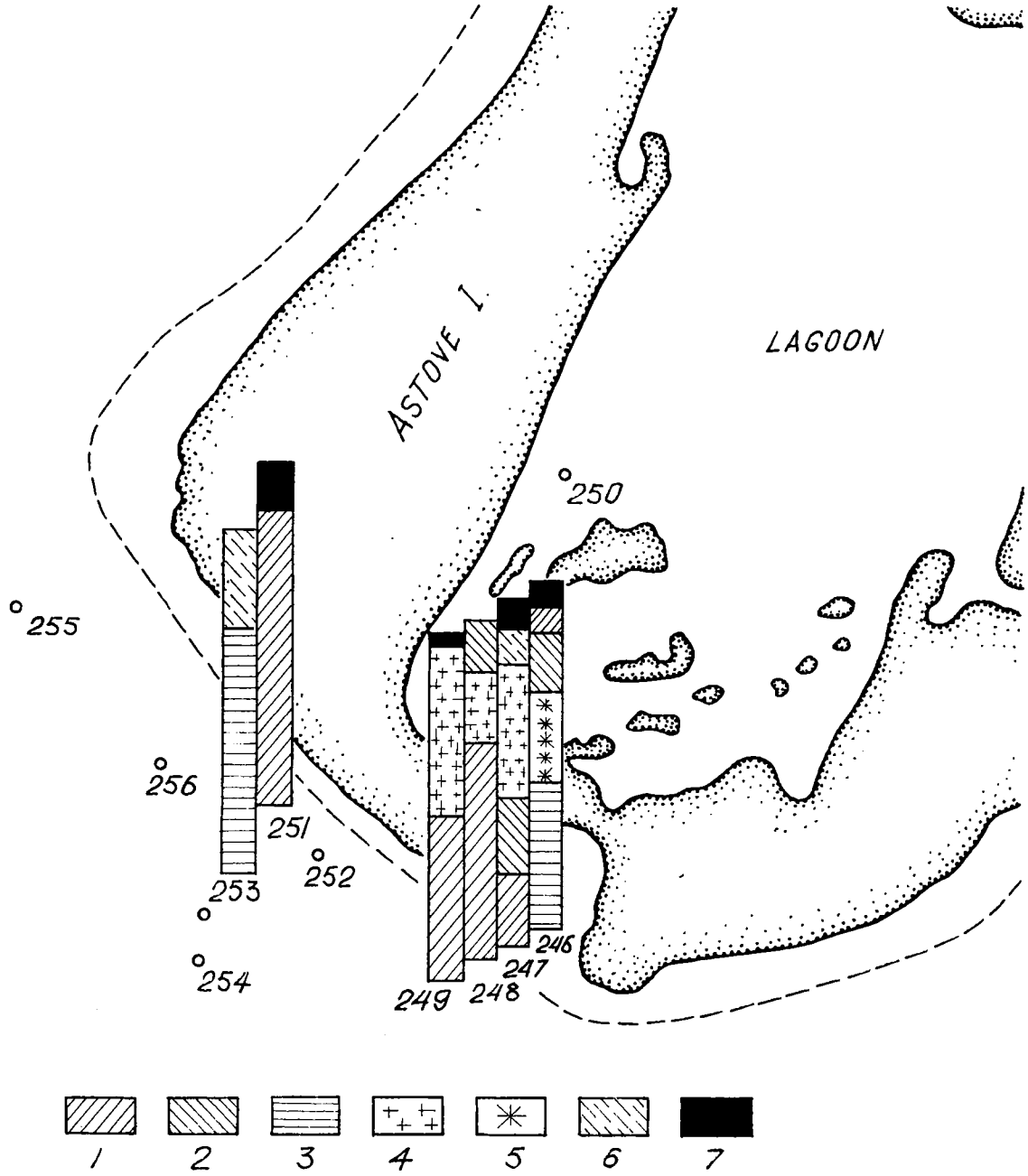


Figure 26. Location of stations and species ratios in phytocoenoses at Astove Island. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Caulerpa* species, 4 - *Laurencia* species, 5 - *Amphiroa*, 6 - *Halimeda* species, 7 - other minor species.

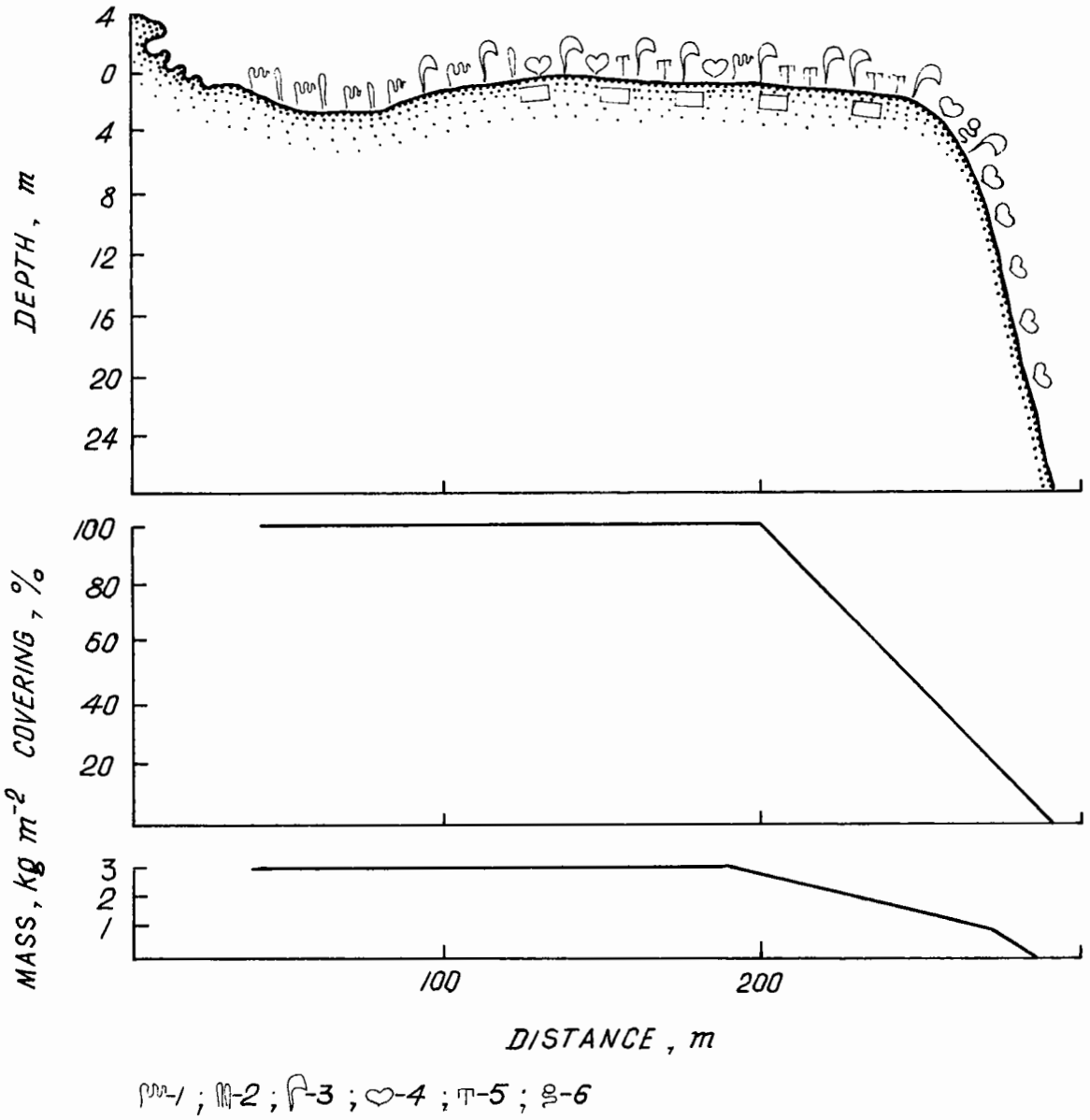


Figure 27. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at Astove Island. 1 - *Caulerpa* species, 2 - *Thalassia hemprichii*, 3 - *Thalassodendron ciliatum*, 4 - *Halimeda* species, 5 - *Laurencia* species, 6 - *iagora* species.

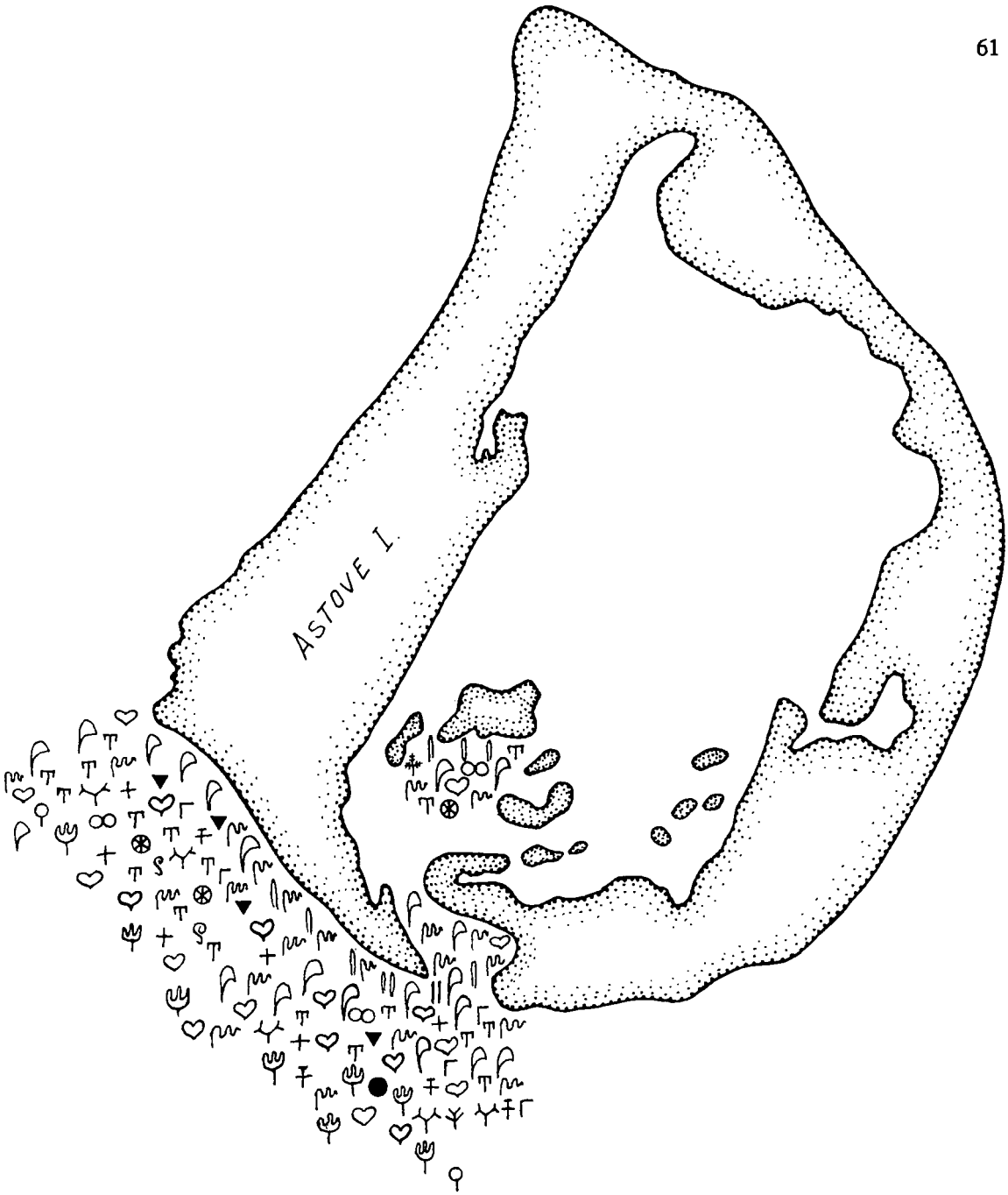


Figure 28. Horizontal distribution of algal and seagrass species at Astove Island. 1- *Thalassia hemprichii*, 2 - *Thalassodendron ciliatum*, 3 - *Halodule uninervis*, 4 - *Halimeda* species, 5 - *Caulerpa* species, 6 - *Dictyosphaeria* species, 7 - *Rhipilia tomentosa*, 8 - *Valonia aegagropila*, 9 - *Avrainvillea amadelpha*, 10 - *Turbinaria ornata*, 11 - *Lobophora variegata*, 12 - *Laurencia* species, 13 - *Dictyurus purpurascens*, 14 - *Hypnea spinella*, 15 - *Galaxaura* species, 16 - *Heterosiphonia* species, 17 - *Jania* species, 18 - *Liagora* species, 19 - *Spyridia filamentosa*.

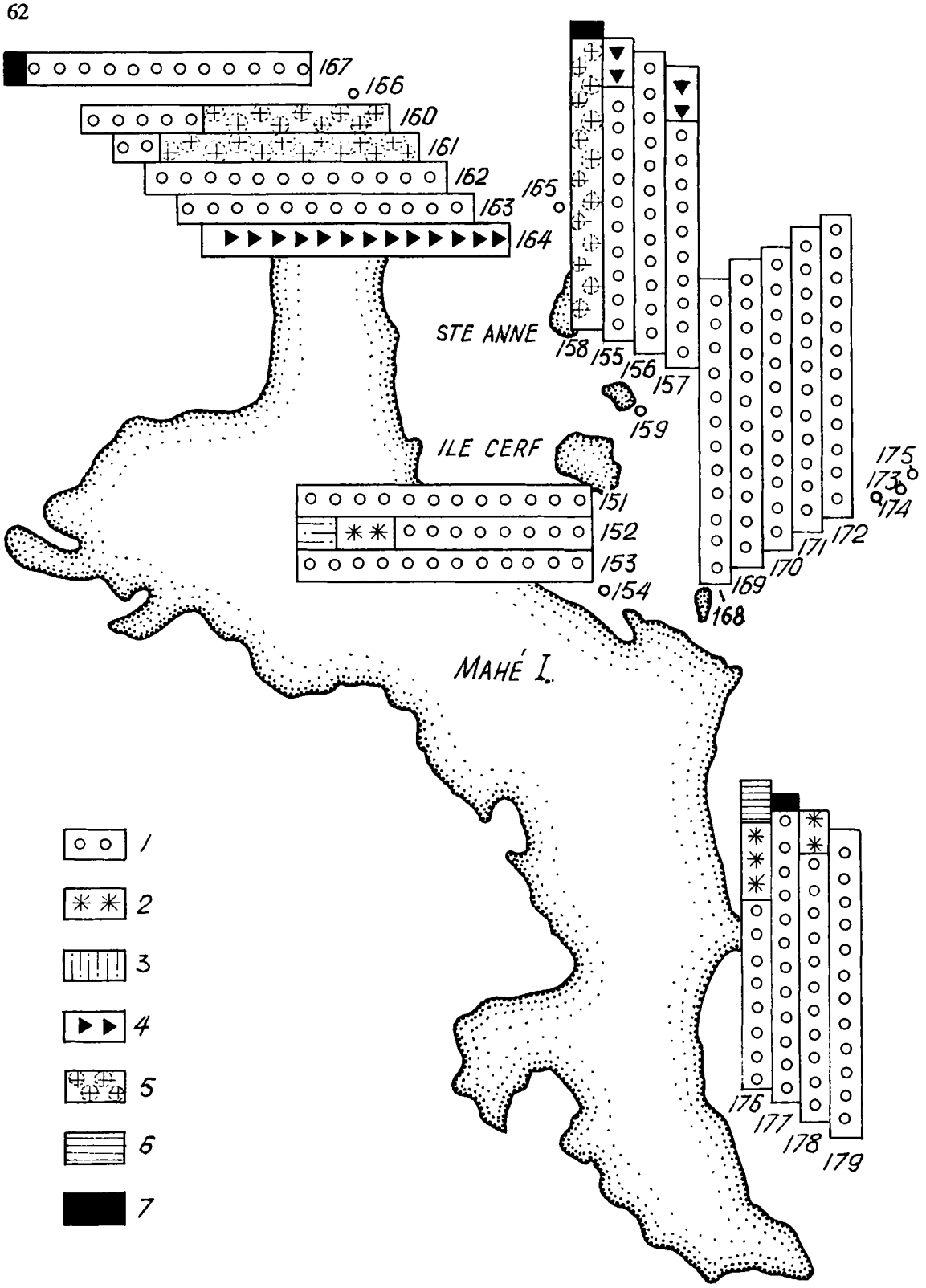


Figure 29. Location of stations and species ratios in phytocoenoses at Mahé Island. 1 - *Sargassum* species, 2 - *Amphiroa foliacea*, 3 - *Gelidiella acerosa*, 4 - *Turbinaria decurrencs*, 5 - *Gracilaria* species, 6 - *Caulerpa racemosa*, 7 - other minor species.

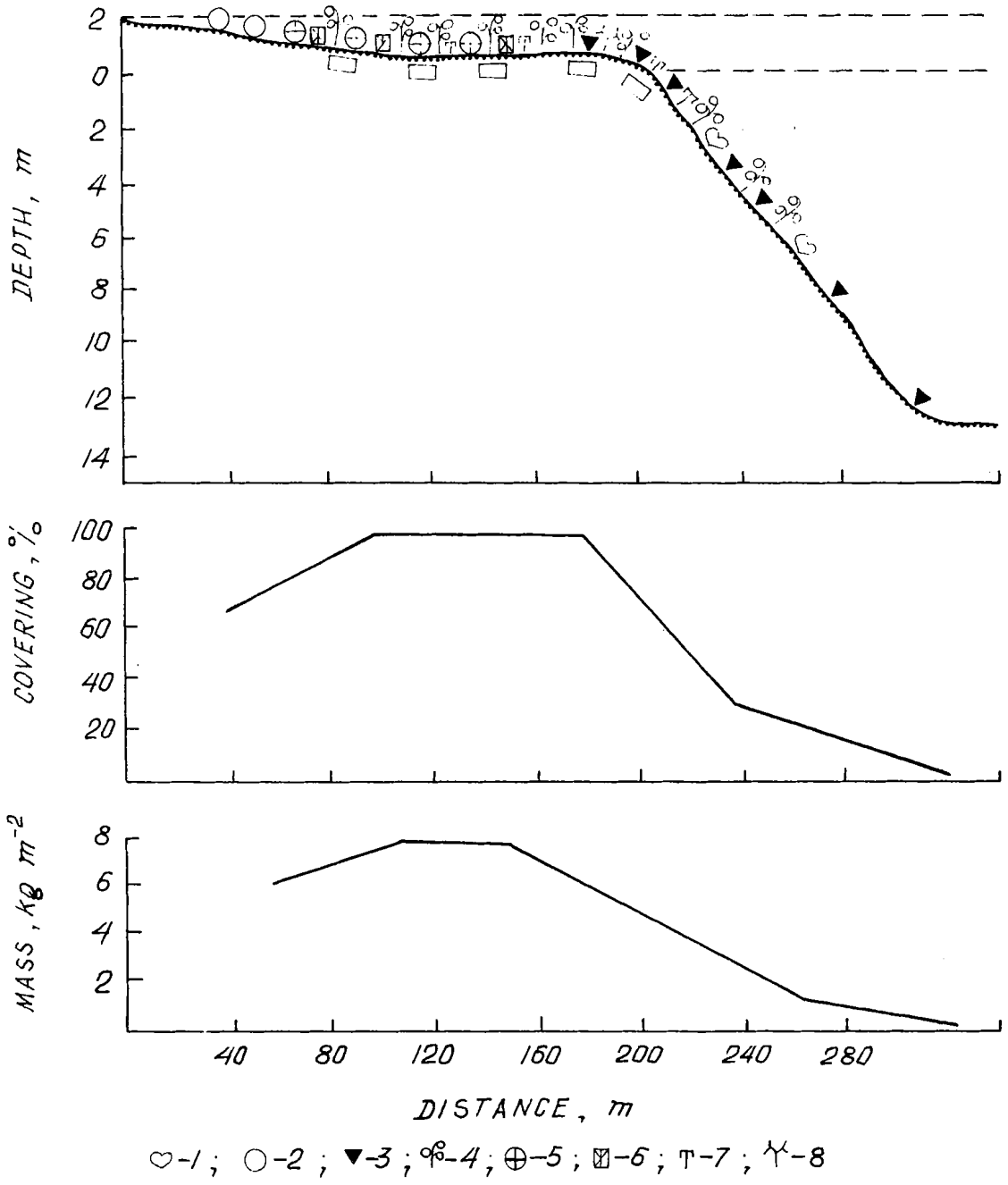


Figure 30. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at Mahé Island. 1 - *Halimeda*, 2 - *Padina* species, 3 - *Turbinaria* species, 4 - *Sargassum* species, 5 - *Gracilaria* species, 6 - *Amphiroa foliacea*, 7 - *Laurencia* species, 8 - *Tricleocarpa oblongata*.

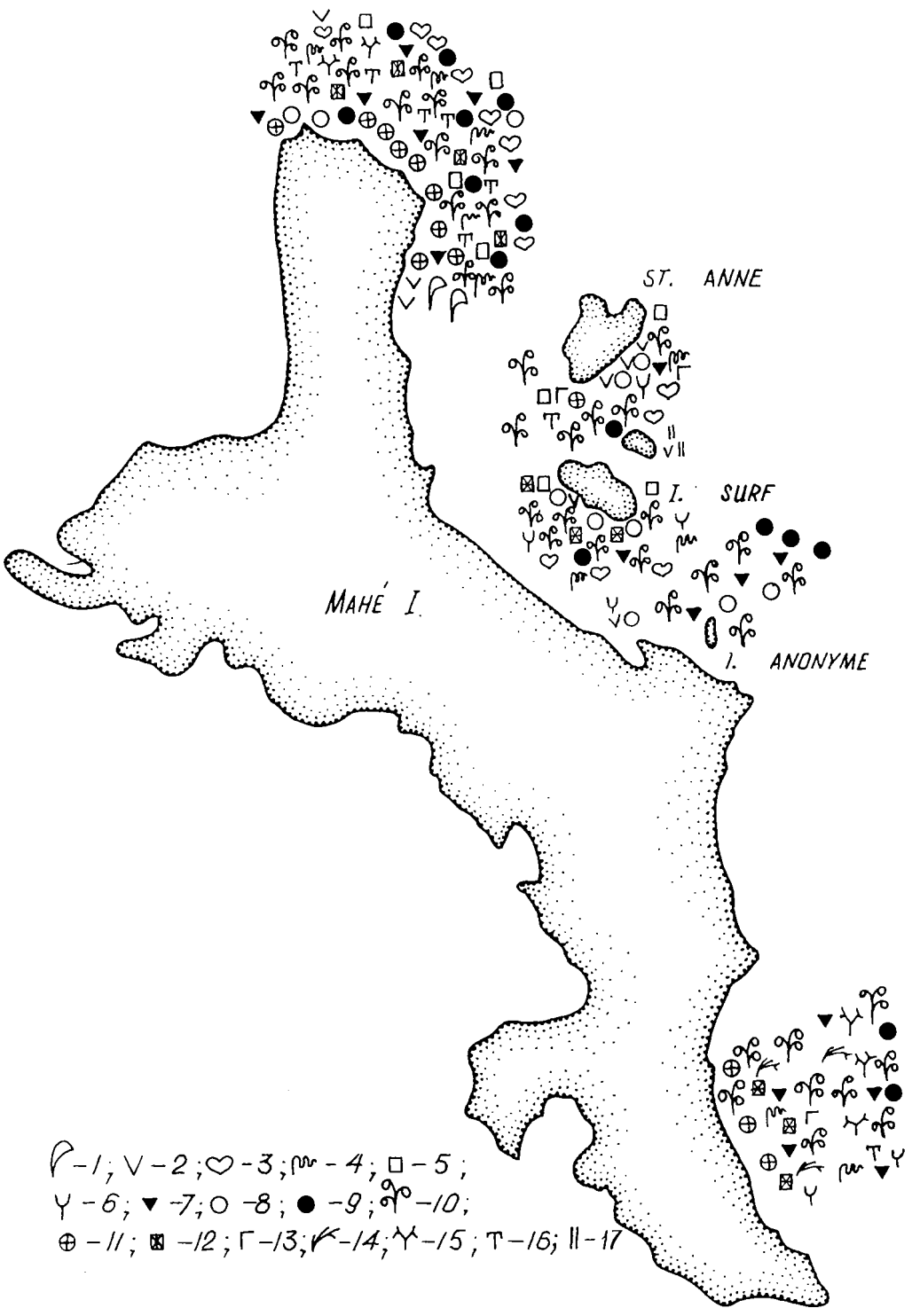


Figure 31. Horizontal distribution of algal and seagrass species at Mahé Island. 1 - *Thalassodendron ciliatum*, 2 - *Cymodocea serrulata*, 3 - *Halimeda* species, 4 - *Caulerpa racemosa*, 5 - *Ulva rigida*, 6 - *Dictyota* species, 7 - *Turbinaria* species, 8 - *Padina* species, 9 - *Lobophora variegata*, 10 - *Sargassum* species, 11 - *Gracilaria* species, 12 - *Amphiroa foliacea*, 13 - *Hypnea* species, 14 - *Gelidiella acerosa*, 15 - *Tricleocarpa oblongata*, 16 - *Laurencia* species, 17 - *Halodule uninervis*.

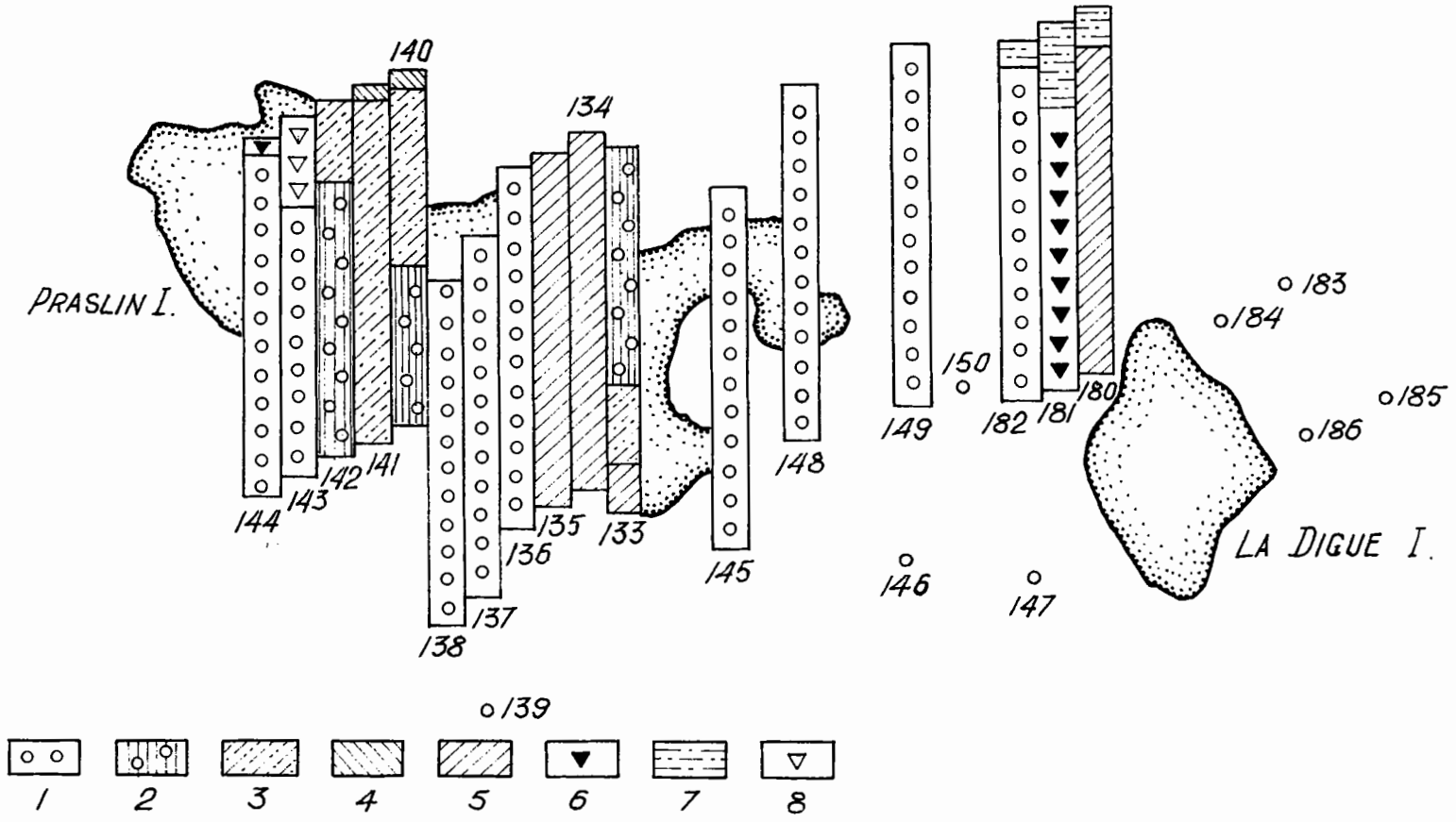


Figure 32. Location of stations and species ratios in phytocoenoses at Praslin and La Digue Islands. 1 - *Sargassum* species, 2 - *Cymodocea serrulata*, 3 - *Syringodium isoetifolium*, 4 - *Thalassia hemprichii*, 5 - *Turbinaria* species, 7 - *Hypnea pannosa*, 8 - *Padina* species.

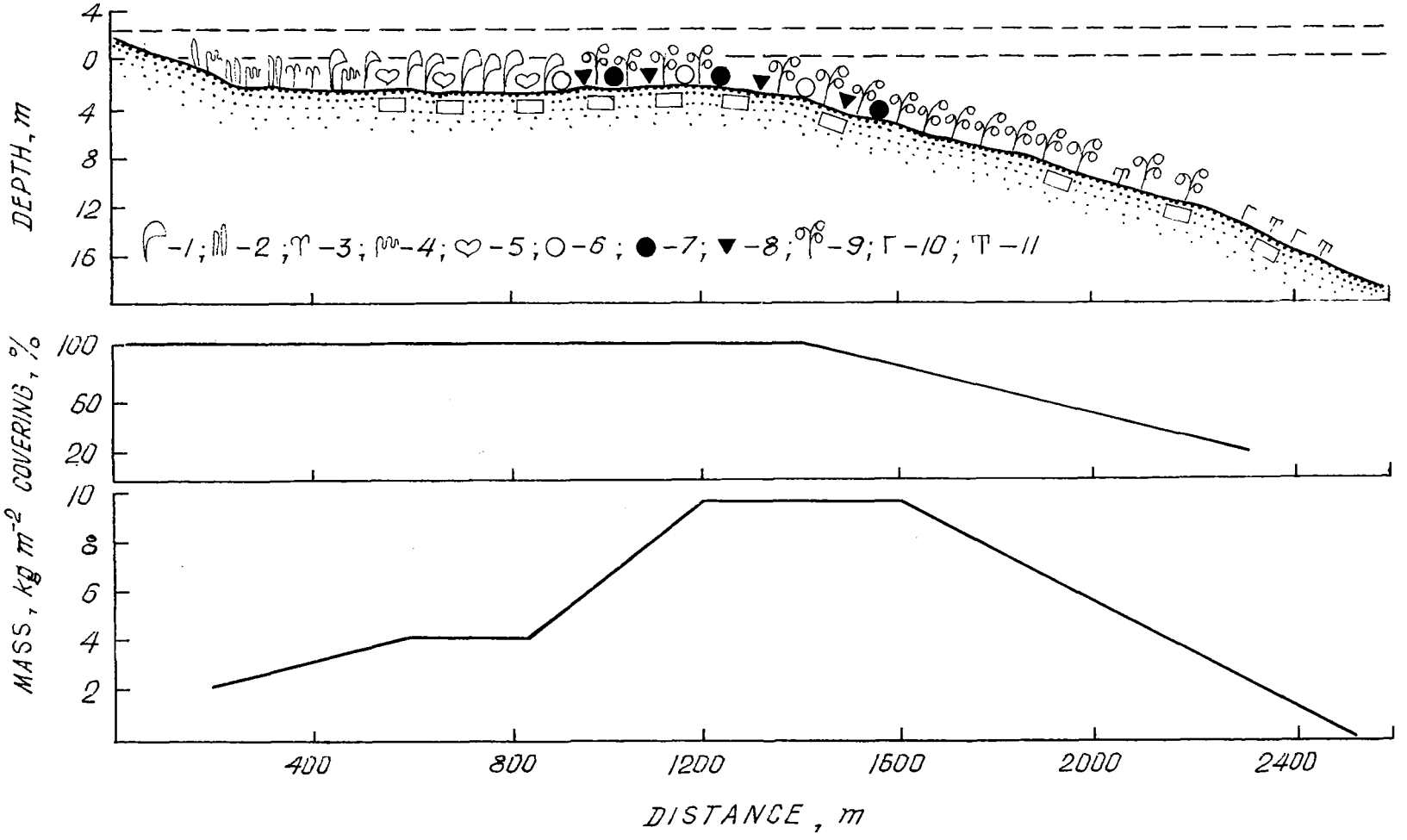


Figure 33. Vertical distribution of dominant species, biomass and percent cover of algae and seagrasses at Praslin Island. 1 - *Thalassodendron ciliatum*, 2 - *Thalassia hemprichii*, 3 - *Syringodium isoetifolium*, 4 - *Caulerpa serrulata*, 5 - *Halimeda* species, 6 -*Padina* species, 7 - *Lobophora variegata*, 8 - *Turbinaria* species, 9 - *Sargassum* species, 10 - *Hypnea* species, 11 - *Laurencia* species.

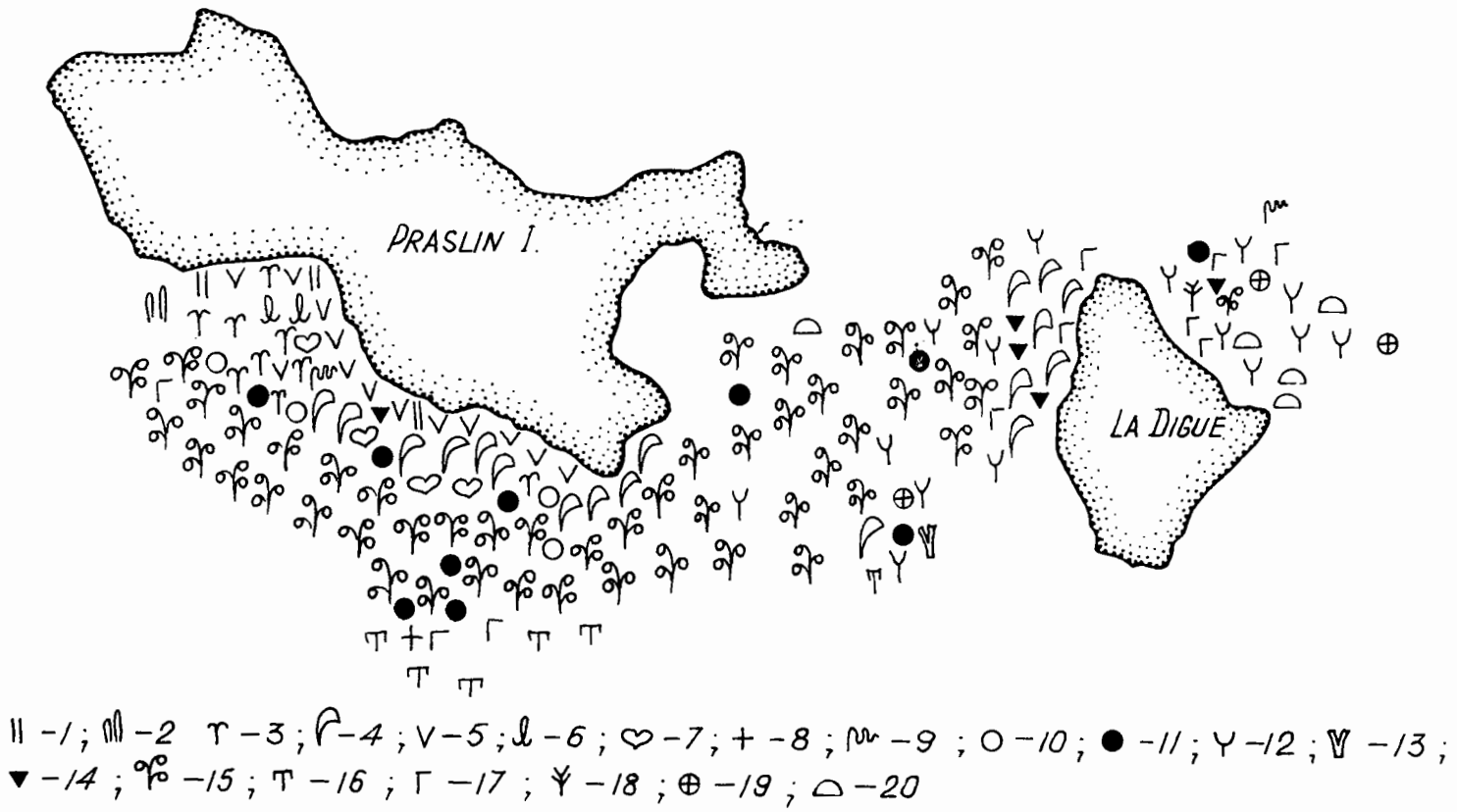


Figure 34. Horizontal distribution of species of algae and seagrasses at Praslin and La Digue Islands. 1 - *Halodule uninervis*, 2 - *Thalassia hemprichii*, 3 - *Syringodium isoetifolium*, 4 - *Thalassodendron ciliatum*, 5 - *Cymodocea serrulata*, 6 - *Halophila ovalis*, 7 - *Halimeda macroloba*, 8 - *Dictyosphaeria cavernosa*, 9 - *Caulerpa* species, 10 - *Lobophora variegata*, 11 - *Turbinaria* species, 12 - *Dictyota* species, 13 - *Dictyopteris polypodioides*, 14 - *Turbinaria* species, 15 - *Sargassum* species, 16 - *Laurencia* species, 17 - *Hypnea* species, 18 - *Heterosiphonia* species, 19 - *Gracilaria crassa*, 20 - crustose species.