INTRODUCTION

Octocorals are among the prominent components of reef communities of the Seychelles, but little faunistic information has been available (Thomson and Mackinnon 1910, Verseveldt 1976). Practically nothing is known about their vertical distribution on tropical reefs. This paper is a preliminary report on the identification of the octocoral collections made during the voyage of the R/V Akademik A. Nesmeyanov from January to March 1989, with some ecological observations. The following checklist presents a survey of the species collected during this voyage in addition to species recorded earlier.

LIST OF SPECIES

<table>
<thead>
<tr>
<th>Order Helioporacea</th>
<th>Family Helioporaceae</th>
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<tbody>
<tr>
<td>1. <em>Heliopora coerulea</em> (Pallas) (Côétivy, Aldabra, D'Arros, depth 5-13m)</td>
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<tr>
<th>Order Alcyonacea</th>
<th>Family Coelogorgiidae</th>
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<tr>
<td>2. <em>Coelogorgia palmosa</em> (Milne Edwards et Haime) (Aldabra, depth 9m)</td>
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<th>Order Tubiporidae</th>
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<tr>
<td>3. <em>Tubipora musica</em> Linné (Côétivy, D'Arros, Desroches, depth 10-34m)</td>
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<th>Order Alcyoniidae</th>
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<tr>
<td>4. <em>Alcyonium flaccidum</em> Tixier-Durivault (Aldabra, depth 8m)</td>
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<tr>
<td>5. <em>Cladiella australis</em> (Macfadyen) (Mahé, depth 16m)</td>
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<td>6. <em>Cladiella krempfi</em> (Hickson) (Côétivy, depth 8m)</td>
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<td>7. <em>Cladiella sphaerophora</em> (Ehrenberg) (Pralin, depth 7m)</td>
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<td>8. <em>Cladiella</em> sp. (Côétivy, Aldabra, Pralín, depth 5-8m)</td>
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<tr>
<td>9. <em>Dampia pocilloporaformis</em> Alderslade (Bird, depth 12m)</td>
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<tr>
<th>Order Lobophytophyllum</th>
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<tr>
<td>10. <em>Lobophytophyllum alatum</em> Tixier-Durivault (Côétivy, depth 5-10m)</td>
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<td>11. <em>Lobophytophyllum borbonicum</em> Marenzeller (D'Arros, Desroches, La Digue, Farquhar, depth 8-12m)</td>
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<td>12. <em>Lobophytophyllum crebriplicatum</em> Marenzeller (African, depth 14m)</td>
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<td>13. <em>Lobophytophyllum irregular</em> Tixier-Durivault (Côétivy, Desroches, depth 13-16m)</td>
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<tr>
<td>14. <em>Lobophytophyllum michaelae</em> Tixier-Durivault (Farquhar, depth 15m)</td>
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<td>15. <em>Lobophytophyllum mirabile</em> Tixier-Durivault (Desroches, depth 12m)</td>
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17. Lobophytum variatum Tixier-Durivault (Farquhar, depth 16m)
18. Lobophytum sp. (Mahé, depth 4m)
19. Parerythropodium fulvum (Forskål) (Côétivy, Aldabra, D’Arros, Mahé, Farquhar, St. Joseph, depth 6-24m)
20. Sarcophyton ehrenbergii Marenzeller (Côétivy, D’Arros, Aldabra, Mahé, depth 3-16m)
21. Sarcophyton elegans Moser (D’Arros, depth 26m)
22. Sarcophyton glaucum (Quoy et Gaimard) (D’Arros, Desroches, Farquhar, depth 11-27m)
23. Sarcophyton infundibuliforme Tixier-Durivault (Côétivy, African, Mahé, depth 6-15m)
24. Sarcophyton roseum Pratt (Côétivy, depth 7m)
25. Sarcophyton trocheliophorum Marenzeller (Côétivy, Desroches, Mahé, La Digue, Farquhar, depth 12-21m)
26. Sarcophyton turshii Verseveldt (Praslin, depth 8m)
27. Sinularia cruciata Tixier-Durivault (Côétivy, depth 22m)
28. Sinularia densa (Whitelegge) (Côétivy, depth 8m)
29. Sinularia dura (Pratt) (Côétivy, depth 16m)
30. Sinularia fisheleoni Verseveldt (Côétivy, D’Arros, Desroches, La Digue, Farquhar, depth 8-15m)
31. Sinularia gibberosa Tixier-Durivault (Côétivy, D’Arros, Mahé, La Digue, depth 4-16m)
32. Sinularia heterospiculata Verseveldt (Côétivy, Aldabra, Desroches, Farquhar, depth 13-17m)
33. Sinularia humesi Verseveldt (Farquhar, depth 15m)
34. Sinularia leptoecados (Ehrenberg) (Mahé, depth 14m)
35. Sinularia lochmodes Kolonko (Mahé, Bird, depth 12-14m)
36. Sinularia mayi Lüttischwager (Côétivy, Farquhar, African, depth 6-12m)
37. Sinularia muralis May (Desroches, depth 12m)
38. Sinularia numerosa Tixier-Durivault (Côétivy, Desroches, Farquhar, depth 10-17)
39. Sinularia polydactyla (Ehrenberg) (Côétivy, D’Arros, Desroches, Farquhar, Cosmoledo, depth 12-26m)
40. Sinularia querciformis (Pratt) (Mahé, depth 16m)
41. Sinularia aff. robusta Macfadyen (Côétivy, depth 16m)
42. Sinularia terspilli Verseveldt (Mahé, depth 10m)
43. Sinularia sp. (Côétivy, Farquhar, Cosmoledo, depth 12-15m)

Family Nephtheidae
44. Capnella bouilloni Verseveldt (D’Arros, Desroches, African, St. Joseph, depth 5-25m)
45. Capnella parva Light (Côétivy, D’Arros, Desroches, depth 8-24m)
46. Lemnalia bournei Roxas (Côétivy, African, depth 5-14)
47. Lemnalia tenus Verseveldt (Côétivy, Aldabra, African, depth 16-32m)
48. Litophyton arboreum Forskål (Farquhar, depth 25m)
49. Nephthea chabrolii Audouin (Côétivy, depth 10m)
50. Nephthea hirsuta Tixier-Durivault (Desroches, depth 13m)
51. Spongodes mucronata Püttner (Desroches, Praslin, Cosmoledo, depth 14-32m)
52. Spongodes sp.1 (Desroches, Cosmoledo, depth 24-33m)
53. Spongodes sp.2 (Cosmoledo, depth 31m)
54. Stereonephthya acaulis Verseveldt (Côétivy, Aldabra, Desroches, Cosmoledo, depth 8-25m)

Family Nidaliidae
55. Siphonogorgia hicksoni Thomson et Mackinnon (Desroches, depth 28m)
56. Siphonogorgia sp. (Desroches, depth 31m)

Family Xenidae
57. Anthelia glauca Lamarck (Côétivy, Aldabra, Farquhar, depth 3-6m)
58. Cespitularia coerulesca May (Côétivy, Farquhar, depth 4-16m)
59. Heteroxenia elizabetiae Kölliker (Côétivy, depth 4m)
60. Sympodium caeruleum Ehrenberg (D’Arros, Desroches, depth 8-12m)
61. Xenia umbellata Savigny (Mahé, depth 4m)
62. Xenia sp. (Côétivy, Desroches, Mahé, depth 3-11m)
Order Gorgonacea
Family Subergorgiidae
63. Subergorgia koellikeri Wright et Studer (Praslin, African, depth 30-34m)
64. Subergorgia mollis (Nutting)(D’Arros, depth 22m)
65. Subergorgia sp. (D’Arros, Desroches, depth 18-30m)

Family Melithaeidae
66. Melithaea ochracea (Linnè), Praslin, Farquhar, depth 14-33m)
67. Wrightella coccinea (Ellis et Solander)(Côetivy, depth 8m)

Family Acanthogorgiidae
68. Acanthogorgia sp. (Desroches, depth 31m)

Family Plexauridae
69. Euplexaura aff. erecta Kükenthal (D’Arros, depth 28m)
70. Paracis sp. (Côetivy, Praslin, Cosmoledo, depth 12-20m)

Family Gorgoniidae
71. Rumphella aggregata (Nutting)(Côetivy, Desroches, Farquhar, Cosmoledo, depth 12-15m)

DISTRIBUTIONAL OBSERVATIONS

Stoddart (1984) distinguishes three main types of reefs in the Seychelles region, namely fringing reefs (Mahé, Praslin and other granitic islands), platform reefs (Côetivy, Providence, African Banks, D’Arros and Desroches) and atoll reefs (Aldabra, Cosmoledo, Farquhar and St. Joseph). There are differences in the vertical distribution of octocorals on these reef types.

Fringing reefs. Octocorals on the reefs of this type are concentrated in the lower horizons of the reef slopes and sloping platforms. Colonies are situated well away from each other, therefore the alcyonacean living cover is not very high and does not exceed 25%. Usually 2-3 species dominate on these slopes. On the upper reef slope and reef-flat, alcyonaceans are uncommon. Only several species were found in these zones (Sarcophyton ehrenbergi, Lobophytum sp. and some xeniids). It is interesting that the domination by certain representatives of the family Alcyoniidae is noted for all the reefs studied in the Seychelles and also for other localities in the Indian Ocean, for example, Madagascar and Mozambique (personal observations). I have noted the same situation on most reefs of the South China Sea. Alcyoniids also contribute the main part of the reef octocoral fauna in Vietnam, moreover 84-92% of species belong to only four genera, namely Sinularia, Sarcophyton, Lobophytum and Cladiella (Malyutin, in press). A similar situation was noted in Thailand (Alderslade, personal communication), but on the Great Barrier of Australia, Dinesen (1983) noted the predominance of Xeniidae and Nephtheidae.

Platform reefs. One of the prominent features of these reefs is the absence of steep reef slopes with the reef surfaces inclining only slightly toward the open sea. Alcyonaceans are the most noticeable component of coral communities at depths of 4-6m and greater. Their vertical distribution is uniform and living cover averages 48%, but sometimes it may reach as much as 85% (Desroches Island), where the reef appears to be a peculiar "soft-coral platform." By comparison, the living cover of scleractinian and milleporid corals does not exceed 20%. Platform reefs are consistently dominated by representatives of the same genera, namely Sinularia (S. polydactyla, S. heterospiculata, S. numerosa, S. fishelsoni and several others), Sarcophyton (S. trocheiophorum, S. ehrenbergi), Lobophytum (L. borbonicum, L. patulum) and settlements are polyspecific. Representatives of other genera are uncommon here and settle singly or in small groups (Capnella parva).

Similar reefs were studied in Vietnam. The scheme of vertical distribution of octocorals on these reefs corresponds to those described above, and average living cover is approximately 70% for
similar "soft-coral platforms."

Atolls. With respect to octocoral distribution, atolls can be thought of as formations having the combined characters of both fringing and platform reefs. Variations in the distribution seem to be dependent upon the geomorphological peculiarities of each atoll. For example, the vertical distribution of octocorals on the eastern side of Farquhar is similar to that of platform reefs. The height and living cover of alcyonaceans (53% on average) and polyspecific settlement are evidence of this similarity. A definite reef slope is absent. An analogous situation occurs on the eastern rise of Cosmoledo, but the alcyonacean living cover is less (34% on average).

In contrast, the scheme of octocoral vertical distribution in some other atolls such as the northwestern side of Farquhar, the western area of Aldabra and on some localities of St. Joseph correspond more closely with the characteristics of fringing reefs. Presence of a definite reef slope leads to concentrations of octocorals in the lower reef horizons. The average living cover of alcyonaceans near the base of the reef slope is about 30%, and values on the upper reef slope usually do not exceed 15%.

CONCLUSIONS

It appears that the vertical distribution of octocorals is influenced by the geomorphological peculiarities of each reef type. If a definite reef slope exists, octocorals are concentrated on the lower horizons of the reef. This is probably due to the tendency of dissolved and suspended organic matter and minerals to be directed down along the reef profile (Preobrazhensky, 1986). Octocorals tend to settle in these zones of organic matter transport and accumulation. In cases when there is a lack of definite reef slope, nutrients are distributed more uniformly along the reef profile and this presumably results in a uniformity of octocoral distribution.

REFERENCES


