

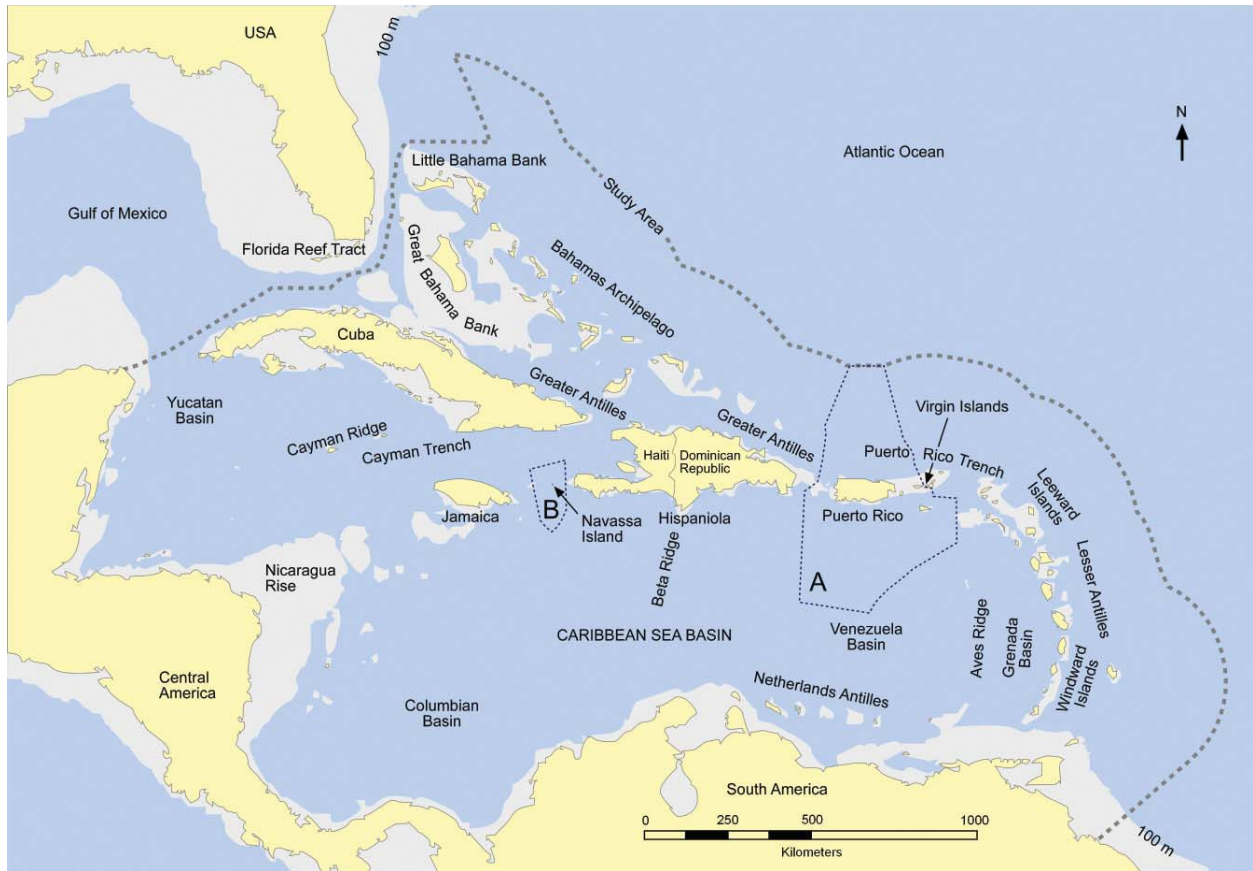
# Deep-Sea Coral Taxa in the U. S. Caribbean Region: Depth and Geographical Distribution

By Stephen D. Cairns<sup>1</sup>

1. National Museum of Natural History, Smithsonian Institution, Washington, DC

An update of the status of the azooxanthellate, heterotrophic coral species that occur predominantly deeper than 50 m in the U.S. Caribbean territories is not given in this volume because of lack of significant additional data. However, an updated list of deep-sea coral species in Phylum Cnidaria, Classes Anthozoa and Hydrozoa, from the Caribbean region (Figure 1) is presented below. Details are provided on depth ranges and known geographic distributions within the region (Table 1). This list is adapted from Lutz & Ginsburg (2007, Appendix 8.1) in that it is restricted to the U. S. territories in the Caribbean, i.e., Puerto Rico, U. S. Virgin Islands, and Navassa Island, not the entire Caribbean and Bahamian region. Thus, this list is significantly shorter. The list has also been reordered alphabetically by family, rather than species, to be consistent with other regional lists in this volume, and authorship and publication dates have been added. Also, *Antipathes americana* is now properly assigned to the genus *Stylopathes*, and *Stylaster profundus* to the genus *Stenohelia*. Furthermore, many of the geographic ranges have been clarified and validated. Since 2007 there have been 20 species additions to the U.S. territories list (indicated with blue shading in the list), mostly due to unpublished specimens from NMNH collections. As a result of this update, there are now known to be: 12 species of Antipatharia, 45 species of Scleractinia, 47 species of Octocorallia (three with incomplete taxonomy), and 14 species of Stylasteridae, for a total of 118 species found in the relatively small geographic region of U. S. Caribbean territories.

*Recommended citation:* Cairns SD (2017) Deep-Sea Coral Taxa in the U.S. Caribbean Region: Depth and Geographical Distribution. Online resource: <https://deepseacoraldata.noaa.gov/library/2017-state-of-deep-sea-corals-report>



**Figure 1.** The greater Caribbean region (map from Lutz & Ginsberg, 2007). The current list covers deepwater corals recorded from U.S. waters around (A) Puerto Rico and the U.S. Virgin Islands and (B) Navassa Island. The deep-sea coral list from Lutz & Ginsberg (2007) covered the entire Caribbean (indicated by the dashed line “Study Area”).

**Table 1.** List of known deep-sea coral species in Phylum Cnidaria, Class Anthozoa and Class Hydrozoa, and their reported distributions in U.S. waters around Puerto Rico, the U.S. Virgin Islands, and Navassa Island. Blue fields indicate newly described species since 2007. Bold text indicates changes to the list found in Lutz & Ginsberg (2007), including additions or range extensions, denoted with an asterisk (\*), and changes in taxonomy since 2007 denoted with a cross (†) (e.g., species that were listed in 2007, but have since been given a new name or alternative spelling). “NR” indicates a lack of reported distribution or depth information. References are numbered to correspond with citations following the table.

Distribution: PR = Puerto Rico; VI = U.S. Virgin Islands; N = Navassa.

Higher Taxon	Species	Distribution	Depth Range (m)	References
<b>Class Anthozoa</b>				
<b>Subclass Hexacorallia</b>				
<b>Order Antipatharia</b>				
Family Antipathidae	<i>Antipathes caribbeana</i> Opresko, 1996	PR,VI	11-100	1,2,3
	* <i>Antipathes gracilis</i> Gray, 1860	PR	219	1
	<i>Antipathes rhipidion</i> Pax, 1908	VI	?	4
	* <i>Stichopathes luetkeni</i> Brook, 1889 (= <i>Stichopathes lutkeni</i> , alternative spelling)	N	14-115	1
	* <i>Stichopathes pourtalesi</i> Brook, 1889	PR	229	1
Family Myriopathidae	<i>Plumapathes pennacea</i> (Pallas, 1766)	PR,VI	3-229	5,6
	<i>Tanacetipathes hirta</i> (Gray, 1857)	PR	13-357	5,7
	<i>Tanacetipathes tanacetum</i> (Pourtalès, 1880)	PR	46-915	5
Family Schizopathidae	<i>Bathypathes patula</i> Brook, 1889	PR	100-5000	5,6
	<i>Parantipathes tetrasticha</i> (Pourtalès, 1868)	PR	175-428	5,7
Family Stylopathidae	† <i>Stylopathes americana</i> (Duchassaing & Michelotti, 1860) (= <i>Antipathes americana</i> Duchassaing & Michelotti, 1860)	VI	37-532	7,8,9,10
	† <i>Stylopathes columnaris</i> (Duchassaing, 1870) (= <i>Antipathes columnaris</i> )	VI	73-567	5,6
<b>Order Scleractinia</b>				
Family Caryophylliidae	<i>Anomocora fecunda</i> (Pourtalès, 1871)	VI	37-640	11
	<i>Caryophyllia</i> (C.) <i>ambrosia caribbeana</i> Cairns, 1979	N,PR	183-1646	11
	<i>Caryophyllia</i> (C.) <i>antillarum</i> Pourtalès, 1874	VI	150-730	11,12
	<i>Caryophyllia</i> (C.) <i>berteriana</i> Duchassaing, 1850	PR	99-1033	11,12
	<i>Caryophyllia</i> (C.) <i>corrugata</i> Cairns, 1979	VI	183-380	11
	<i>Caryophyllia</i> (C.) <i>crypta</i> Cairns, 2000	VI	12-183	12
	<i>Caryophyllia</i> (C.) <i>paucipalata</i> Mosely, 1881	VI	714-843	11
	<i>Cladocora debilis</i> Milne Edwards & Haime, 1849	PR	32-480	12
	<i>Coenocyathus parvulus</i> (Cairns, 1979)	VI	97-399	11,12
	<i>Coenosmilia arbuscula</i> Pourtalès, 1874	VI	74-622	11,12
	<i>Colangia immersa</i> Pourtalès, 1871	PR	1-347	12
	<i>Desmophyllum dianthus</i> (Esper, 1794)	VI	155-2200	11,12
	<i>Desmophyllum striatum</i> Cairns, 1979	VI	277-823	11,12

Higher Taxon	Species	Distribution	Depth Range (m)	References
Family Caryophylliidae, cont.	<b>*<i>Labyrinthocyathus facetus</i> Cairns, 1979</b>	VI	549-860	1
	<i>Lophelia pertusa</i> (Linnaeus, 1758)	PR,VI	146-1200	11,12
	<i>Oxysmilia rotundifolia</i> (Milne Edwards & Haime, 1848)	PR,VI	46-640	11,12
	<i>Paracyathus pulchellus</i> (Philippi, 1842)	PR	17-250	11,12
	<i>Rhizosmilia gerdae</i> Cairns, 1978	PR,VI	123-549	11,12
	<i>Rhizosmilia maculata</i> (Pourtalès, 1874)	PR	1-508	12
	<i>Stephanocyathus</i> (O.) <i>coronatus</i> (Pourtalès, 1867)	N,PR,VI	543-1250	1,11
	<i>Stephanocyathus</i> (S.) <i>diadema</i> (Moseley, 1876)	PR,VI	795-2113	11
	<i>Stephanocyathus</i> (S.) <i>laevifundus</i> Cairns, 1977	N	300-1158	11
	<i>Tethocyathus variabilis</i> Cairns, 1979	PR	320-488	11
	<i>Thalamophyllia riisei</i> (Duchassaing & Michelotti, 1860)	VI	4-914	11,12
	<i>Trochocyathus fossulus</i> Cairns, 1979	VI	205-380	11
<i>Trochocyathus rawsonii</i> Pourtalès, 1874	PR	55-700	11,12	
Family Deltocyathidae	<i>Deltocyathus agassizii</i> Pourtalès, 1867	N	495-907	1
	<i>Deltocyathus calcar</i> Pourtalès, 1874	PR,VI	81-675	11,12
	<i>Deltocyathus eccentricus</i> Cairns, 1979	PR,VI	183-907	11
	<i>Deltocyathus italicus</i> (Michelotti, 1838)	PR,VI	403-2634	11
Family Dendrophylliidae	<i>Balanophyllia palifera</i> Pourtalès, 1878	PR	53-708	1,11,12
	<i>Enallopsammia rostrata</i> (Portalès, 1878)	N,VI	300-1646	11
	<i>Rhizopsammia goesi</i> (Lindström, 1877)	VI	5-119	12,13
Family Flabellidae	<i>Flabellum moseleyi</i> Pourtalès, 1880	VI	216-1097	12
	<i>Javania cailleti</i> (Duchassaing & Michelotti, 1864)	N	86-2165	11,12
Family Fungiacyathidae	<b>*<i>Fungiacyathus</i> (B.) <i>crispus</i> (Portalès, 1871)</b>	VI	310-1010	1
	<i>Fungiacyathus</i> (B.) <i>symmetricus</i> (Portalès, 1871)	PR,VI	183-1664	11
Family Oculinidae	<i>Madrepora carolina</i> (Portalès, 1871)	PR,VI	53-801	11,12
	<i>Madrepora oculata</i> Linnaeus, 1758	PR,VI,N	144-1391	11
Family Pocilloporidae	<i>Madracis asperula</i> Milne Edwards & Haime, 1849	PR,VI	24-311	12
	<i>Madracis myriaster</i> (Milne Edwards & Haime, 1849)	PR,VI,N	20-1220	11,12
Family Rhizangiidae	<i>Astrangia poculata</i> (Ellis & Solander, 1786)	PR	0-263	11,12
Family Schizocyathidae	<i>Portalocyathus hispidus</i> (Portalès, 1878)	PR	349-1200	11
	<i>Schizocyathus fissilis</i> Portalès, 1874	PR	88-640	11,12
Family Stenocyathidae	<i>Stenocyathus vermiformis</i> (Portalès, 1868)	VI	165-835	11,12

Higher Taxon	Species	Distribution	Depth Range (m)	References
<b>Class Anthozoa</b>				
<b>Subclass Octocorallia</b>				
<b>Order Alcyonacea</b>				
Family Acanthogorgiidae	<i>Acanthogorgia aspera</i> Pourtalès, 1867	PR	>183	14,15
Family Anthothelidae	<b>*<i>Iciligorgia schrammi</i> Duchassaing, 1870</b>	PR	11-358	14
Family Chrysogorgiidae	<i>Chrysogorgia desbonni</i> Duchassaing & Michelotti, 1864	PR	155-595	1,16
	<i>Chrysogorgia thrysiformis</i> Deichmann, 1936	PR,VI	146-526	1,16
	<i>Metallogorgia splendens</i> (Verrill, 1883)	VI	1061	15
	<i>Iridogorgia</i> sp.	N	1187	1
Family Clavulariidae	<i>Carijoa riisei</i> (Duchassaing & Michelotti, 1860)	PR,VI	1-55	14,15
	<i>Stereotelesto corallina</i> (Duchassaing, 1870)	PR	23-188	14,17
	<i>Telestula</i> sp.	N	1033	1
Family Coralliidae	<i>Corallium</i> sp.	N	1033	1
Family Ellisellidae	<b>*<i>Ellisella atlantica</i> (Toeplitz, 1910)</b>	VI	214-922	15
	<i>Ellisella elongata</i> (Pallas, 1766) (incl. <i>Ellisella barbadensis</i> (Duchassaing & Michelotti, 1864))	PR,VI	15-488	14,17,18
	<b><i>Nicella deichmanae</i> Cairns, 2007</b>	PR	27-403	19
	<i>Nicella guadalupensis</i> (Duchassaing & Michelotti, 1860)	PR,VI	27-395	15,19
	<i>Nicella obesa</i> Deichmann, 1936	N,PR,VI	174-819	1,15,19
	<b><i>Nicella toeplitzae</i> Viada &amp; Cairns, 2007</b>	PR	55-329	1
	<i>Riisei paniculata</i> Duchassaing & Michelotti, 1860	PR	110-704	19
Family Isididae	<b>*<i>Acanella arbuscula</i> (Johnson, 1862)</b> (including <i>Acanella eburnea</i> (Portalès, 1868))	VI	1033	15
	<b>*<i>Keratoisis flexibilis</i> (Portalès, 1868)</b>	VI	170-878	20
	<b>*<i>Lepidisis longiflora</i> Verrill, 1883</b>	VI	958-1161	15
Family Nephtheidae	<i>Stereonephthya portoricensis</i> Hargitt & Rogers, 1901	PR	>200	3
Family Nidaliidae	<b>*<i>Nidalia deichmanae</i> Utinomi, 1954</b> (= <i>Nidalia rigida</i> Deichmann, 1936)	VI	80	15
	<b>*<i>Nidalia occidentalis</i> Gray, 1835</b>	PR,VI	37-311	1,15
	<b>*<i>Siphonogorgia agassizii</i> (Deichmann, 1936)</b> (= <i>Neospongodes agassizi</i> Deichmann, 1936)	VI	214	15
Family Plexauridae	<b>*<i>Acanthacis austera</i> Deichmann, 1936</b>	PR	>200	1
	<i>Bebryce cinerea</i> Deichmann, 1936	PR	>200	1
	<b>*<i>Lytreaia plana</i> (Deichmann, 1936)</b>	PR	104	1
	<b>*<i>Paramuricea echinata</i> Deichmann, 1936</b>	VI	1061	15
	<b>*<i>Placogorgia rudis</i> Deichmann, 1936</b>	PR	104	1

Higher Taxon	Species	Distribution	Depth Range (m)	References
Family Plexauridae, cont.	<i>Placogorgia tenuis</i> (Verrill, 1883)	PR	>200	1
	* <i>Pseudoplexaura porosa</i> (Houttuyn, 1772)	PR	3-283	1
	<i>Scleracis petrosa</i> Deichmann, 1936	PR	275-1607	1,15,21
	<i>Swiftia exserta</i> (Ellis & Solander, 1786)	PR	18-494	15,22
	* <i>Thesea nutans</i> Duchassaing & Michelotti, 1864 (= <i>Caliacis nutans</i> (Duchassaing & Michelotti, 1864))	PR	183	1
	* <i>Villogorgia nigrescens</i> Duchassaing & Michelotti, 1860	N,VI	176-275	1,15
Family Primnoidae	<i>Acanthoprimnoa goesi</i> (Aurivillius, 1931)	PR,VI	137-595	23
	<i>Acanthoprimnoa pectinata</i> Cairns & Bayer, 2004	PR	194-686	1,23
	† <i>Callogorgia americana</i> Cairns & Bayer, 2002 (= <i>Callogorgia americana americana</i> Cairns & Bayer, 2002)	PR	183-732	24
	<i>Narella bellissima</i> (Kükenthal, 1915)	PR	161-792	25
	<i>Narella pauciflora</i> Deichmann, 1936	PR,VI	738-1473	15,25
	* <i>Primnoella polita</i> Deichmann, 1936	VI	922	26
Family Spongiodermatidae	<i>Diodogorgia nodulifera</i> (Hargitt & Rogers, 1901)	PR	14-183	14,17,27
<b>Order Pennatulacea</b>				
Family Anthoptilidae	* <i>Anthoptilum murrayi</i> Kölliker, 1880	PR	512	1
Family Protoptilidae	* <i>Protoptilum thomsoni</i> Kölliker, 1872	PR	329-512	1
Family Renillidae	<i>Renilla reniformis</i> (Pallas, 1766)	PR	0-108	14,28
Family Umbellulidae	* <i>Umbellula lindahli</i> Kölliker, 1875	VI	567	1

Higher Taxon	Species	Distribution	Depth Range (m)	References
<b>Class Hydrozoa</b>				
<b>Subclass Hydroidolina</b>				
<b>Order Anthoathecata</b>				
Family Stylasteridae	<i>Crypthelia glossopoma</i> Cairns, 1986	VI	198-864	29
	<i>Crypthelia peircei</i> Pourtalès, 1867	VI	159-837	29
	<i>Crypthelia tenuiseptata</i> Cairns, 1986	VI	761-1061	29
	<i>Distichopora cervina</i> Pourtalès, 1867	PR	68-384	29
	<i>Pliobothrus echinatus</i> Cairns, 1986	PR	164-708	29
	<i>Pliobothrus symmetricus</i> Pourtalès, 1868	PR	150-400	29
	<i>Pliobothrus tubulatus</i> (Portalès, 1867)	PR	419-708	29
	† <i>Stenohelia profunda</i> Moseley, 1881 (= <i>Stylaster profundus</i> Moseley, 1881)	PR,VI	159-2012	29

Higher Taxon	Species	Distribution	Depth Range (m)	References
Family Stylasteridae, cont.	<i>Stylaster antillarum</i> Zibrowius & Cairns, 1982	PR	174-653	29
	<i>Stylaster atlanticus</i> Broch, 1936	PR	823	29
	<i>Stylaster complanatus</i> Pourtalès, 1867	VI	183-707	29
	<i>Stylaster duchassaingi</i> Pourtalès, 1867	VI	46-692	29
	<i>Stylaster roseus</i> (Pallas, 1766)	PR	1-373	29
	<i>Stylaster spatula</i> Cairns, 1986	PR	384-549	29

## Literature Cited

Lutz SJ, Ginsberg RN (2007) State of Deep Coral Ecosystems in the Caribbean region: Puerto Rico and the U.S. Virgin Islands. In: Lumsden SE, Hourigan TF, Bruckner AW, Dorr G (eds) [The State of Deep Coral Ecosystems of the United States](#). NOAA Technical Memorandum CRCP-3. Silver Spring, MD

## References

1. NMNH (2016) NMNH Invertebrate Zoology Collections - Online Collection Database; Accessed 02/12/2016. In: National Museum of Natural History SI (ed), Washington, D.C.
2. Opresko DM (1996) New species of black coral (Cnidaria: Anthozoa: Antipatharia) from the Caribbean. *Bulletin of Marine Science* 58:289-300
3. Opresko DM, Sánchez JA (2005) Caribbean shallow-water black corals (Cnidaria: Anthozoa: Antipatharia). *Caribbean Journal of Science* 41:492-507
4. UNEP-WCMC (2005) Checklist of fish and invertebrates listed in the CITES appendices and the EC Regulation 338/97, 7th edition. JNCC Report 379. United Nations Environment Programme – World Conservation Monitoring Centre
5. Opresko DM (2006) Antipatharia corals reported from the Caribbean. Unpublished list
6. Opresko DM (1974) A study of the classification of the Antipatharia (Coelenterata:Anthozoa) with redescrptions of eleven species. Ph.D., University of Miami, Miami, FL
7. Opresko DM (1972) Redescrptions and reevaluations of the antipatharians described by L.F. de Pourtales. *Bulletin of Marine Science* 97:950-1017
8. Brook G (1889) Report on the Antipatharia. Report of the scientific results of the voyage of the H.M.S. Challenger. *Zoology* 32:1-222
9. Warner GF (1981) Species descriptions and ecological observations of black corals (Antipatharia) from Trinidad. *Bulletin of Marine Science* 31:147-163
10. Opresko DM (2006) Revision of the Antipatharia (Cnidaria: Anthozoa). Part V. Establishment of a new family, Stylopathidae. *Zool Med Leiden* 80-4:109-138
11. Cairns SD (1979) The deepwater Scleractinia of the Caribbean Sea and adjacent waters. *Studies on the fauna of Curaçao and other Caribbean Islands* 57:1-341
12. Cairns SD (2000) A revision of the shallow-water azooxanthellate Scleractinia of the western Atlantic. *Studies on*

the Fauna of Curacao and other Caribbean Islands 75:1-240

13. Cairns SD (1977) A revision of the Recent species of *Balanophyllia* (Anthozoa: Scleractinia) in the western Atlantic, with the description of four new species. *Proc Biol Sci Wash* 90:132-148
14. Bayer FM (1961) The shallow-water Octocorallia of the West Indian Region. *Studies on the Fauna of Curaçao and other Caribbean Islands* 12:1-373
15. Deichmann E (1936) The Alcyonaria of the western part of the Atlantic Ocean. *Mem Mus Comp Zool Harvard Univ* 53:1-137
16. Cairns SD (2001) Studies on western Atlantic Octocorallia (Coelenterata: Anthozoa). Part 1: The genus *Chrysogorgia* Duchassaing & Michelotti, 1864. *Proceedings of the Biological Society of Washington* 114:746-787
17. Humann P (1993) Reef Coral Identification: Florida, Caribbean, Bahamas. New World Publications, Jacksonville
18. Armstrong RA, Singh H, Torres J, Nemeth RS, Can A, Roman C, Eustice R, Riggs L, Garcia-Moliner G (2006) Characterizing the deep insular shelf coral reef habitat of the Hind Bank marine conservation district (US Virgin Islands) using the Seabed autonomous underwater vehicle. *Continental Shelf Research* 26:194-205
19. Cairns SD (2007) Studies on western Atlantic Octocorallia (Gorgonacea: Ellisellidae). Part 7: The genera *Riisea* Duchassaing & Michelotti, 1860 and *Nicella* Gray, 1870. *Proceedings of the Biological Society of Washington* 120:1-38
20. YPN (2015) Yale Peabody Museum of Natural History - Invertebrate Zoology Collections.
21. Veronique PT (1987) Annotated checklist of the Gorgonacea from Martinique and Guadeloupe Islands (F.W.I.). *Atoll Research Bulletin* 303:16
22. Cairns SD (2005) Western Atlantic deep-water (over 200 m) Octocorallia. Unpublished list
23. Cairns SD, Bayer FM (2004) Studies on Western Atlantic Octocorallia (Coelenterata: Anthozoa). Part 5: The Genera *Plumarella* Gray, 1870; *Acanthoprimnoa*, n. Gen.; and *Candidella* Bayer, 1954. *Proceedings of the Biological Society of Washington* 117:447-487
24. Cairns SD, Bayer FM (2002) Studies on western Atlantic Octocorallia (Coelenterata, Anthozoa): Part 2: The genus *Callogorgia* Gray, 1858. *Proceedings of the Biological Society of Washington* 115:840-867
25. Cairns SD, Bayer FM (2003) Studies on western Atlantic Octocorallia (Coelenterata: Anthozoa). Part 3. The genus *Narella* Gray, 1870. *Proceedings of the Biological Society of Washington* 116:617-648
26. Cairns SD (2006) Studies on western Atlantic Octocorallia (Coelenterata, Anthozoa): Part 6: The genera *Primnoella* Gray, 1858; *Thouarella* Gray, 1870; *Dasystenella* Versluys, 1906. *Proceedings of the Biological Society of Washington* 119:161-194
27. Cairns SD, Wirshing HH (2015) Phylogenetic reconstruction of scleraxonian octocorals supports the resurrection of the family Spongiodermidae (Cnidaria, Alcyonacea). *Invertebrate Systematics* 29:345-368
28. Gosner KL (1978) Peterson Field Guides, Atlantic Seashore from the Bay of Fundy to Cape Hatteras. Houghton Mifflin
29. Cairns SD (1986) A Revision of the Northwest Atlantic Stylasteridae (Coelenterata:Hydrozoa). *Smithsonian Contributions to Zoology* 418:1-131