

Supplementary material

Revision of the genus *Plexaurella* Kölliker, 1865 (Anthozoa: Octocorallia) and resurrection of Plexaurellidae Verrill, 1912 new rank

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Table S1. Specimens of *Plexaurella* spp. examined with their current identification (except types) and their collection data

Type specimens are in bold. Museum abbreviations: MCZ, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; MOUFPE, Museu Oceanográfico Petrônio Alves Coelho; MNRJ, Museu Nacional, Rio de Janeiro; SMF, Senckenberg Gesellschaft für Naturforschung, Frankfurt; USNM, United States National Museum (National Museum of Natural History), Washington, DC; YPM, Yale Peabody Museum of Natural History, New Haven, CT; ZMB, Zoologisches Museum, Berlin. See

IS21003_TS1-3.xlsx

Table S2. GenBank accession numbers and vouchers of octocoral taxa included in the phylogenetic analysis, according to their families

Bold format indicates newly sequenced individuals. See IS21003_TS1-3.xlsx

Table S3. *p*-distances between concatenate datasets (*COI+igr+msh1*)

See IS21003_TS1-3.xlsx

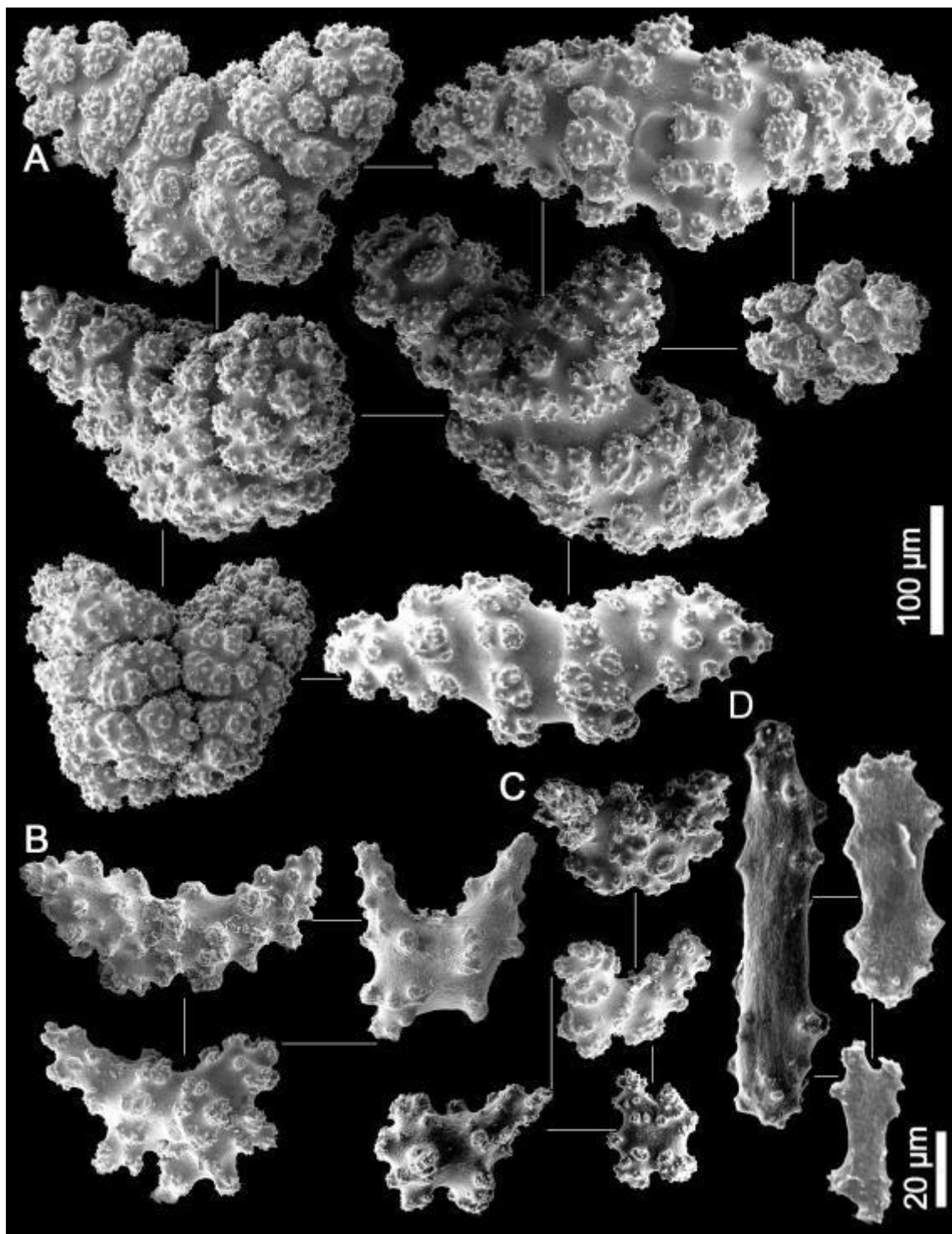


Fig. S1. Sclerites of *Plexaurella dichotoma* (USNM 1122672) from Netherlands Antilles. A, butterflies from middle layer; B, sclerites from axial layer; C, cortical sclerites; D, rods from polyp body wall.

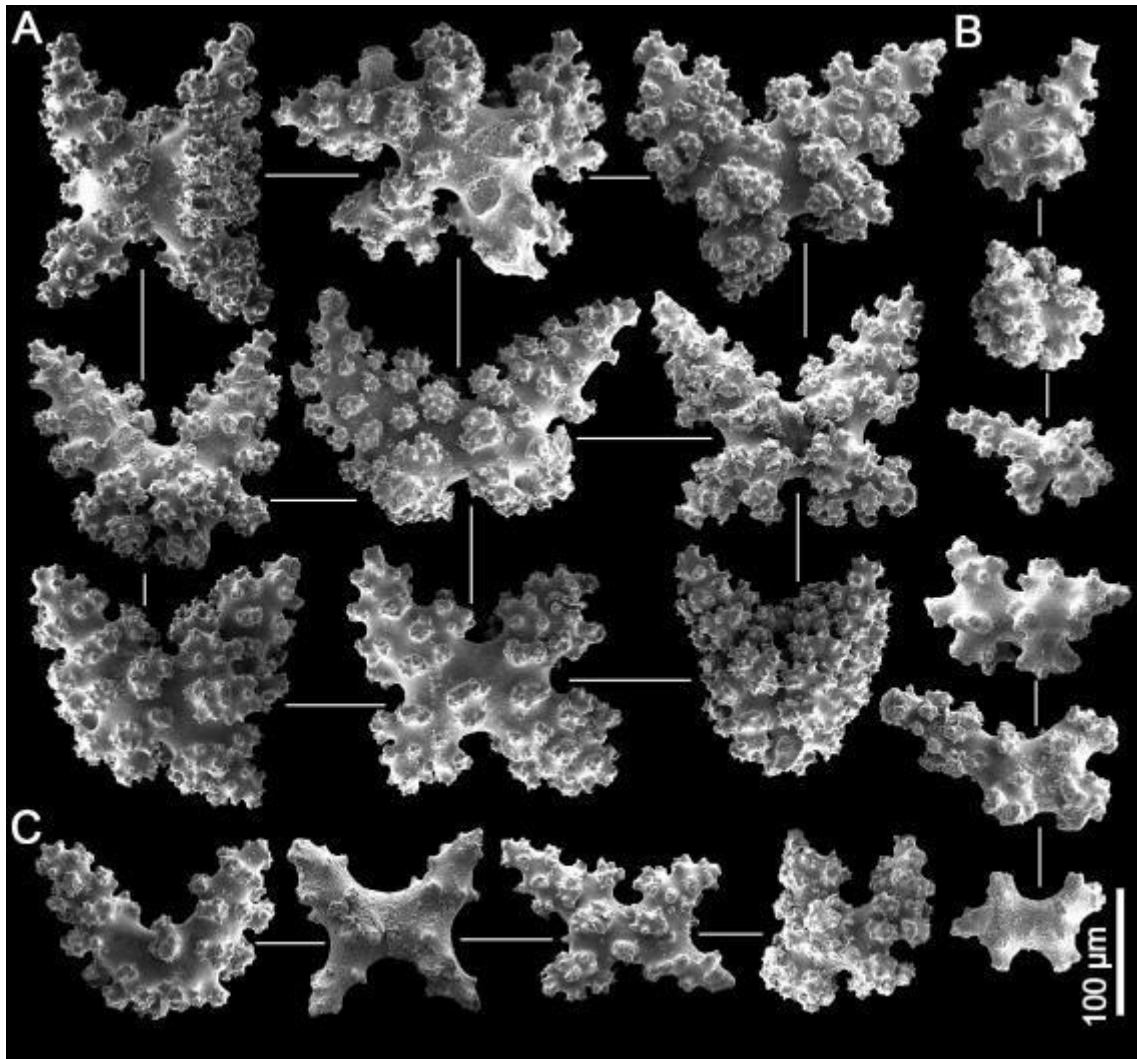


Fig. S2. Sclerites of *Plexaurella dichotoma* (USNM 7525) from Jamaica. A, butterflies from middle layer; B, cortical sclerites; C, butterflies from axial layer; E, cortical sclerites.

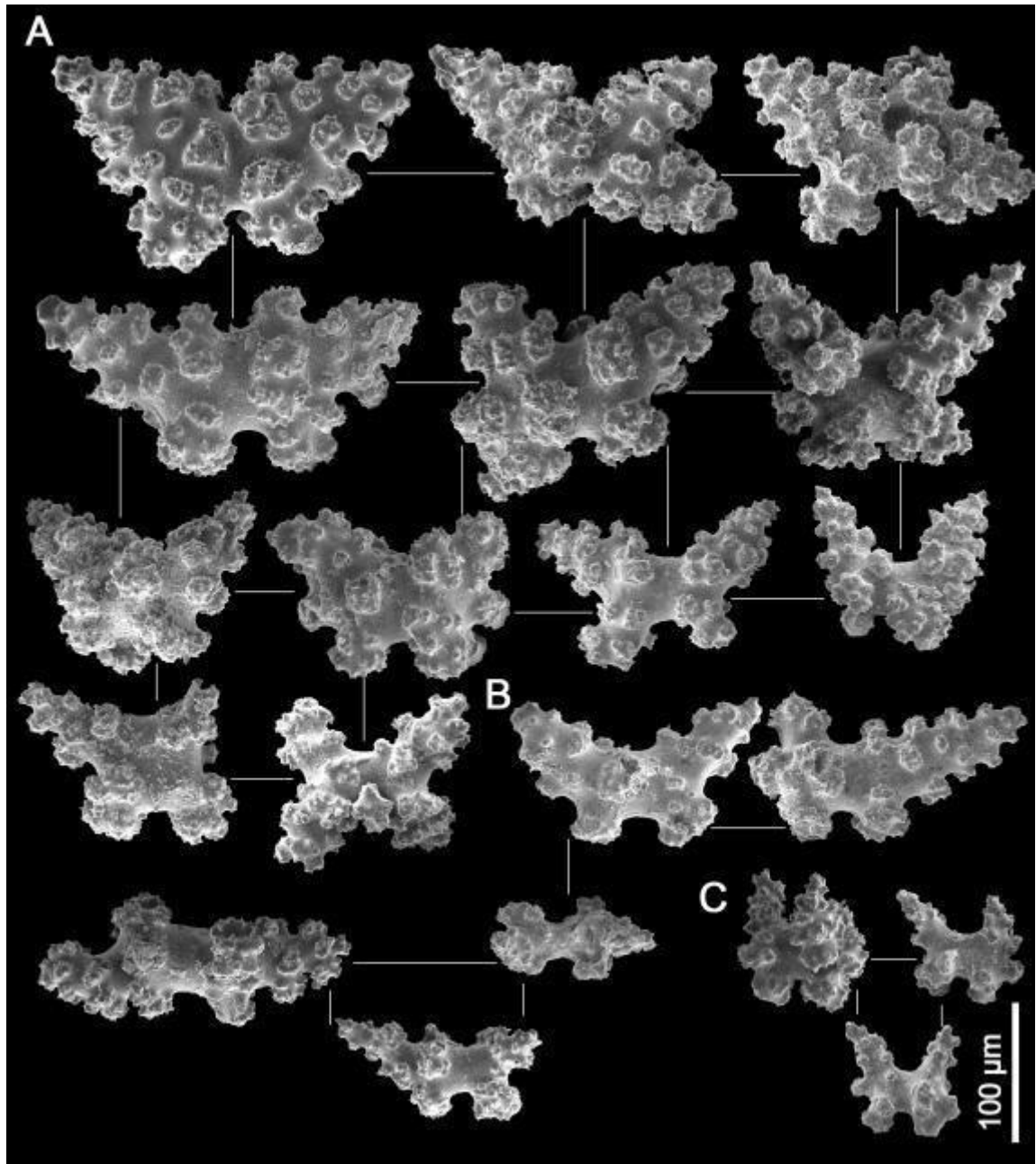


Fig. S3. Sclerites of *Plexaurella dichotoma* (USNM 50711) from Ensenada De Cajon, Cuba. A, butterflies from middle layer; B, sclerites from axial layer; C, cortical sclerites.

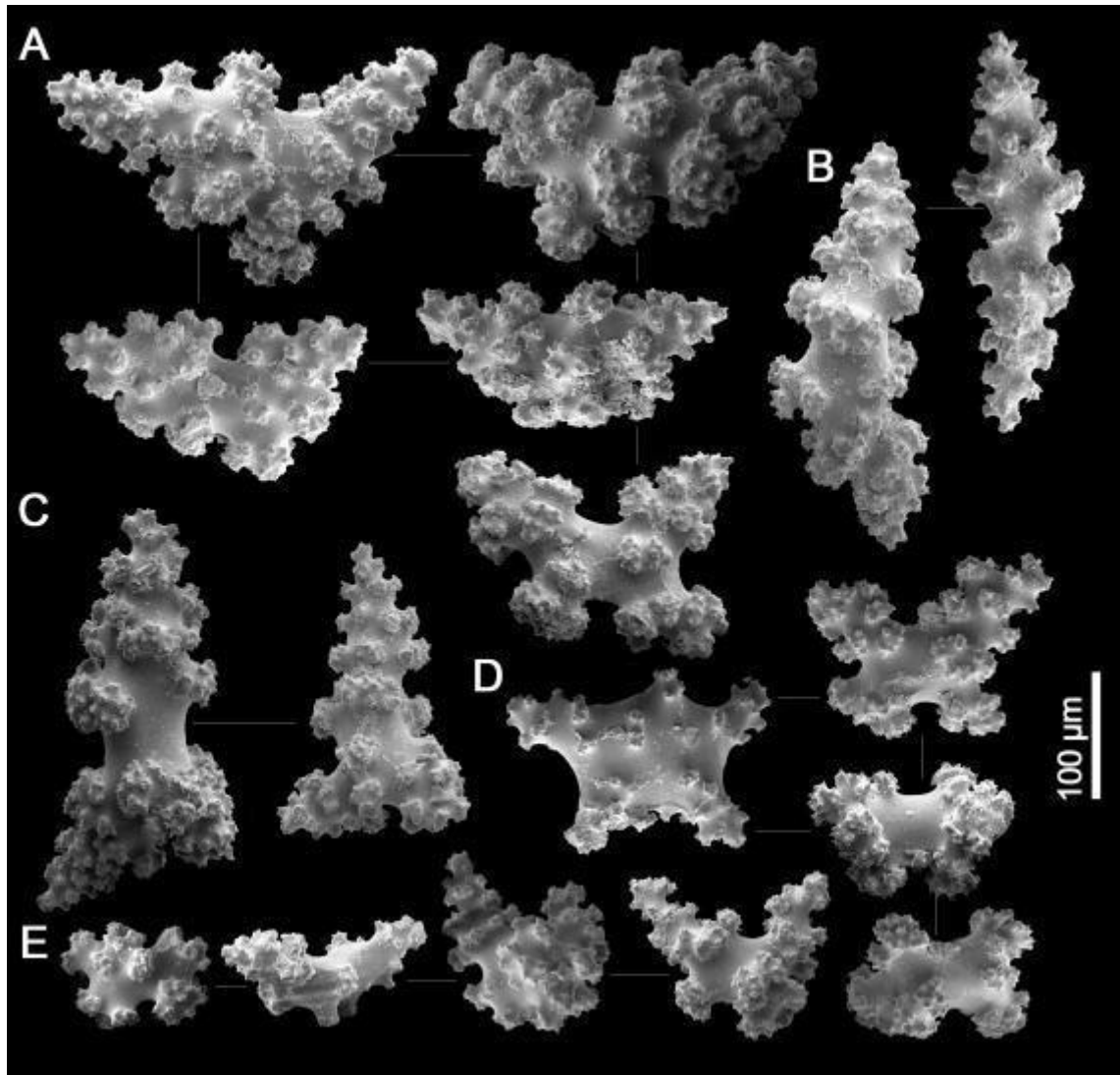


Fig. S4. Sclerites of *Plexaurella dichotoma* (USNM 50602) from Florida. A, butterflies from middle layer; B, spindles from middle layer; C, tri-radiates from middle layer; D, irregular butterflies from axial layer; E, sclerites from cortical layer.

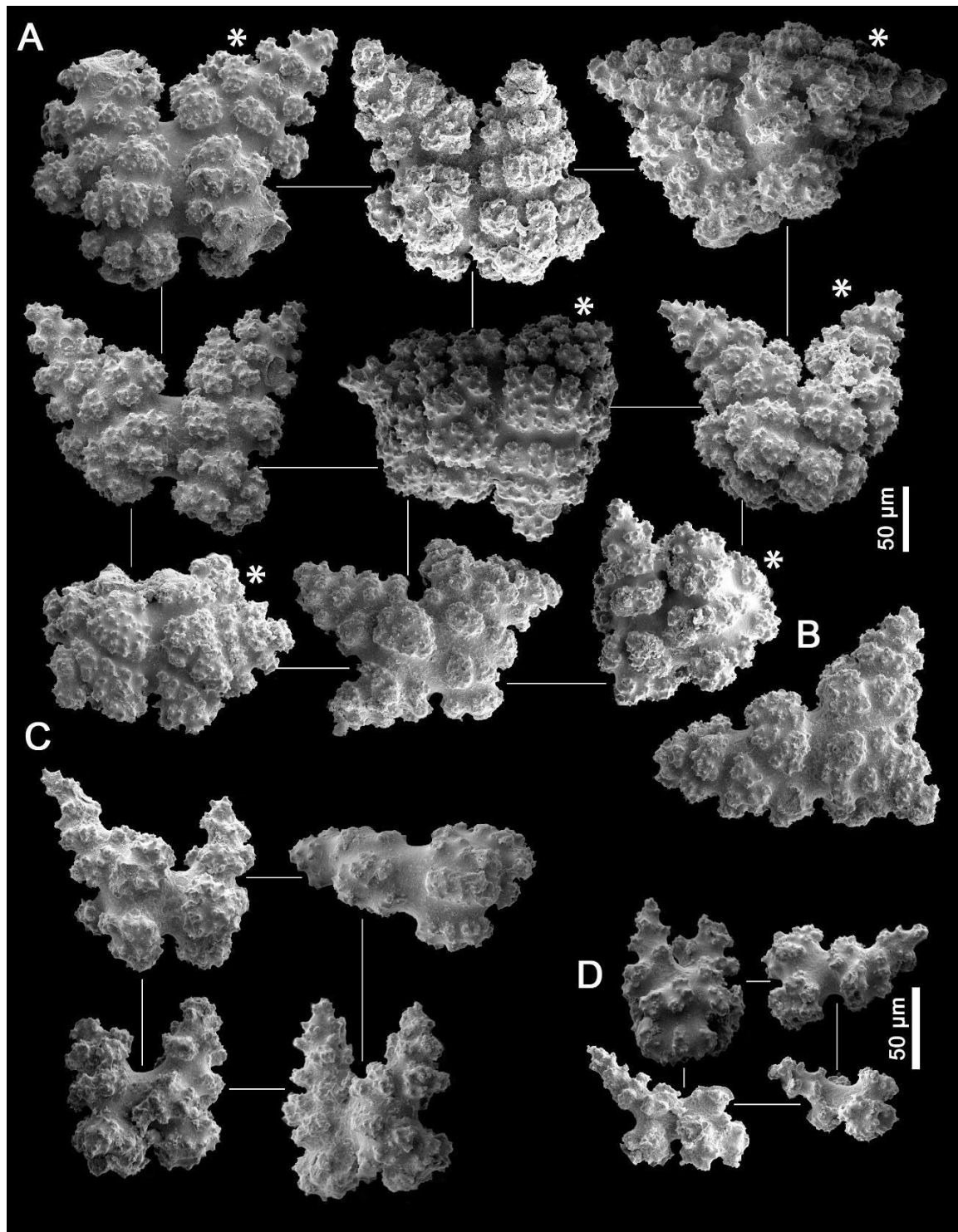


Fig. S5. Sclerites of *Plexaurella teres* (USNM 79366) from Bahamas. A, butterflies from middle layer; B, tri-radiate from middle layer; C, sclerites from axial layer; D, cortical sclerites. An asterisk (*) indicates six-radiate sclerites.

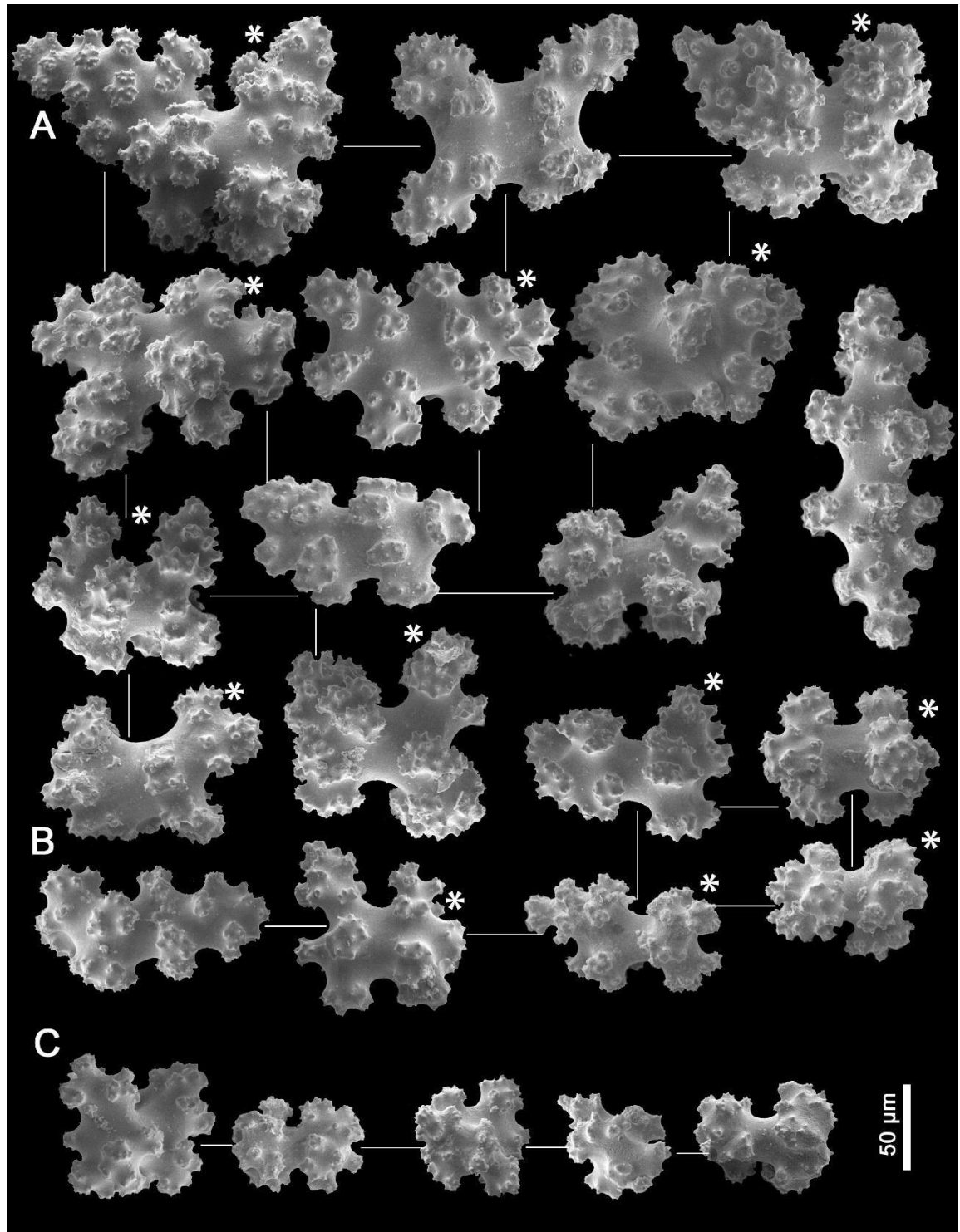


Fig. S6. Sclerites of *Plexaurella teres* (USNM 84093) from West of Cape Sable (Gulf of Mexico, Florida). A, butterflies from middle layer; B, spindle from middle layer; C, sclerites from axial layer; D, cortical sclerites. An asterisk (*) indicates six-radiate sclerites.

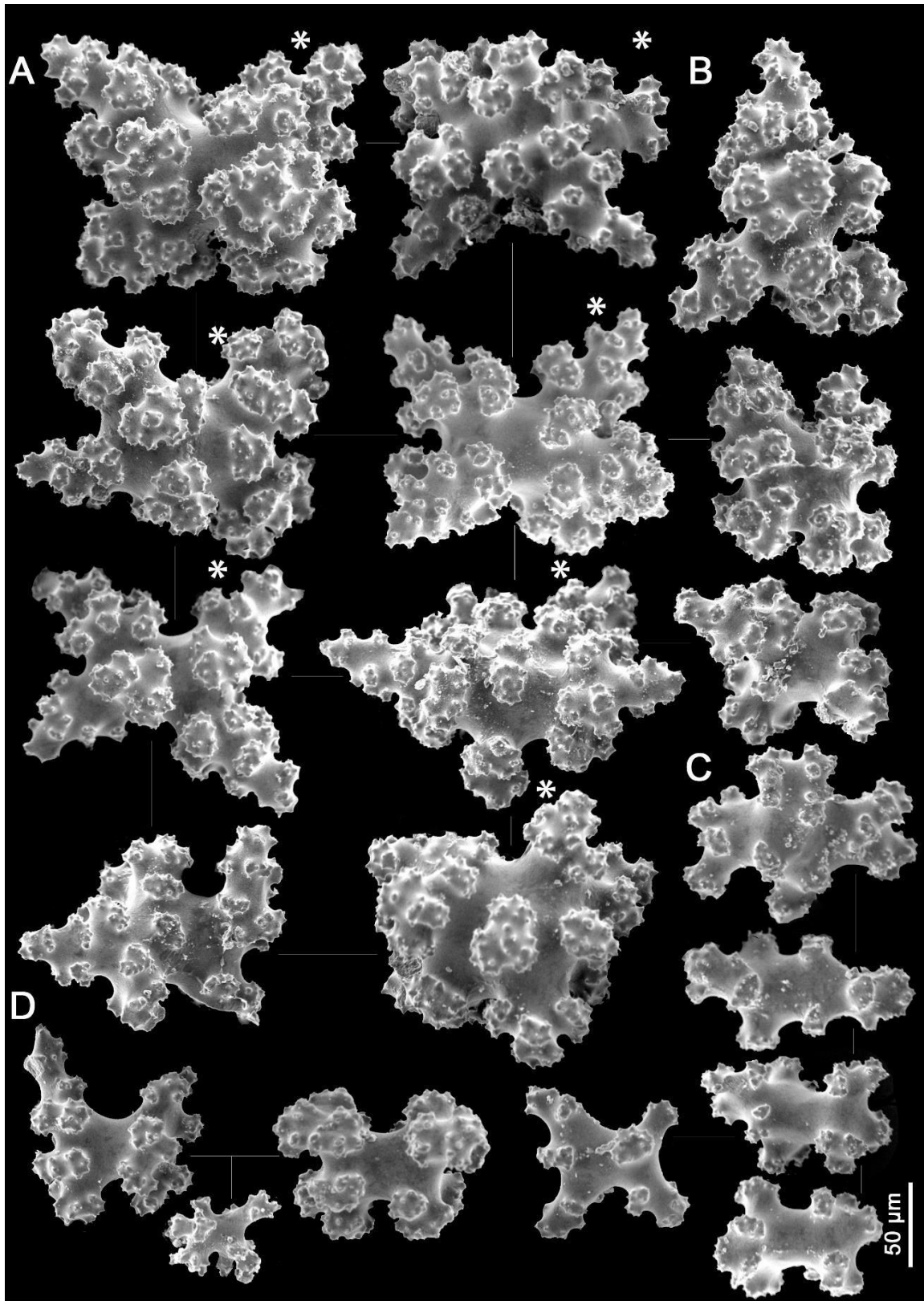


Fig. S7. Sclerites of *Plexaurella teres* (USNM 50962) from Antigua and Barbuda. A, butterflies and six-rotate from middle layer; B, triradiate from middle layer; C, sclerites from axial layer; D, sclerites from cortical layer. An asterisk (*) indicates six-rotate sclerites.

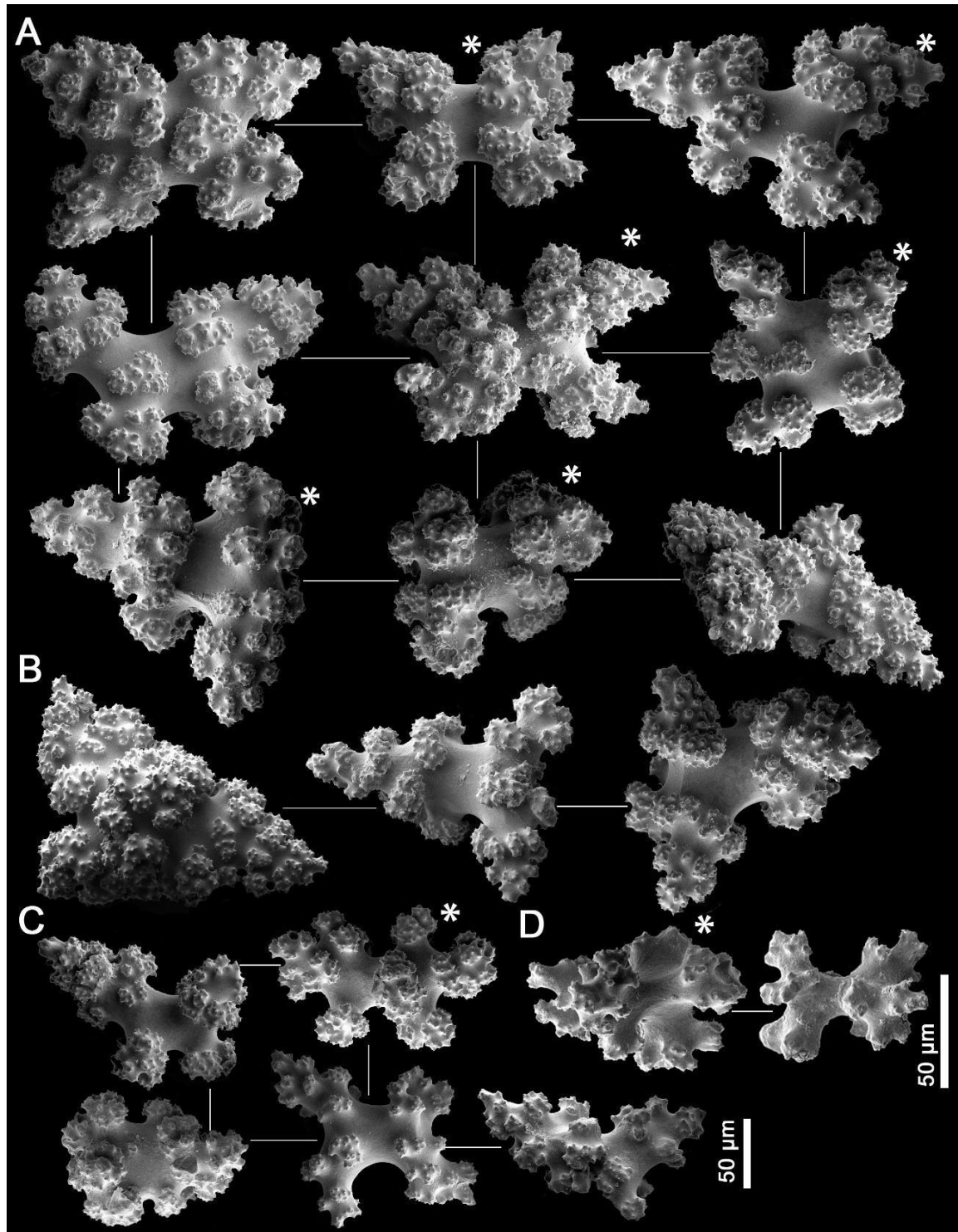


Fig. S8. Sclerites of *Plexaurella teres* (USNM 50688) from Swan Islands, Honduras. A, butterflies from middle layer; B, tri-radiates from middle layer; C, sclerites from axial layer; D, cortical sclerites. An asterisk (*) indicates six-radiate sclerites.

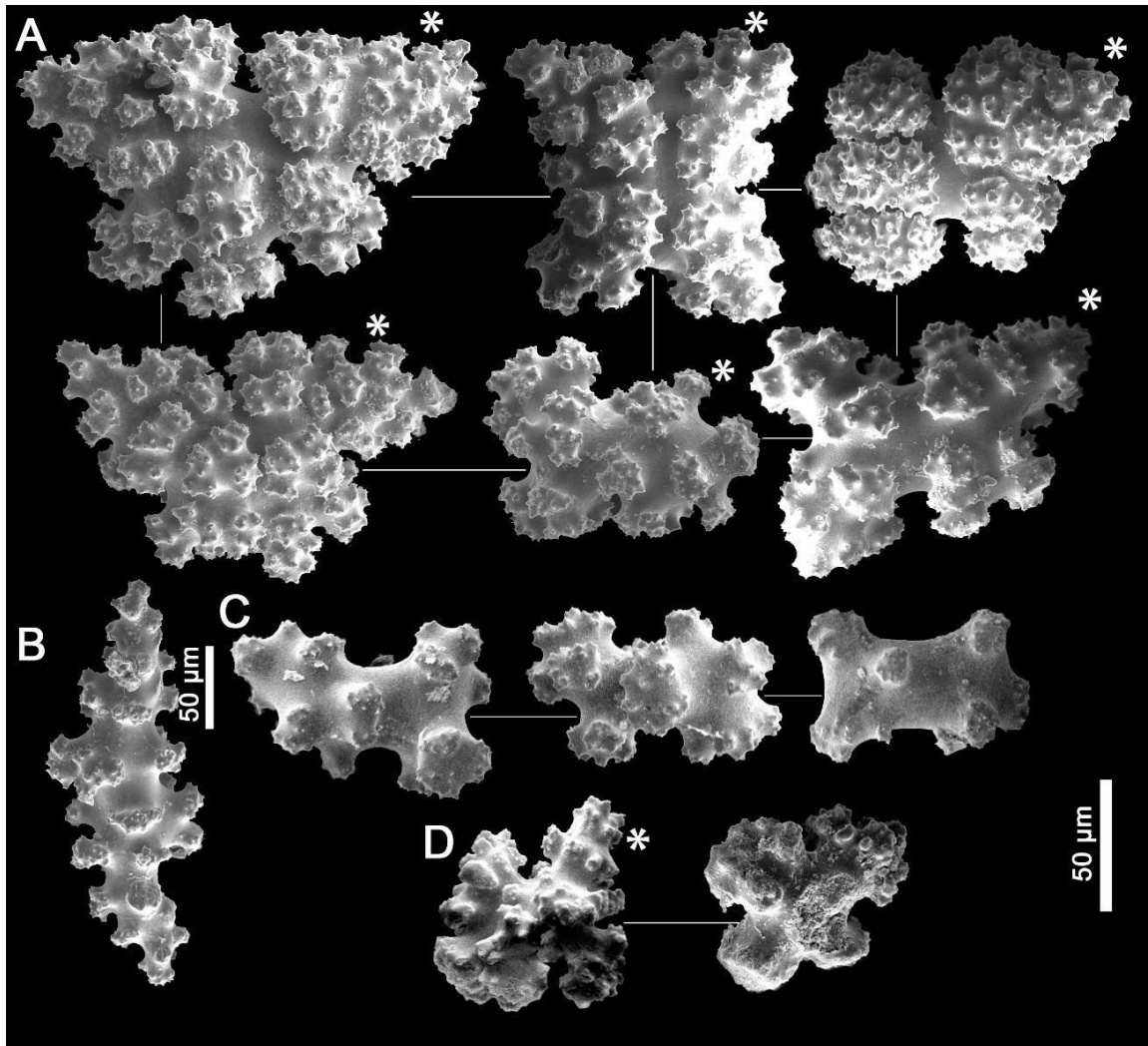


Fig. S9. Sclerites of *Plexaurella teres* (USNM 84095) from West of Cape Sable (Gulf of Mexico, Florida). A, butterflies from middle layer; B, spindle from middle layer; C, sclerites from axial layer; D, cortical sclerites. An asterisk (*) indicates six-radiate sclerites.

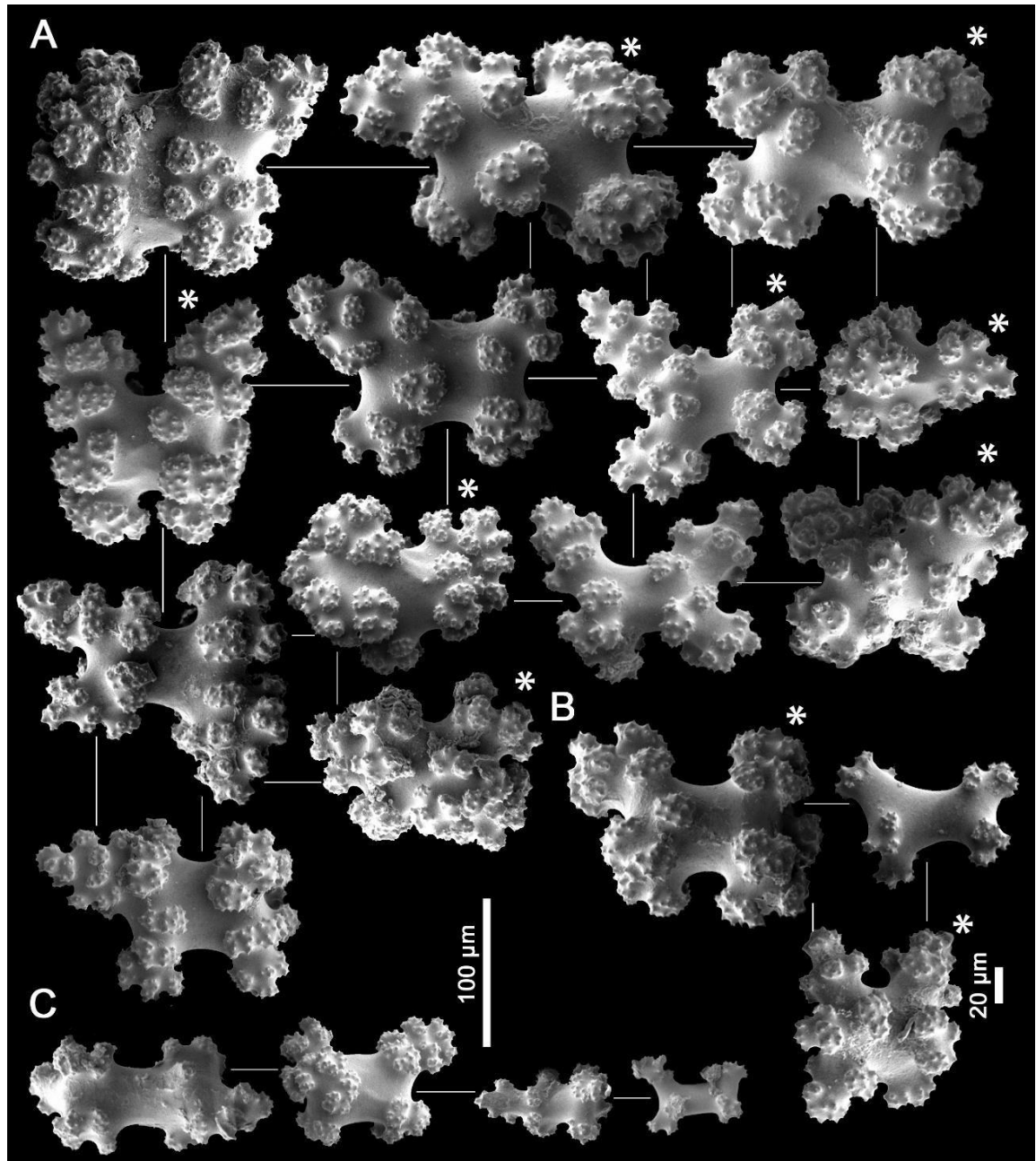


Fig. S10. Sclerites of *Plexaurella teres* (USNM 50534) from Saint Kitts and Nevis. A, butterflies from middle layer; B, cortical sclerites; C, sclerites from axial layer. An asterisk (*) indicates six-radiate sclerites.

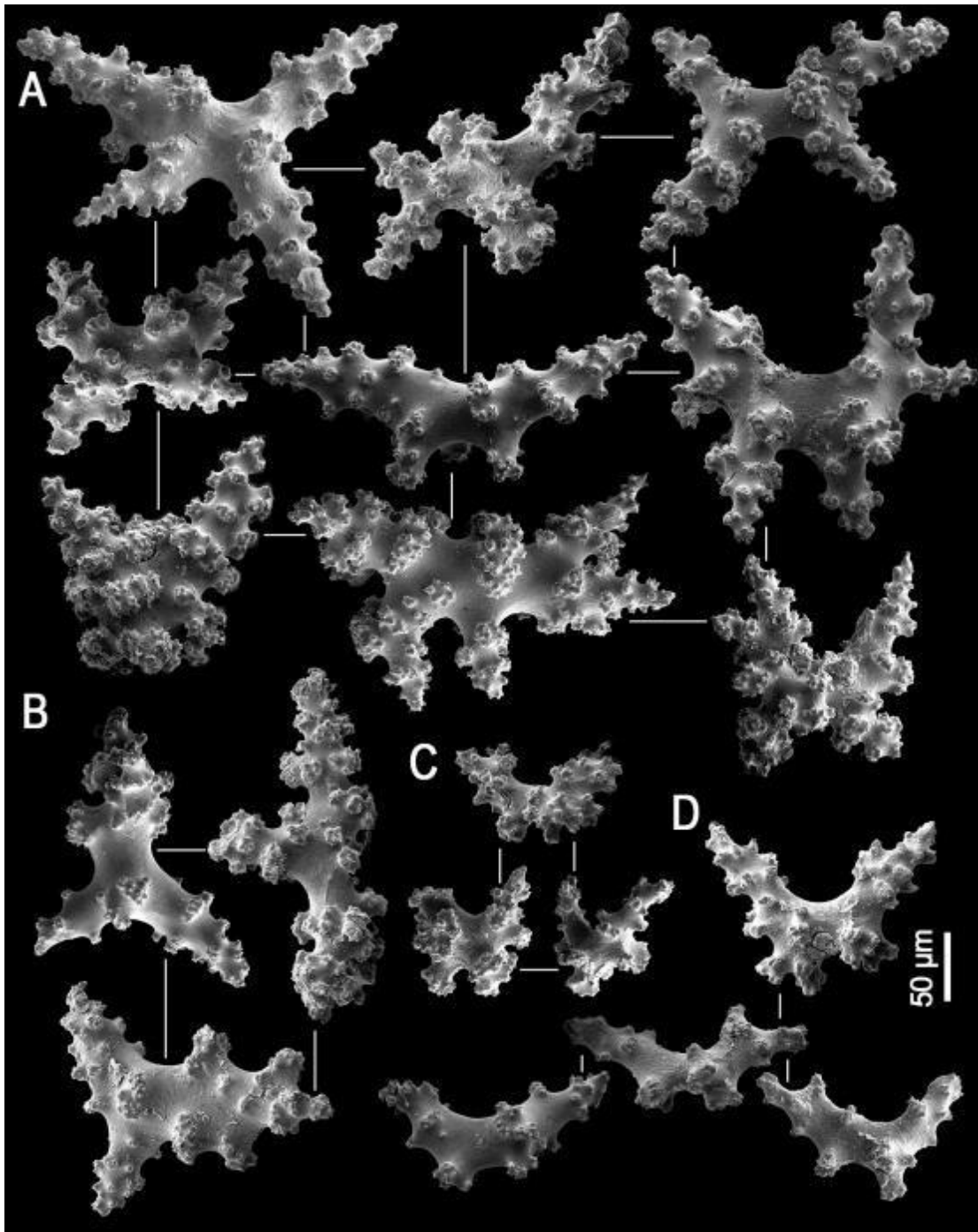


Fig. S11. Sclerites of *Plexaurella grisea* (USNM 7523) from Jamaica. A, butterflies from middle layer; B, tri-radiates from middle layer; C, cortical sclerites; D, butterflies from axial layer.

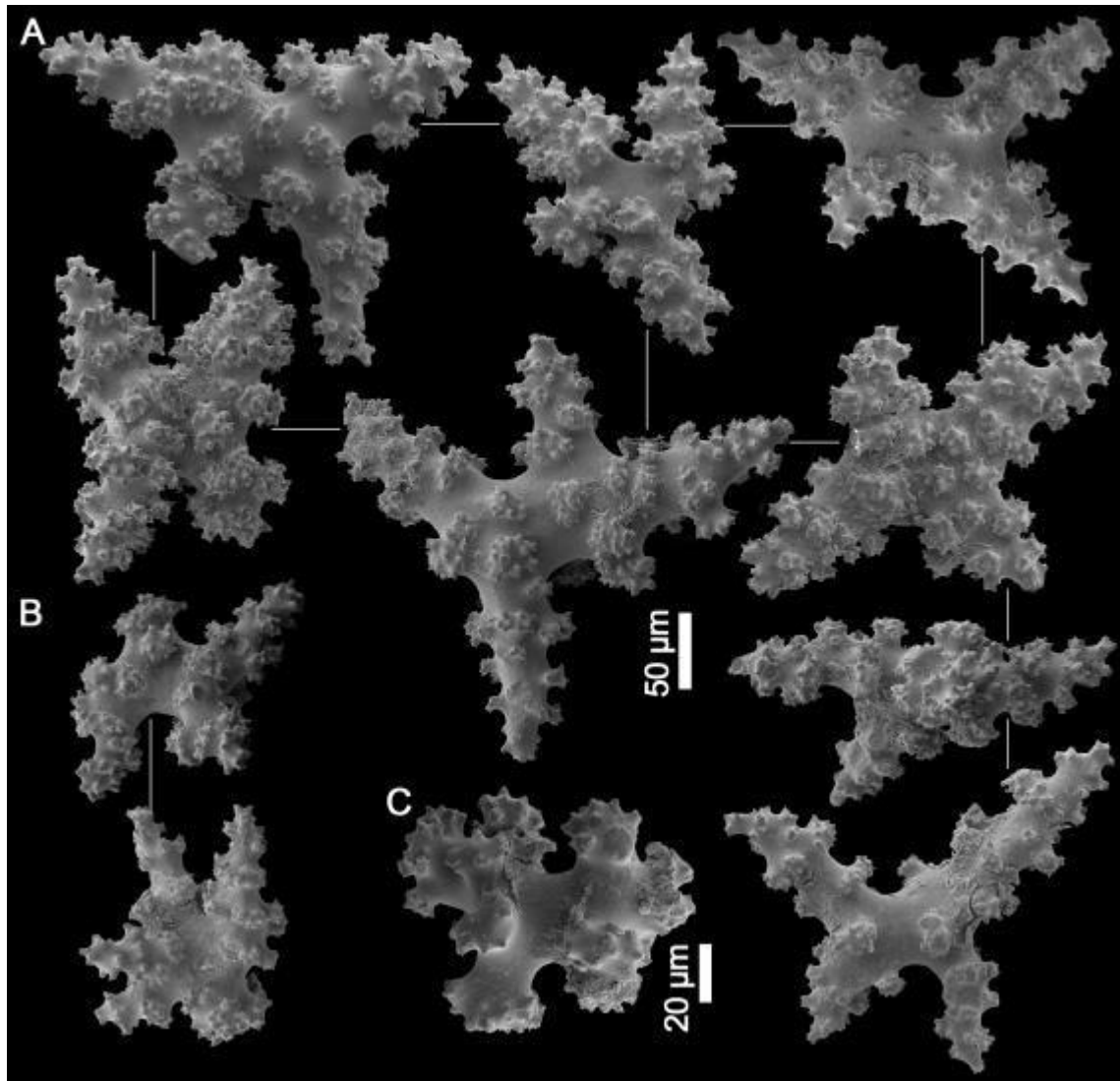


Fig. S12. Sclerites of *Plexaurella grisea* (USNM 1248676) from Venezuela. A, butterflies from middle layer; B, axial sclerites; C, sclerite from cortex.

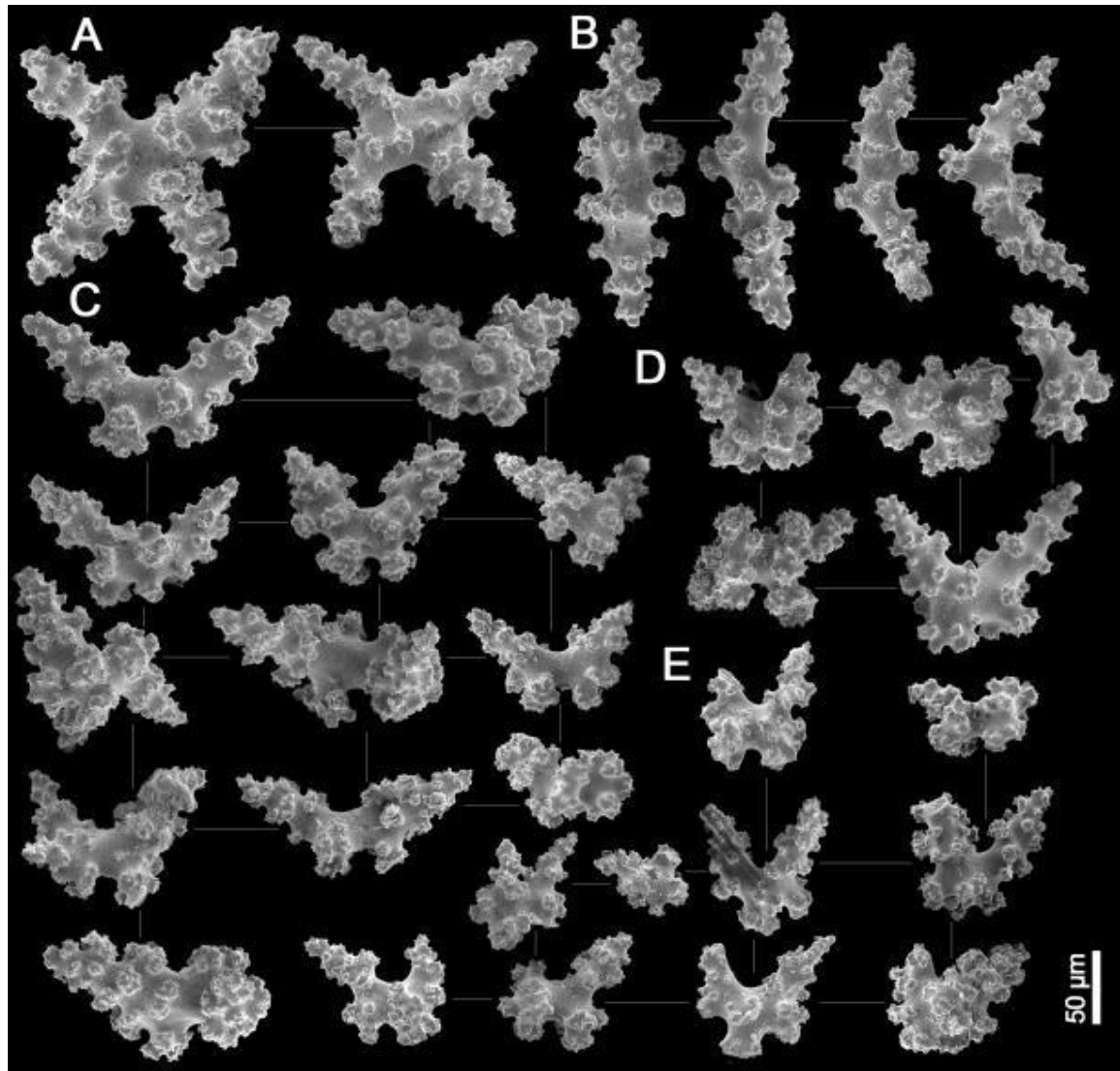


Fig. S13. Sclerites of *Plexaurella grisea* (ZMB 5961 – holotype of *P. curvata*) (?Barbados). A, regular butterflies from middle layer, with two pair of arms equal in size; B, tuberculated spindles from middle layer; C, irregular butterflies from middle layer; D, sclerites from axial layer; E, sclerites from cortical layer.

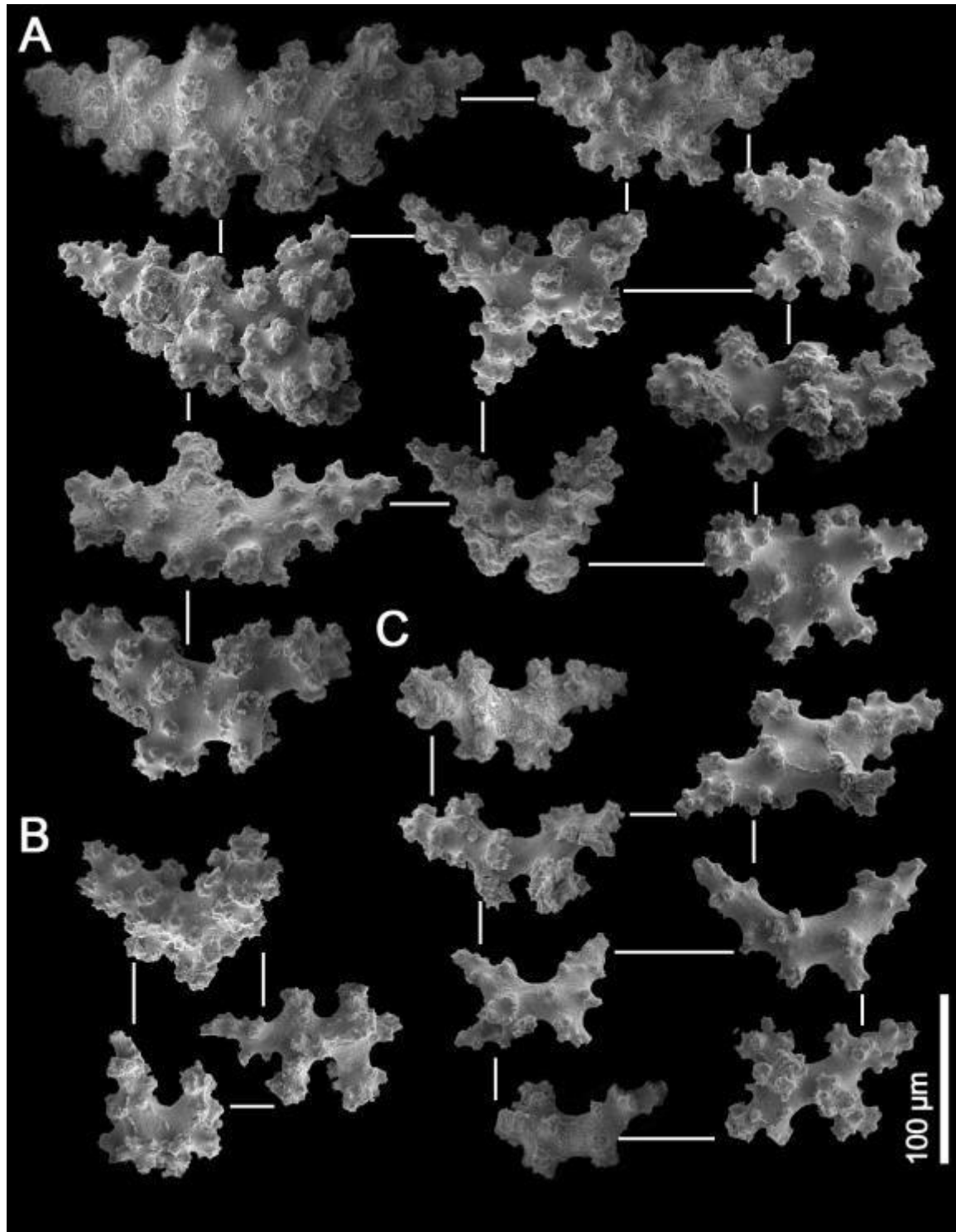


Fig. S14. Sclerites of *Plexaurella grisea* (USNM 7524) from Jamaica. A, butterflies from middle layer; B, cortical sclerites C, sclerites from axial layer.

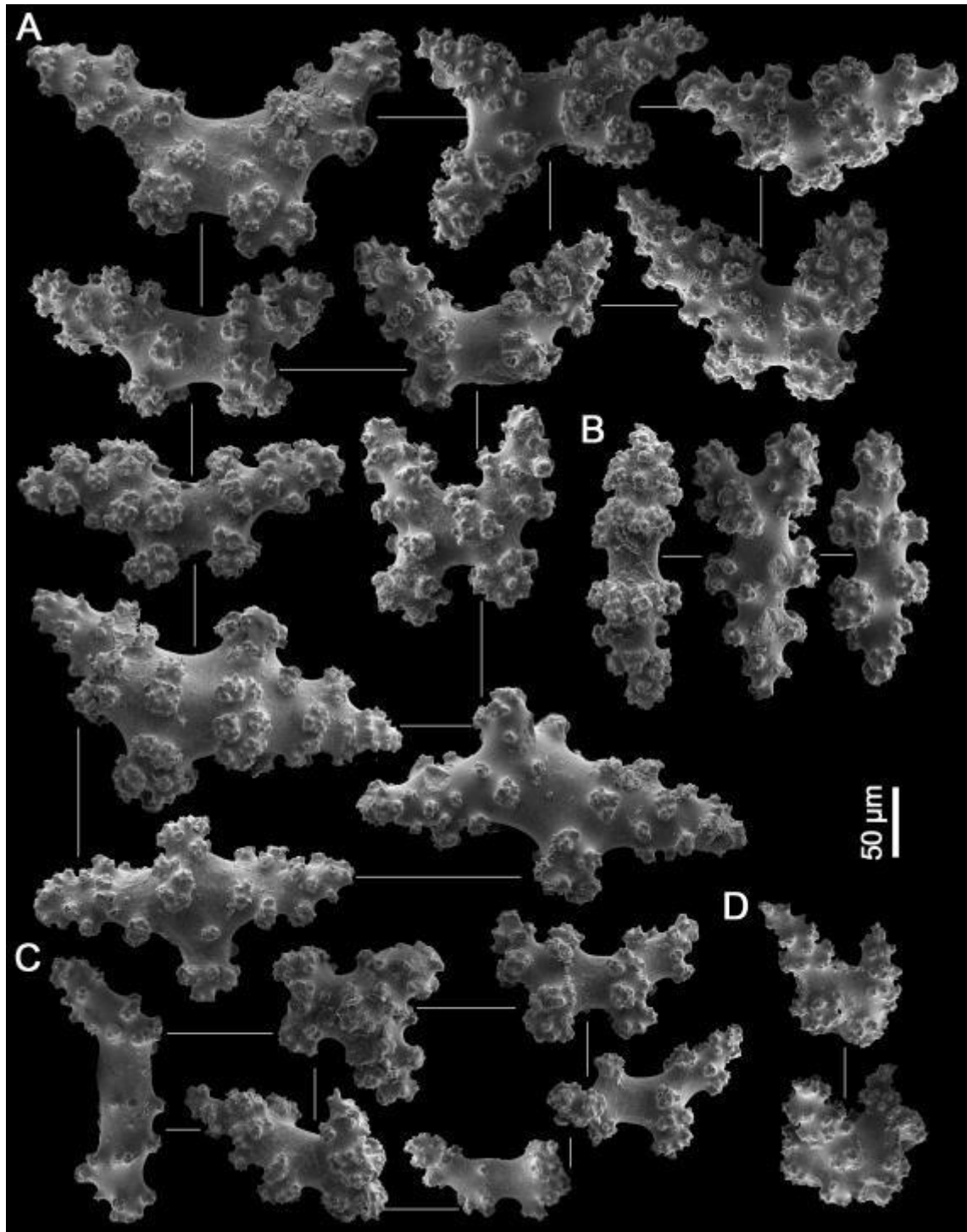


Fig. S15. Sclerites of *Plexaurella grisea* (USNM 54940) from Jamaica. A, butterflies from middle layer; B, spindles and tri-radiates from middle layer; C, axial sclerites; D, cortical sclerites.

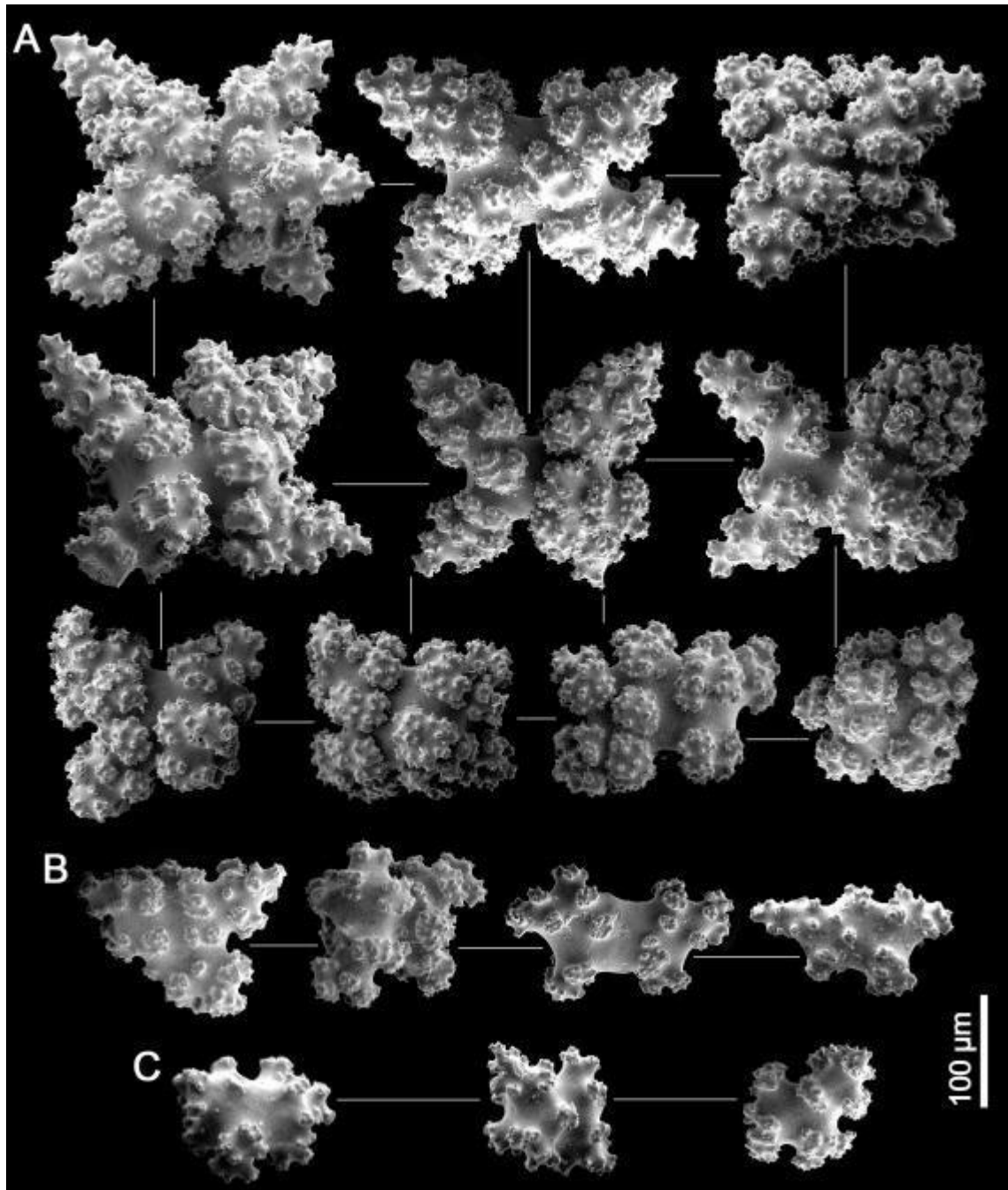


Fig. S16. Sclerites of *Plexaurella rastrera* sp. nov. (USNM 42004) from Barbados. A, butterflies from middle layer; B, sclerites from axial layer; C, cortical sclerites.

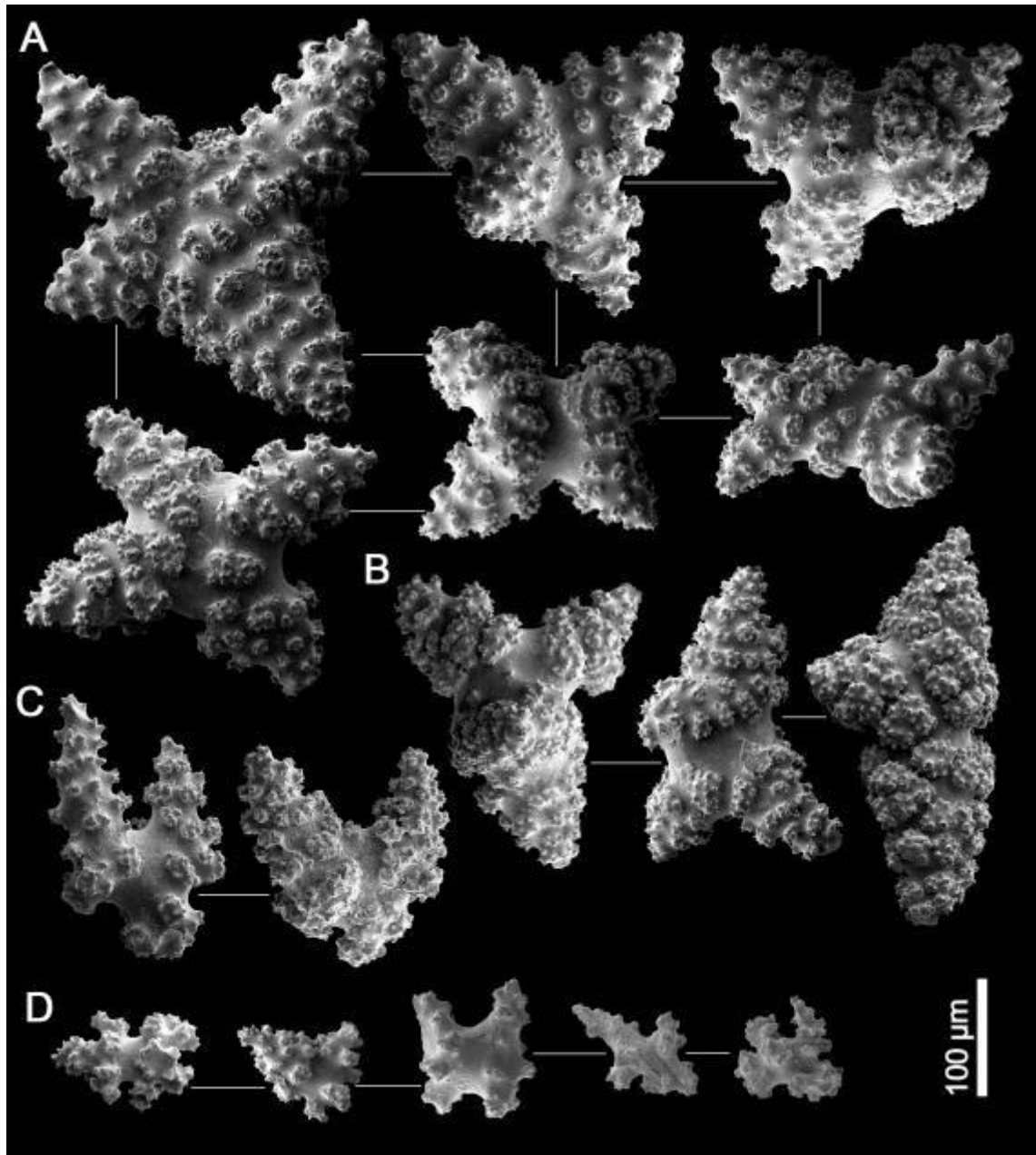


Fig. S17. Sclerites of *Plexaurella rastrera* sp. nov. (USNM 50745) from Anguilla. A, butterflies from middle layer; B, tri-radiates from middle layer C, sclerites from axial layer; D, cortical sclerites.

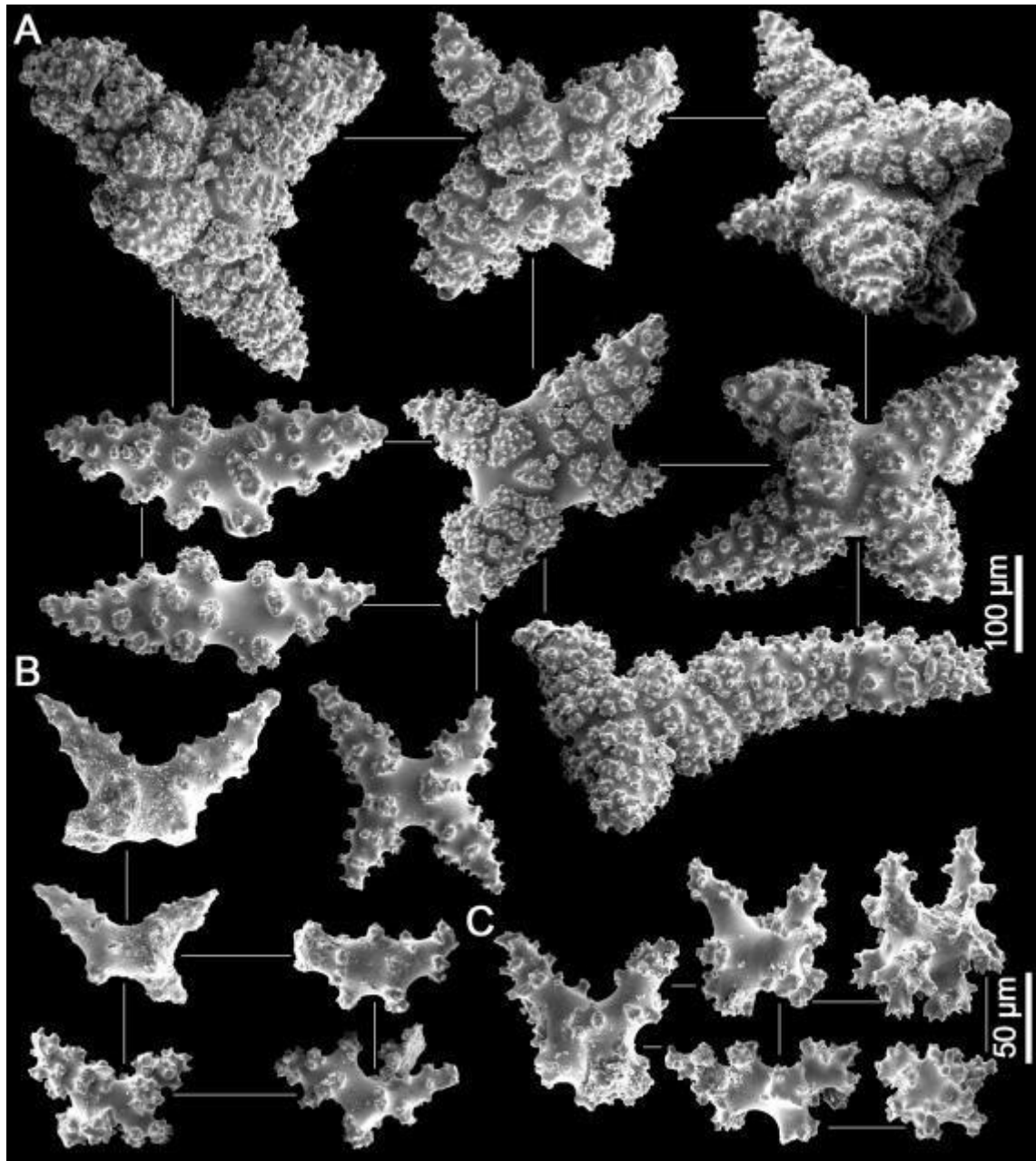


Fig. S18. Sclerites of *Plexaurella rastrera* (USNM 73605) from Martinique. A, butterflies from middle layer; B, sclerites from axial layer; C, cortical sclerites.

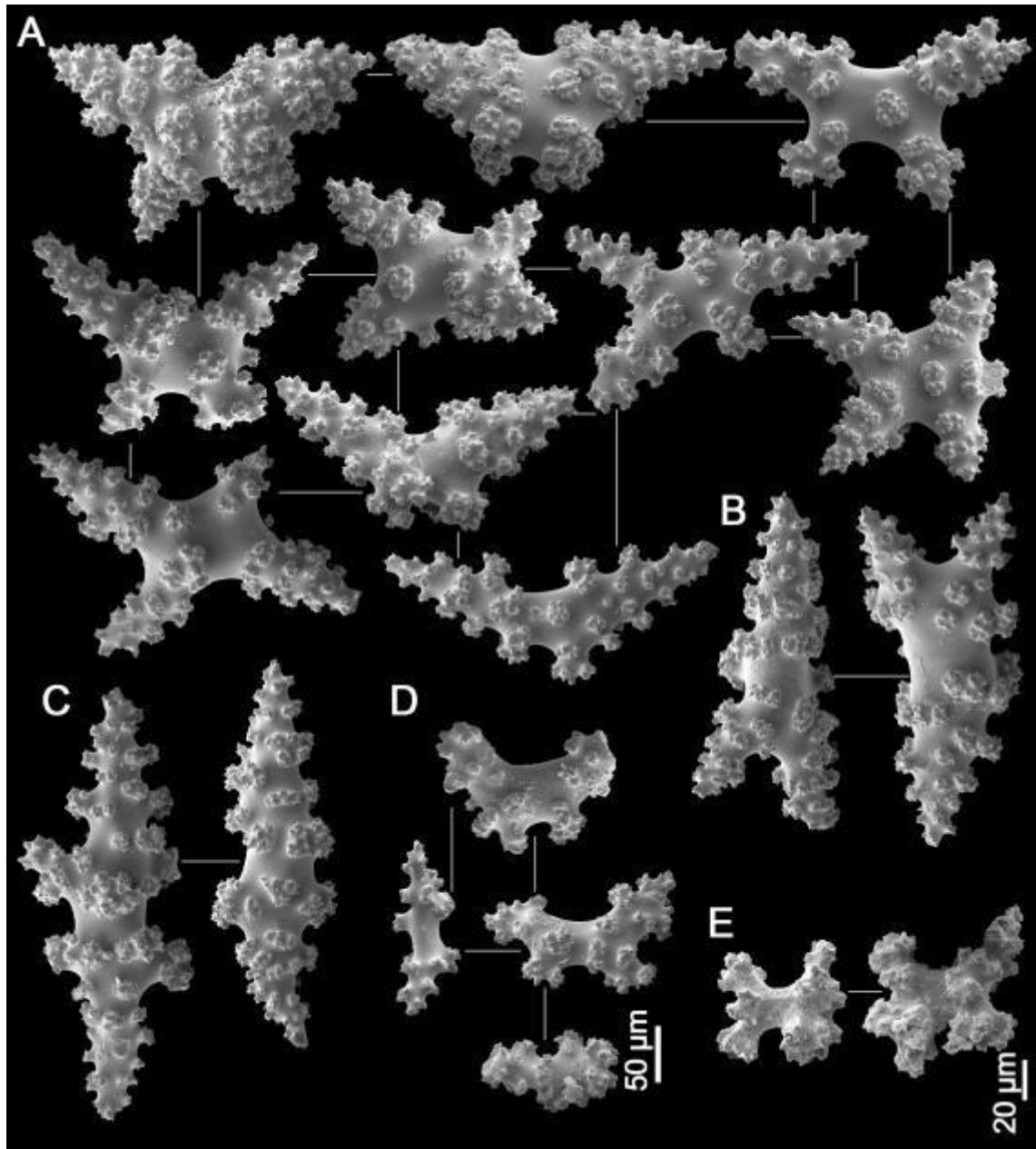


Fig. S19. Sclerites of *Plexaurella nutans* (USNM 54951) from Honduras. A, butterflies from middle layer; B, tri-radiates from middle layer; C, spindles from middle layer; D, sclerites from axial layer; E, cortical sclerites.

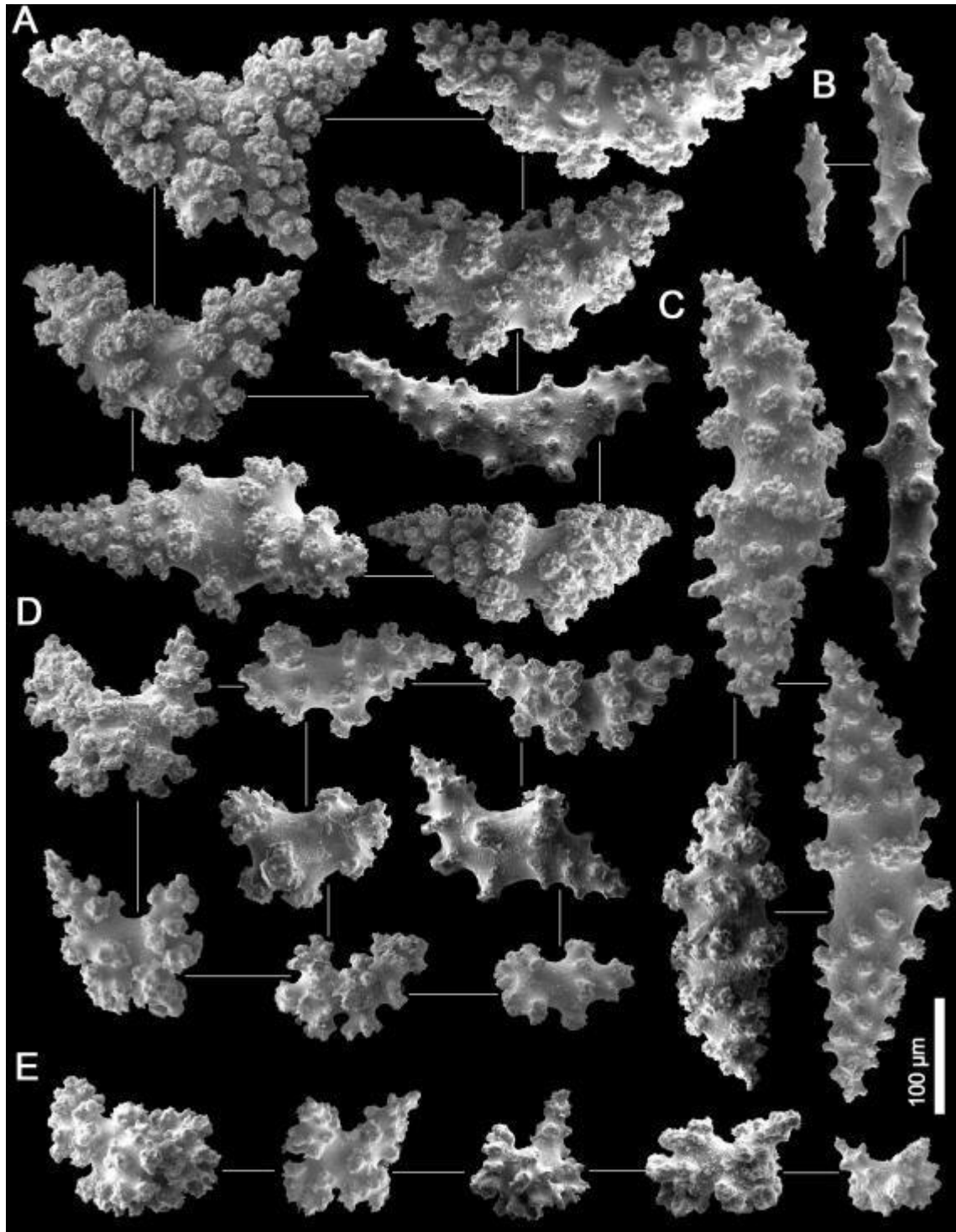


Fig. S20. Sclerites of *Plexaurella nutans* (USNM 84107) from Florida. A, butterflies from middle layer; B, rods from polyp body wall; C, spindles from middle layer; D, sclerites from axial layer; E, cortical sclerites.

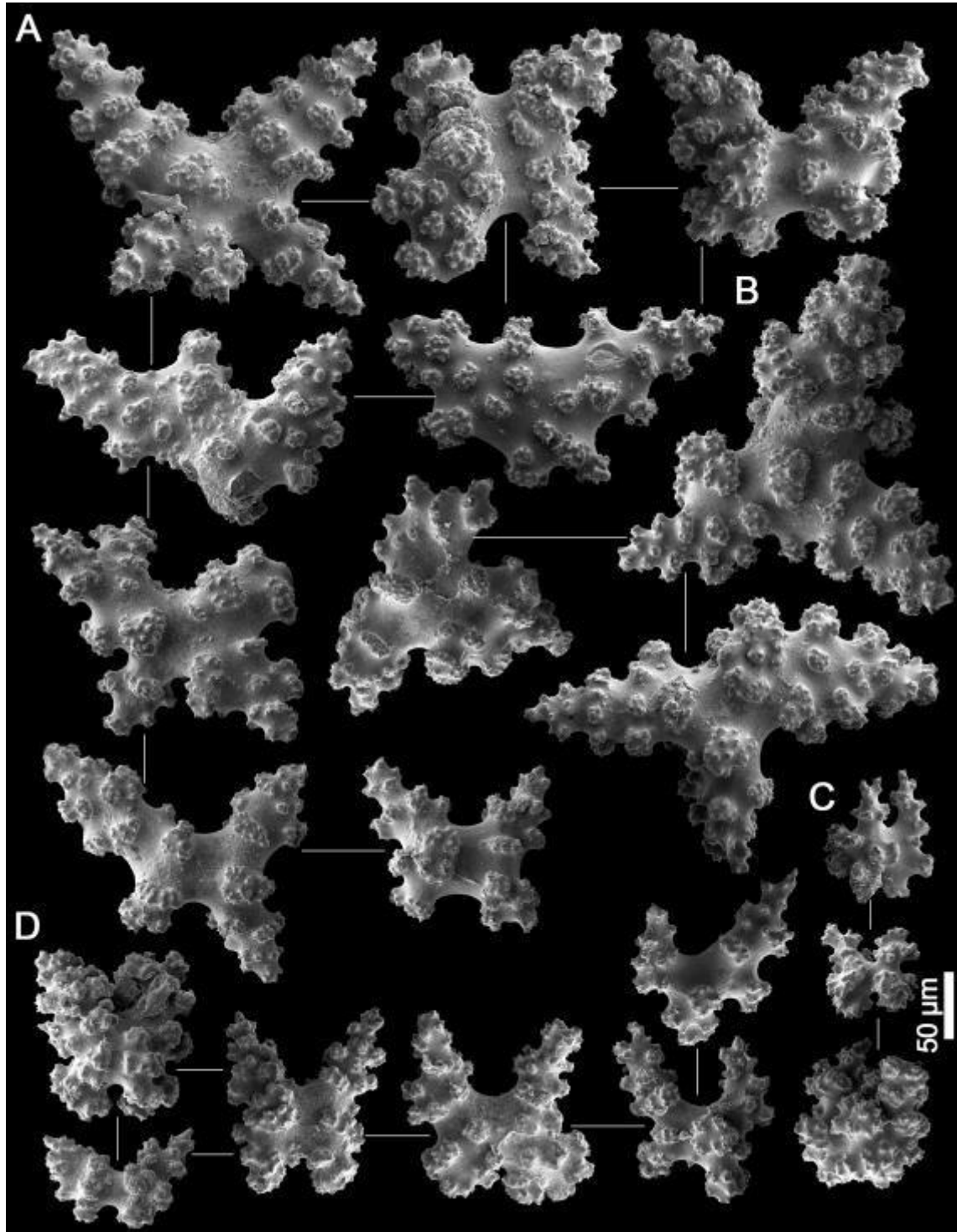


Fig. S21. Sclerites of *Plexaurella grisea* (USNM 54953) from Turks and Caicos Islands. A, butterflies from middle layer; B, tri-radiates from middle layer; C, cortical sclerites; D, sclerites from axial layer.

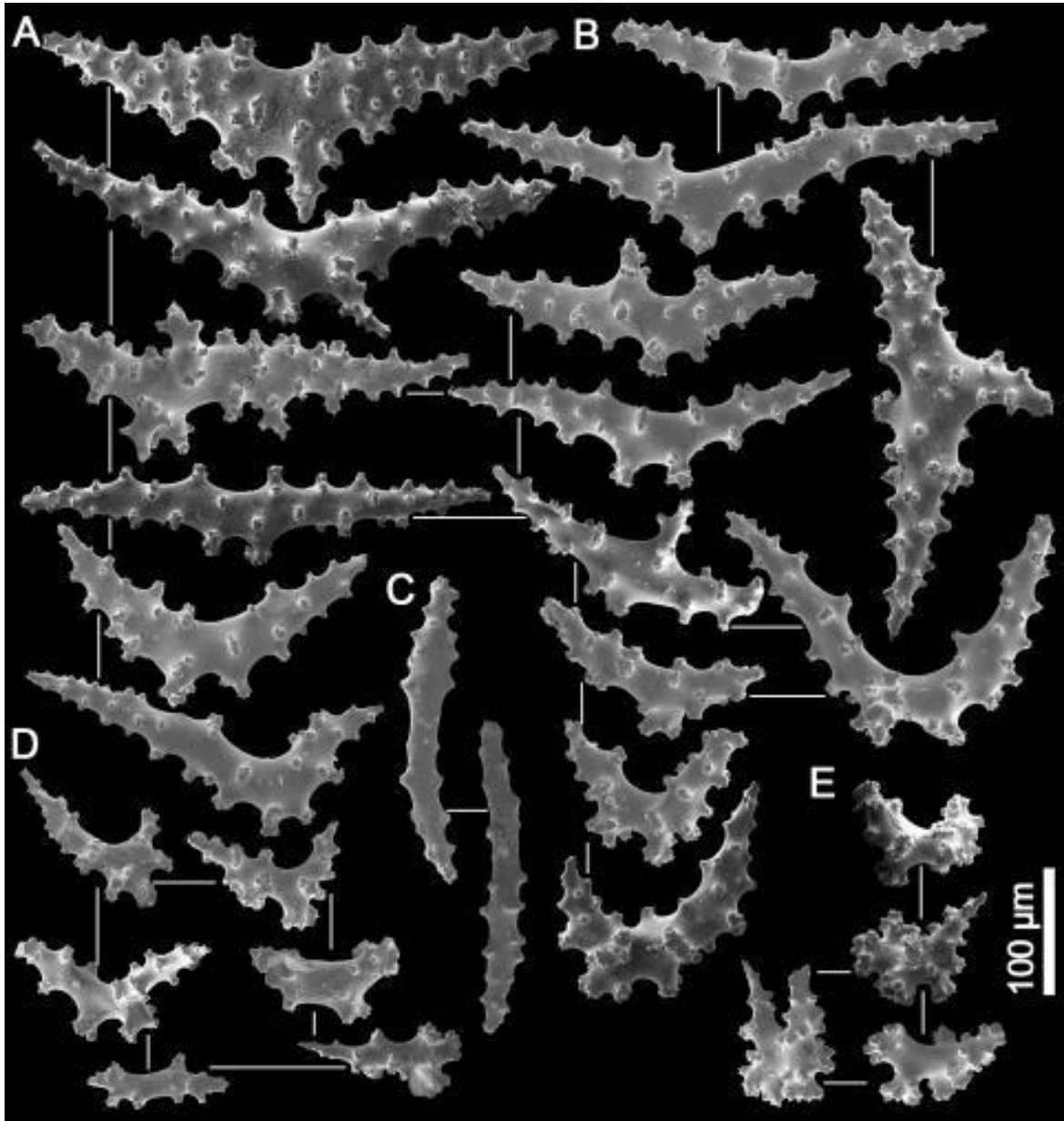


Fig. S22. *Plexaurella nutans* (USNM 55092) from Dominican Republic. A, butterflies from middle layer; B, tri-radiates from middle layer; C, rods from polyp body wall; D, sclerites from axial layer; E, cortical sclerites.

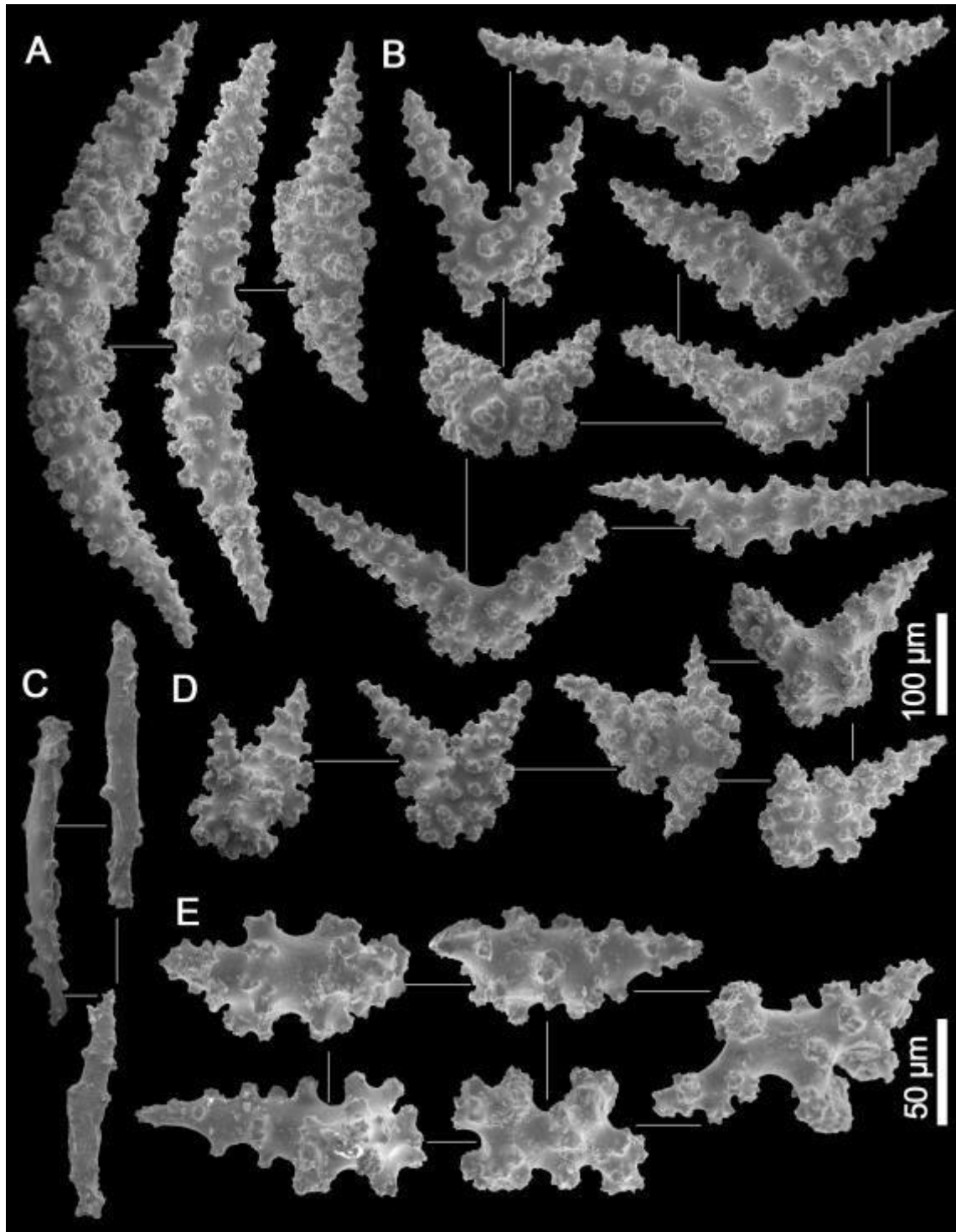


Fig. S23. *Plexaurella nutans* (USNM 1237522) from Netherlands Antilles. A, spindles from middle layer; B, butterflies from middle layer; C, rods from polyp body wall; D, cortical sclerites; E, sclerites from axial layer.

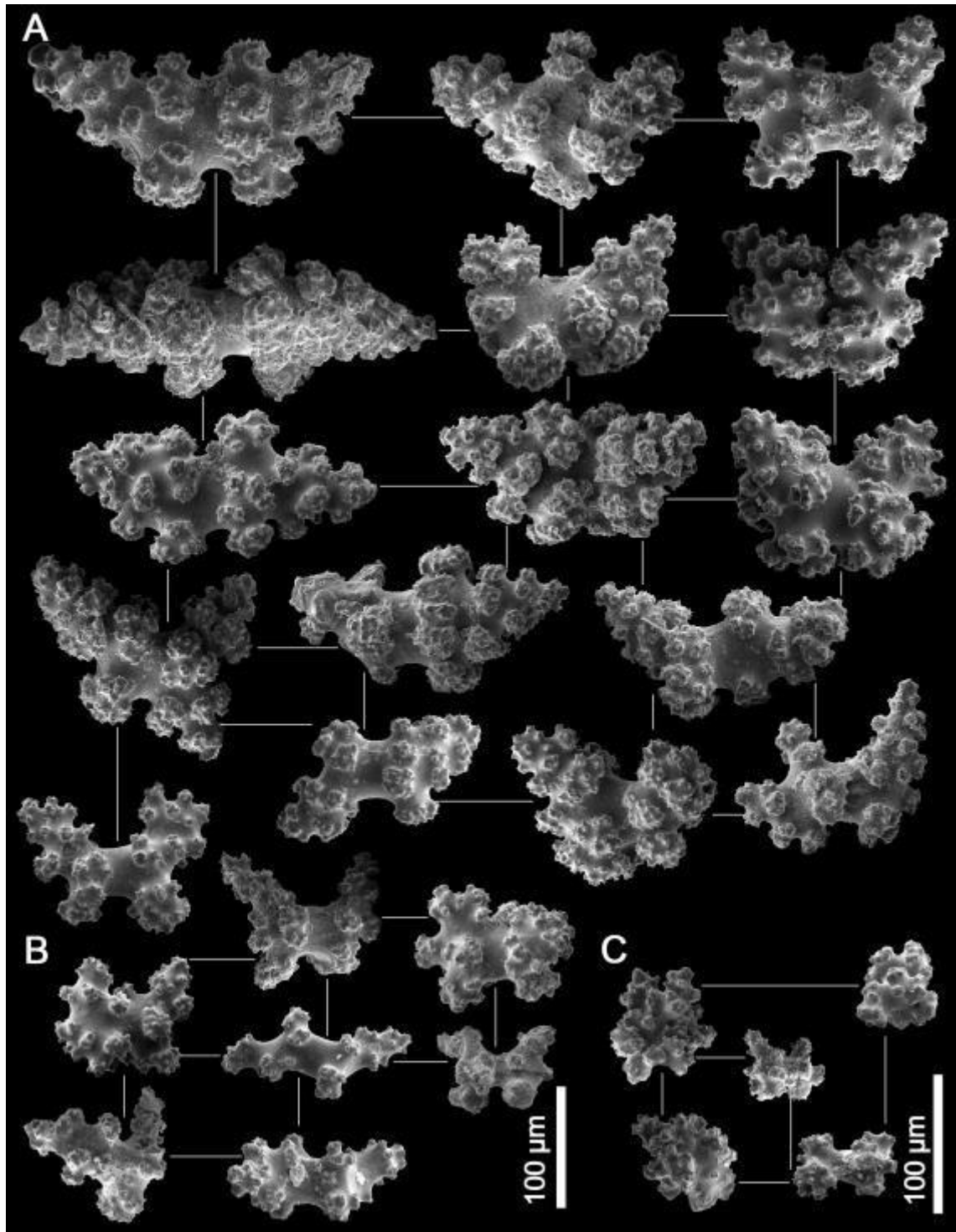


Fig. S24. Sclerites of *Plexaurella nutans* (USNM 73494) from Florida. A, butterflies from middle layer; B, sclerites from axial layer; C, cortical sclerites.

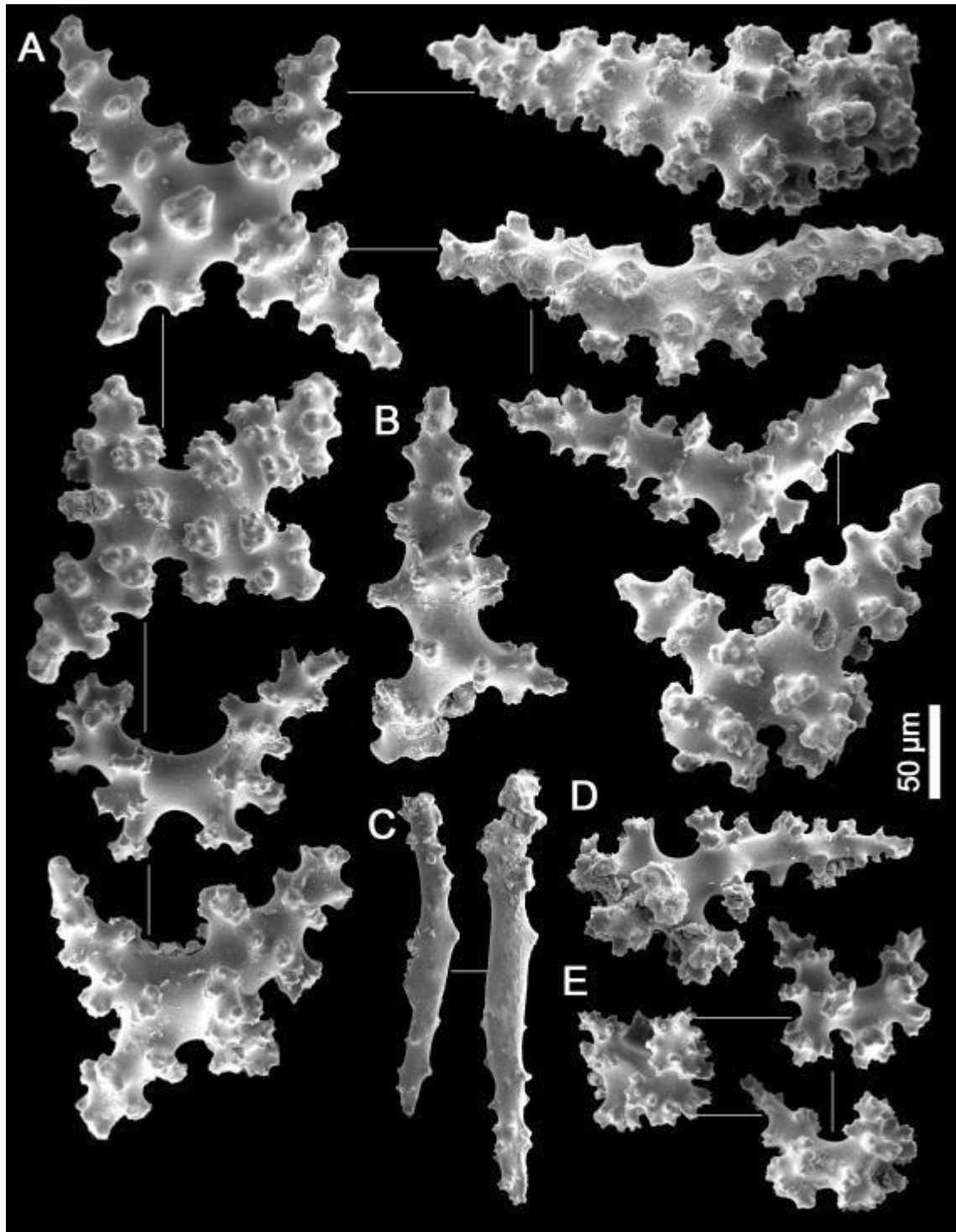


Fig. S25. Sclerites of *Plexaurella nutans* (USNM 1122674) from Netherlands Antilles. A, butterflies from middle layer; B, tri-radiate from middle layer; C, rods from polyp body wall; D, sclerite from axial layer; E, cortical sclerites.

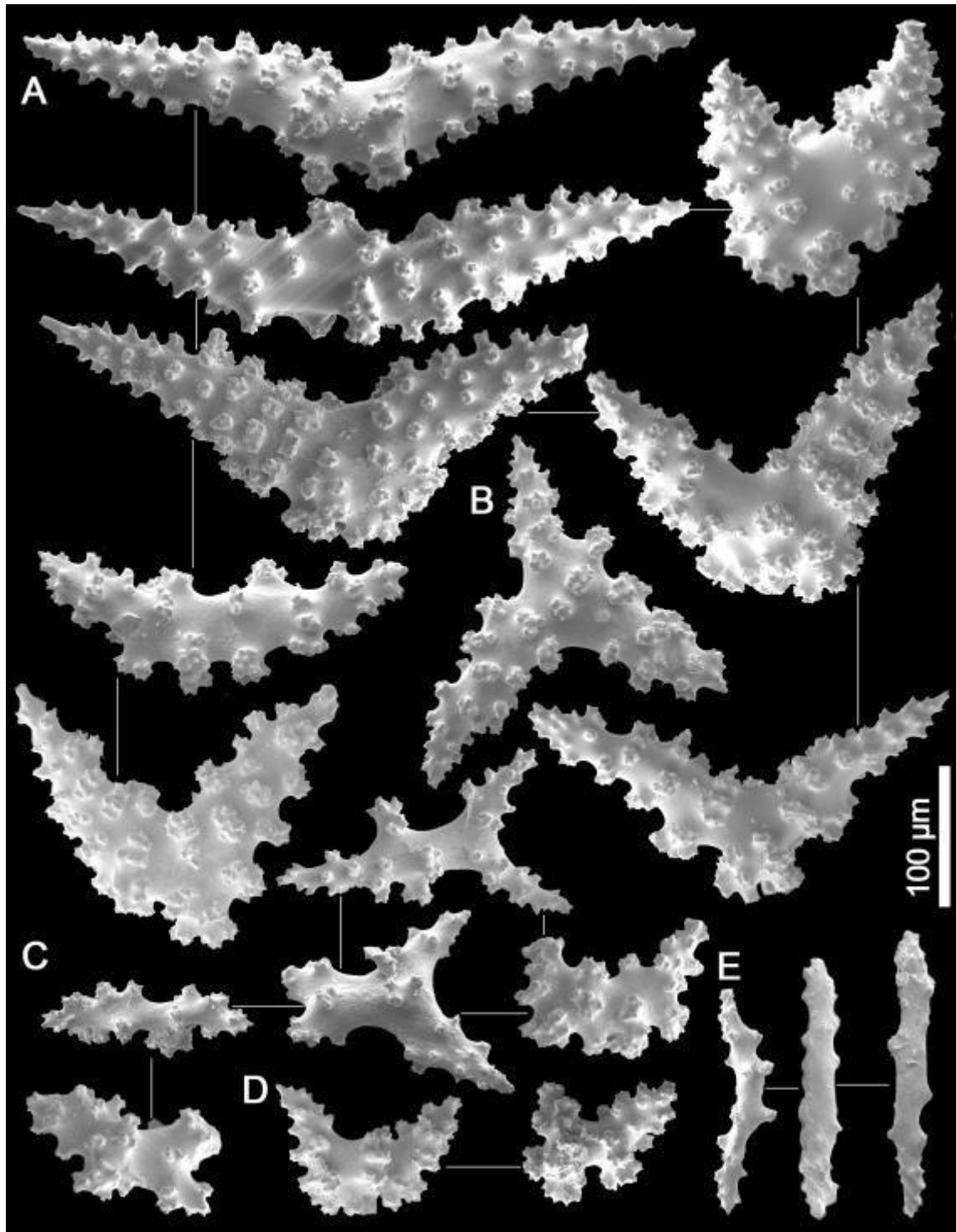


Fig. S26. Sclerites of *Plexaurella nutans* (USNM 1234926) from Grenada. A, butterflies from middle layer; B, tri-radiate from middle layer; C, sclerites from axial layer; D, cortical sclerites; E, rods from polyp body wall.

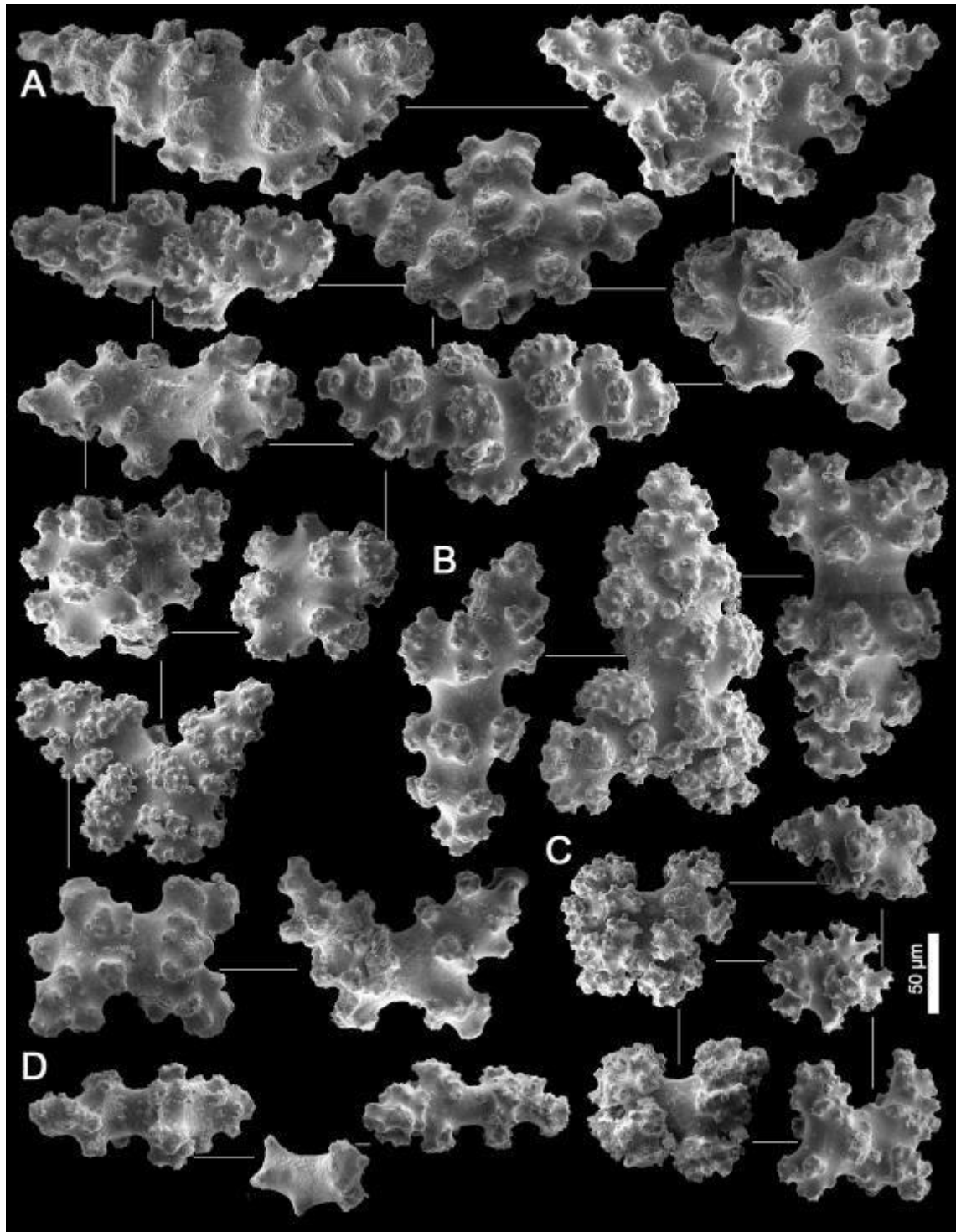


Fig. S27. Sclerites of *Plexaurella nutans* (USNM 85980) from Florida. A, butterflies and six-radiate from middle layer; B, tri-radiates from middle layer; C, cortical sclerites; D, sclerites from axial layer.

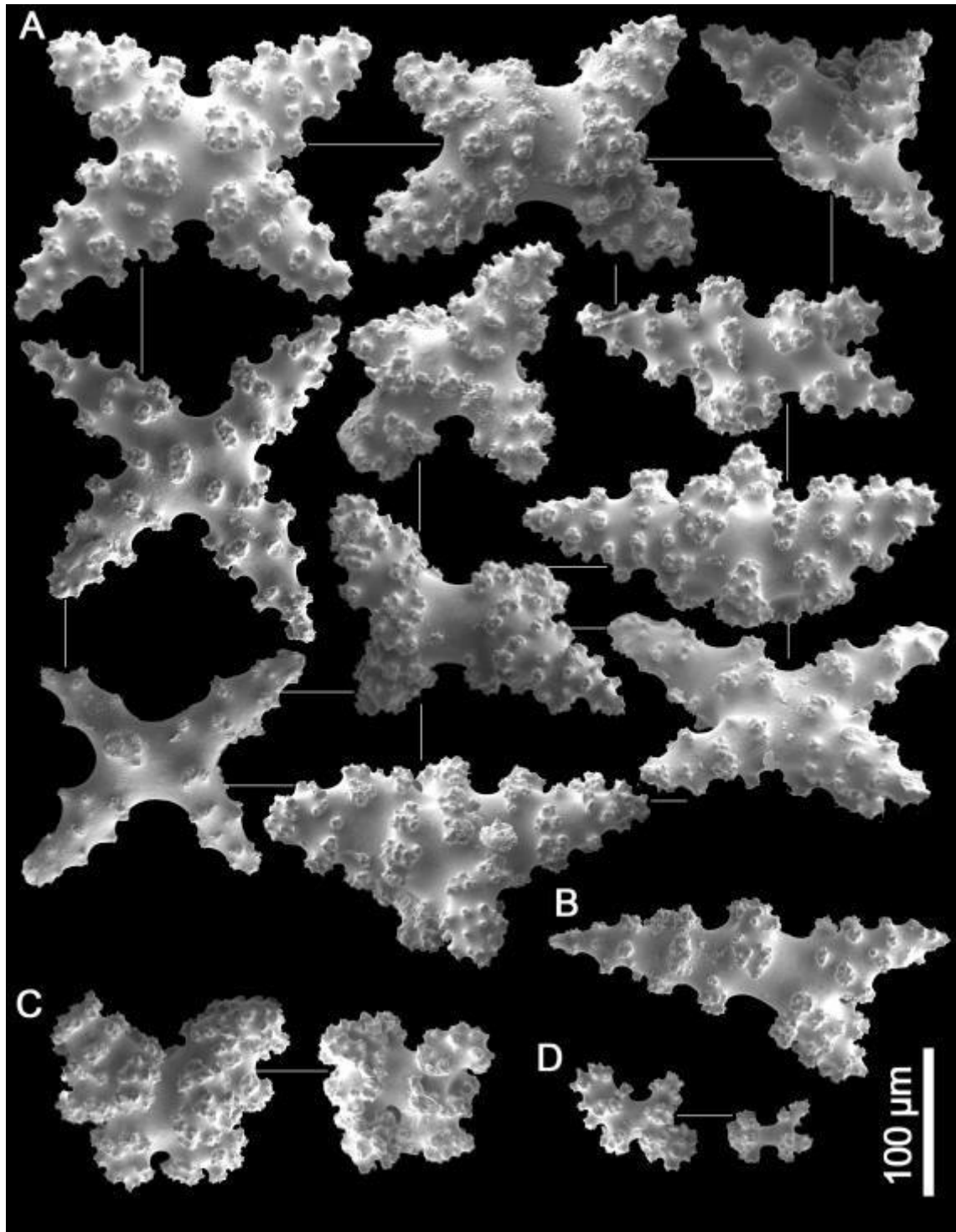


Fig. S28. Sclerites of *Plexaurella nutans* (USNM 88786) from Turks and Caiacos. A, butterflies from middle layer; B, tri-radiate from middle layer; C, axial sclerites; D, sclerites from the cortical layer.

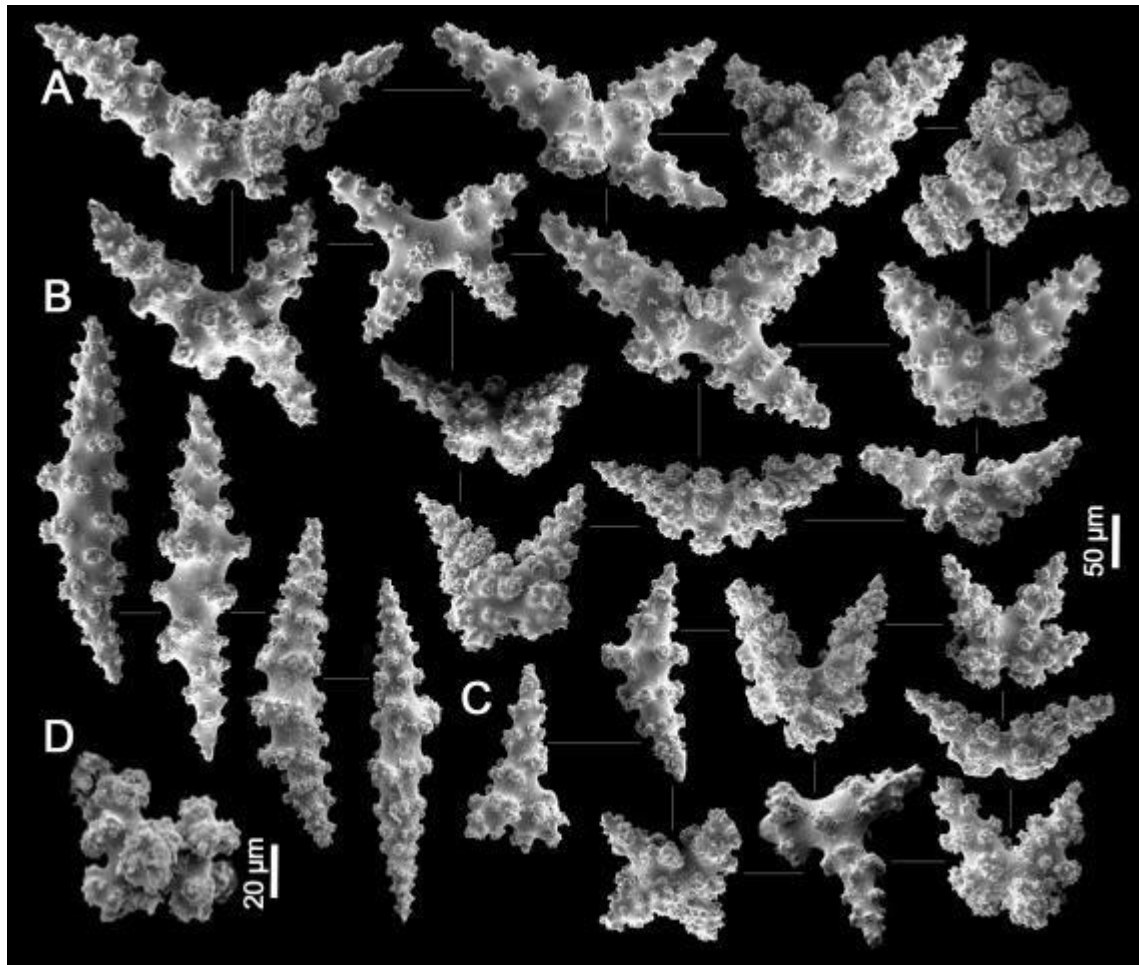


Fig. S29. Sclerites of *Plexaurella nutans* (ZMB 5963 – holotype of *P. fusifera*) from Barbados. A, butterflies and triradiate from middle layer; B, tuberculated rods from body wall; C, irregular sclerites from axial layer; D, cortical six-radiate. Scale bars: A–C, 0.05 mm; D, 0.02 mm.

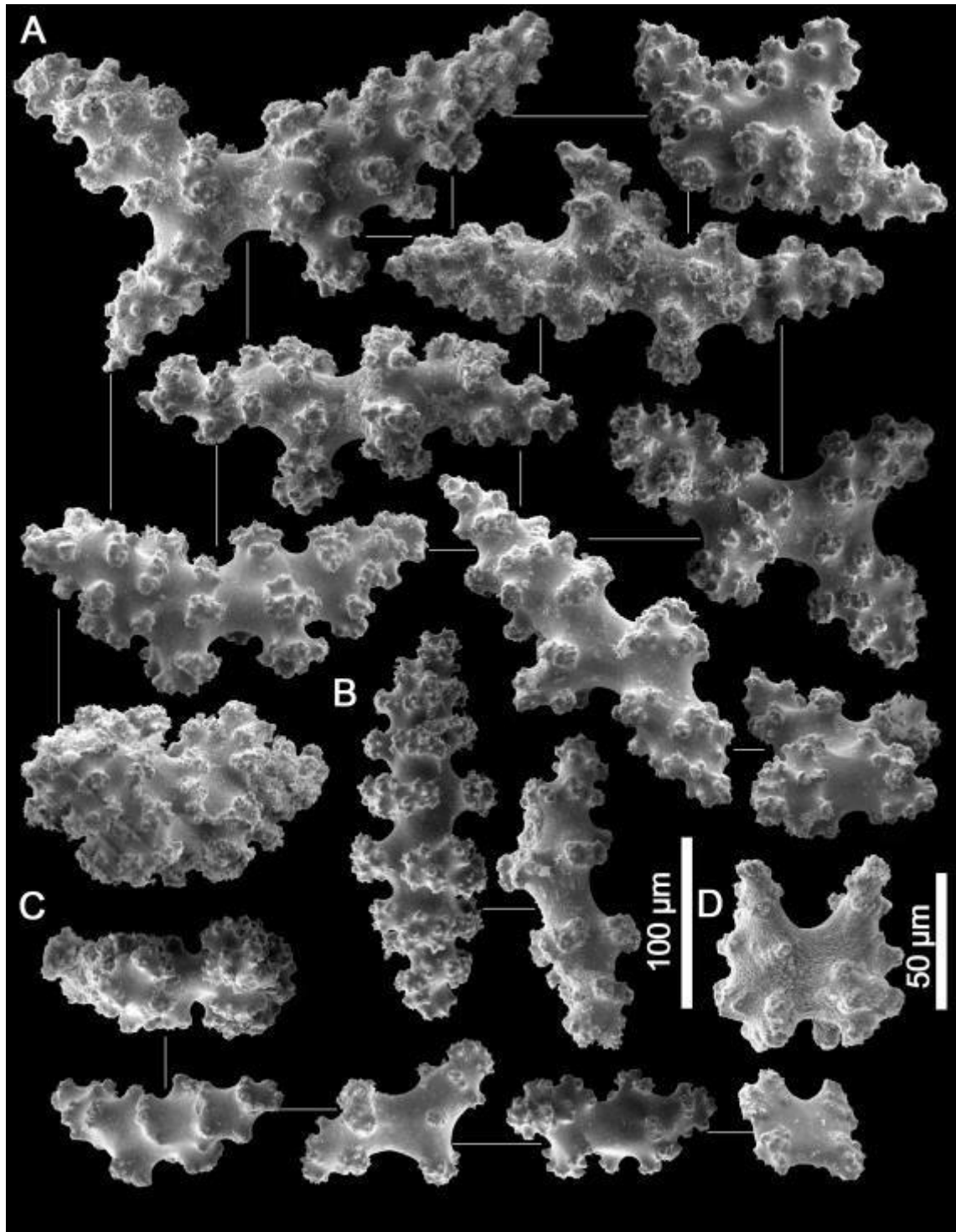


Fig. S30. Sclerites of *Plexaurella nutans* (USNM 86026) from Florida. A, butterflies from middle layer; B, spindles from middle layer; C, irregular sclerites from axial layer; D, cortical sclerite.

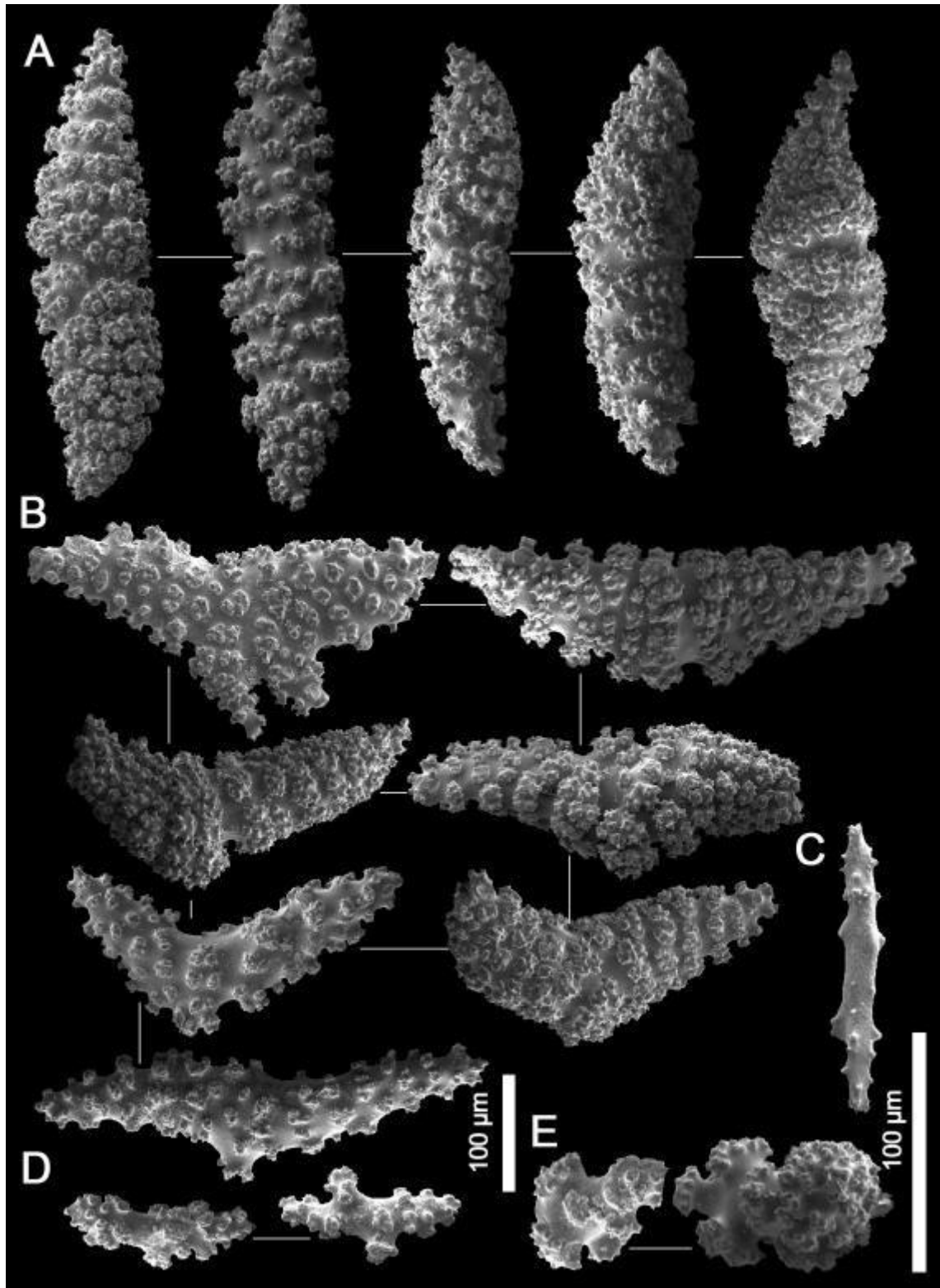


Fig. S31. Sclerites of *Plexaurella obesa* (USNM 73400) from Fernando de Noronha, Brazil. A, spindles from middle layer; B, butterflies from middle layer; C, rod from polyp body wall; D, sclerites from axial layer; E, cortical sclerites.

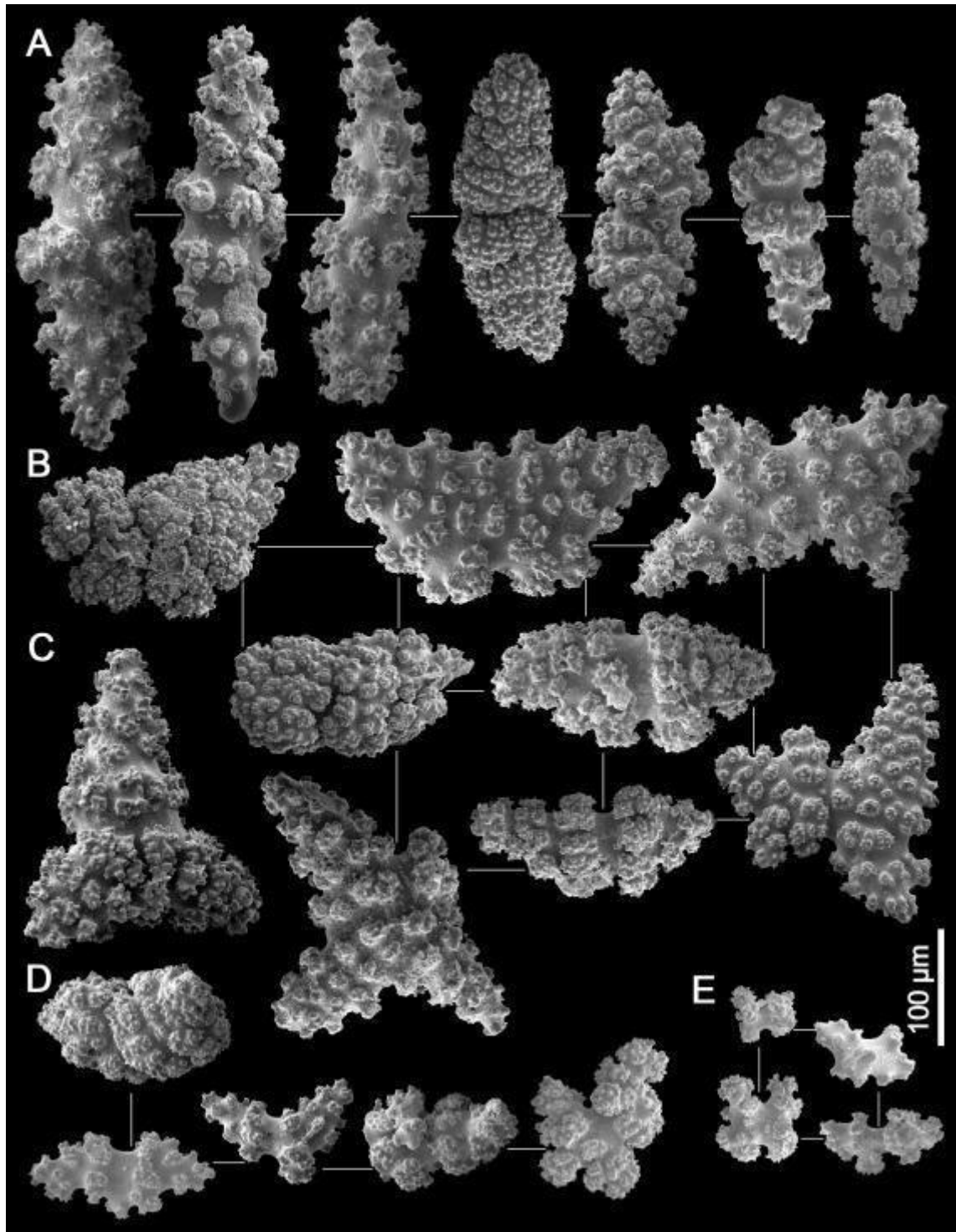


Fig. S32. Sclerites of *Plexaurella grandiflora* (USNM 75596) from Picaozinho (Paraíba, Brazil). A, spindles from middle layer; B, butterflies from middle layer; C, tri-radiate from middle layer; D, sclerites from axial layer; E, cortical sclerites.

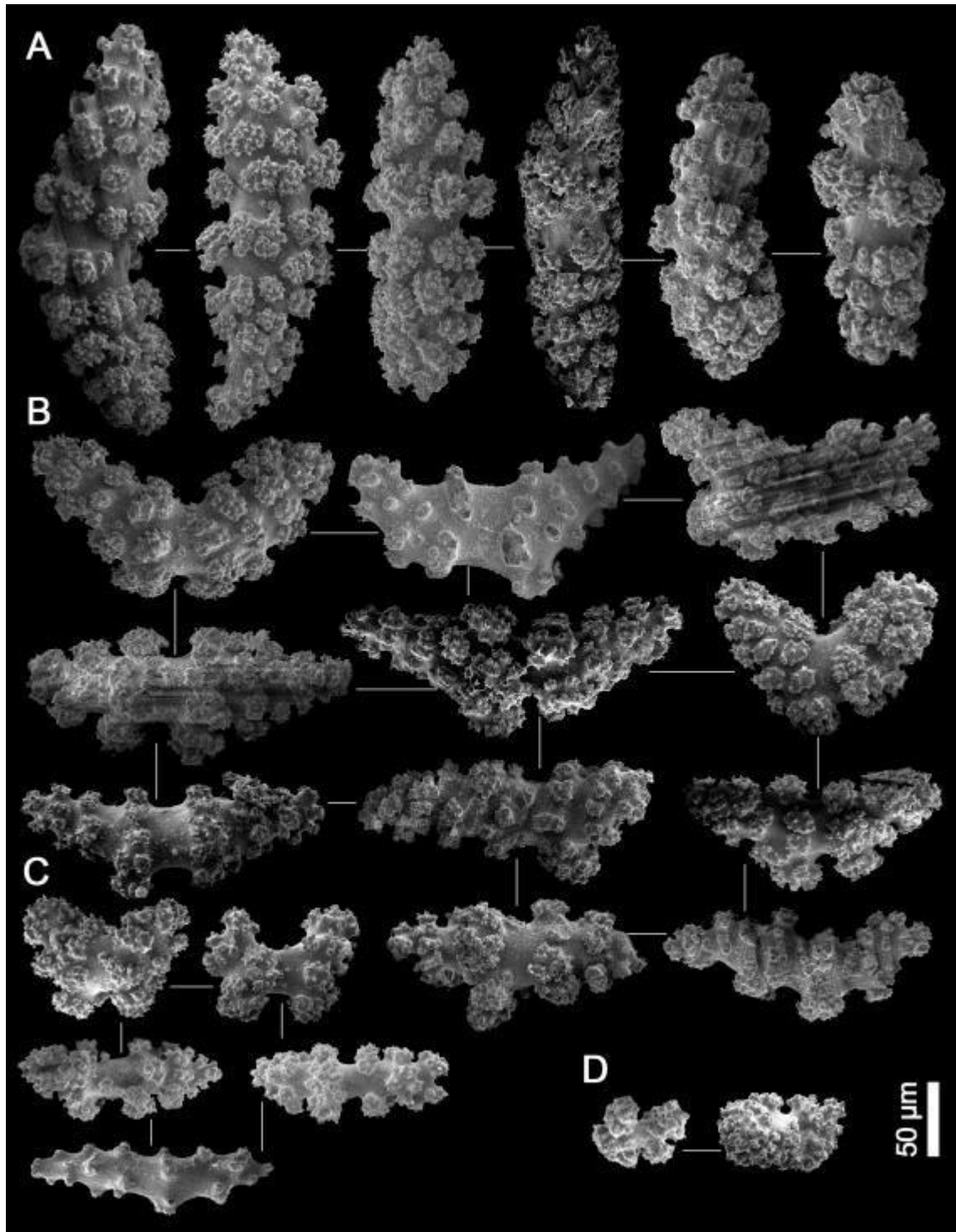


Fig. S33. Sclerites of *Plexaurella grandiflora* (USNM 73401) from Alagoas, Brazil. A, spindles from middle layer; B, butterflies from middle layer; C, sclerites from axial layer; D, cortical sclerites.

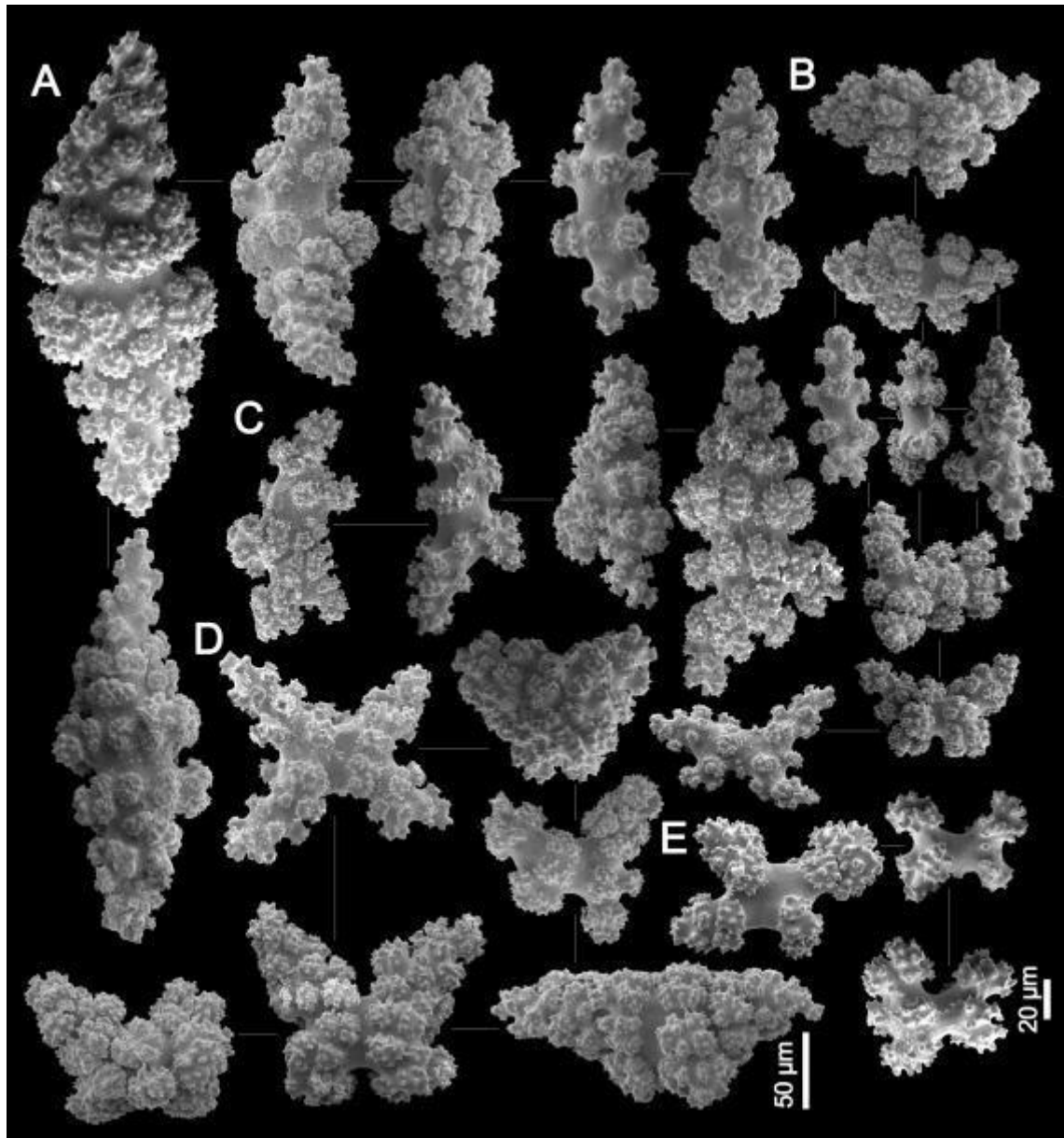


Fig. S34. Sclerites of *Plexaurella grandiflora* (YPM 4503 – holotype of *P. verrucosa*) from Bahia, Brazil. A, spindles from middle layer; B, sclerites from axial layer; C, triradiates from middle layer; D, butterflies from middle layer; E, sclerites from cortical layer.

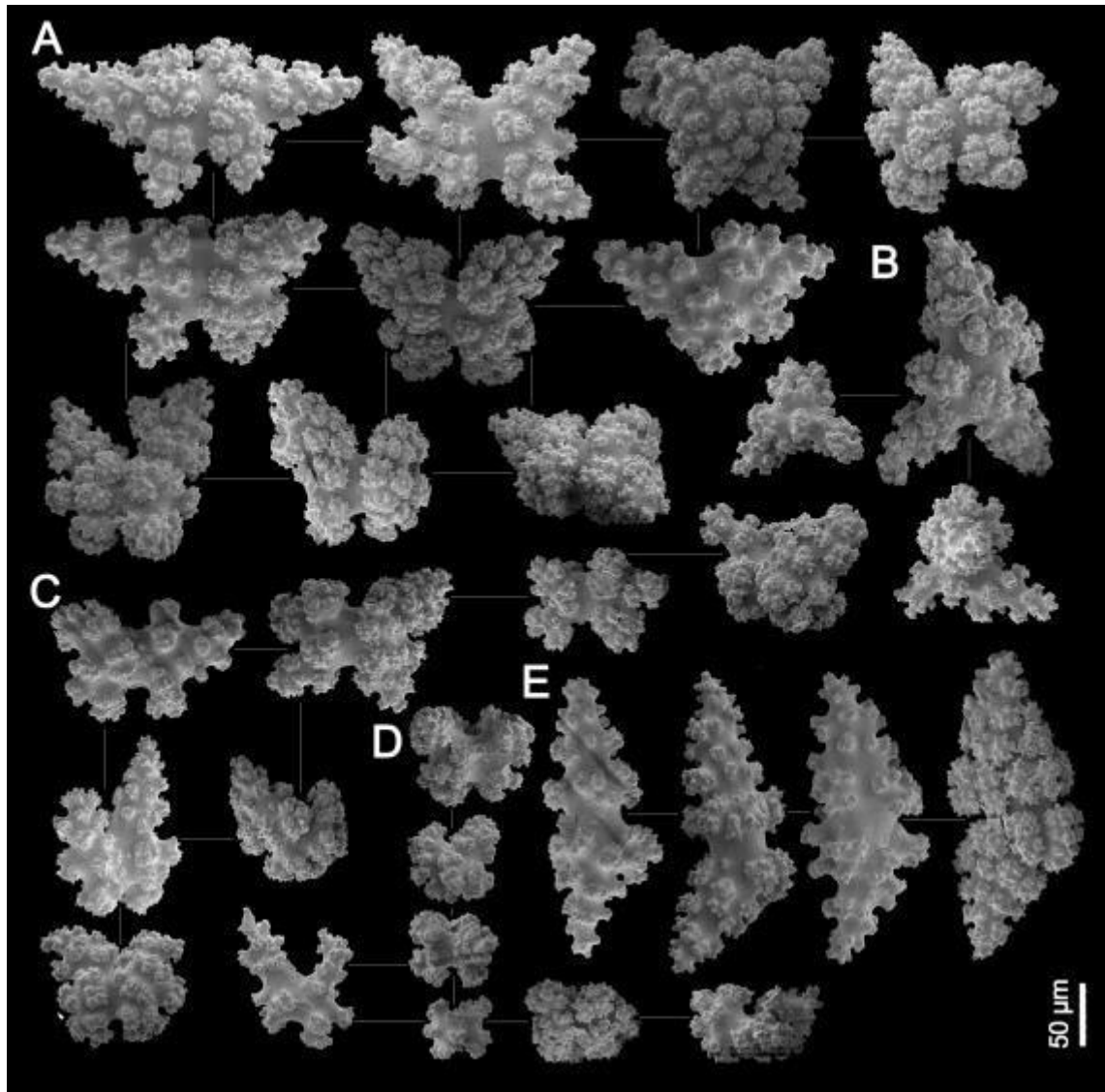


Fig. S35. Sclerites of *Plexaurella grandiflora* (YPM 4502 – holotype of *P. pumila*) from Bahia, Brazil. A, irregular butterflies from middle layer; B, triradiates from middle layer; C, sclerites from axial layer; D, cortical sclerites; E, tuberculated spindles from middle layer.

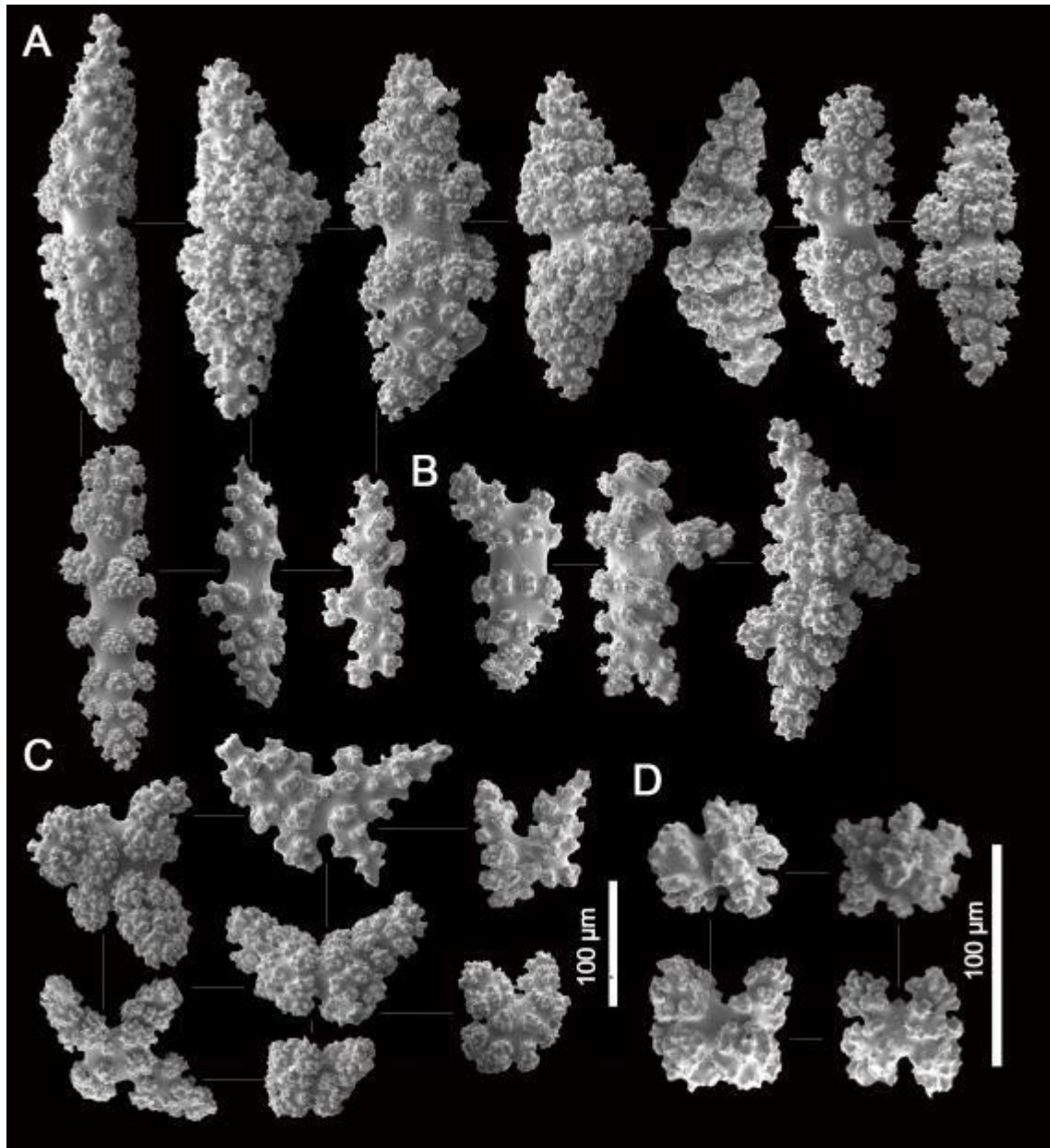


Fig. S36. Sclerites of *Plexaurella grandiflora* (YPM 1597 – holotype of *P. cylindrica*) from Abrolhos, Brazil. A, spindles from middle layer; B, triradiates from middle layer; C, butterflies from axial layer; D, sclerites from cortical layer.

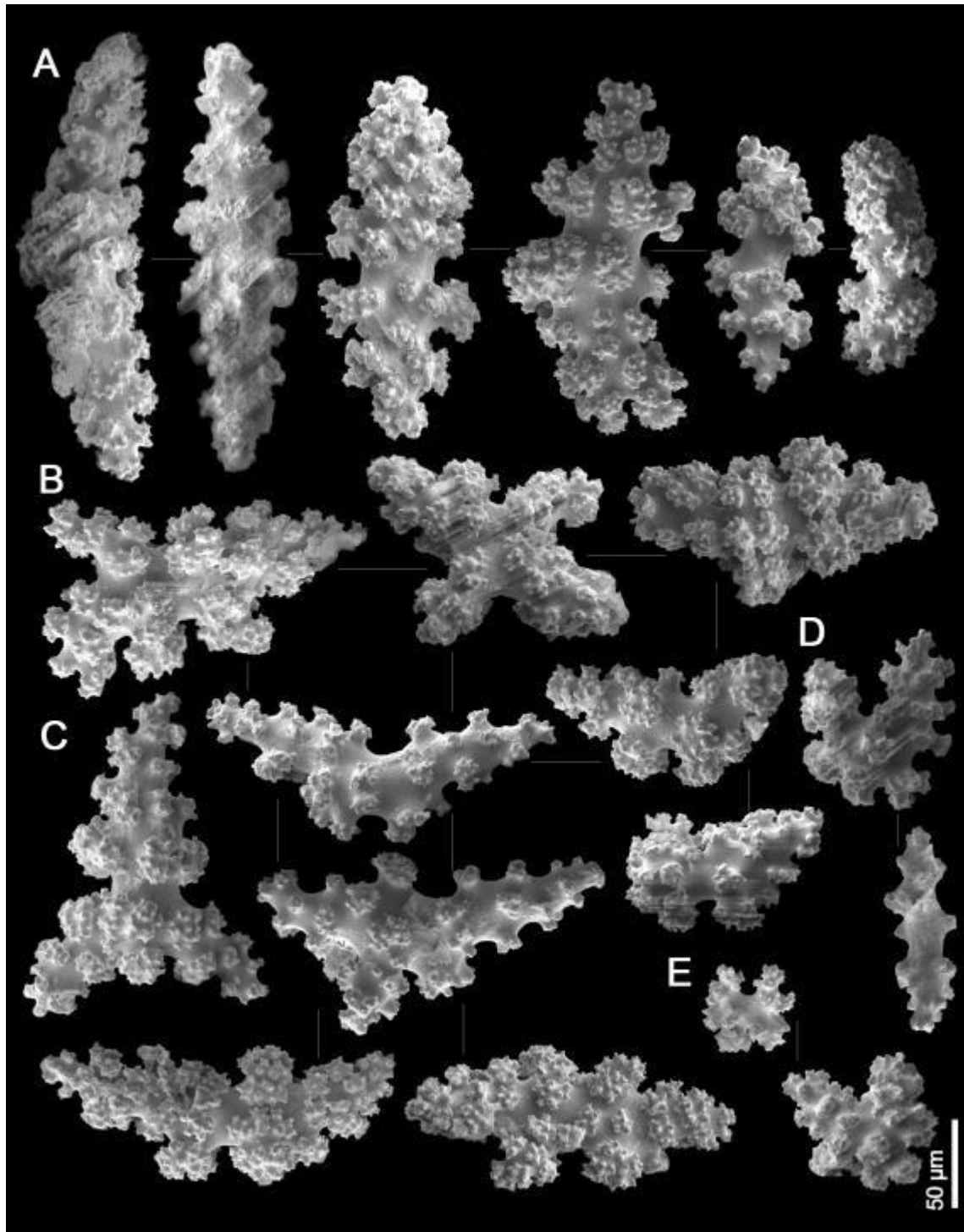


Fig. S37. Sclerites of *Plexaurella grandiflora* (YPM 1598 – holotype of *P. braziliiana*) from Abrolhos, Brazil. A, spindles from middle layer; B, butterflies from middle layer; C, triradiate from middle layer; D, sclerites from axial layer; E, cortical sclerites.