

**Atlas
of the
Living Olive Shells
of the
World**

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Charlottesville, Virginia*

A CERF Book
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Figure 33. Holotype of *Oliva (Rufoliva) lenhilli* Petuch and Sargent, new species, from 160 meters depth off Bohol Island, Philippines.

Abbreviations Used to Denote Location of Type Specimens

- ANM** Australian National Museum, Sydney, Australia.
DS Collection of D. Sargent, Sarasota, Florida.
EP Collection of E. Petuch, Lake Worth, Florida.
LM Liverpool Museum, Liverpool, England.
USNM United States National Museum, The Smithsonian Institution, Washington, D.C

Digitizing halftone color prints by flatbed scanner: the challenges

To understand why the color plates provided in the following pages may look suboptimal, to say the least!, one should understand the technical challenges inherent to the digitalization of halftone color prints, especially from small originals with quite coarse (“newspaper”) halftone screen resolution.

In November 2021, after a long search I was able to acquire a copy of the rare and well-known 1986 book by Petuch and Sargent. As Ed Petuch himself said on the Facebook group “Olivoidea”, «*The publisher (CERF) told us that the book was going to be of a larger size (8 1/2 by 11 inches), sort of an expanded version of Ziegler and Porreca's older book. Well, this is what he gave us; a small book with tiny photos! We were not happy, but what can you do?*».

In fact, the small size of the pictures makes difficult to take full advantage of the book. To improve the usability of the color plates, I requested and obtained Ed’s permission to process them via scanner and image editing software, as needed to obtain the clearest digital copy possible.

After test scans used to determine the resolution of the halftone screen (a parameter controlling the image scanning process) and the dot size of the low-pass Gaussian filter used to descreen the resulting images in the post-processing phase, the 39 color plates were scanned separately.

Judging from the reflections of the lights of the photographic stand, each plate looks like a composition of cutouts from separate photographs. Exposure times seem to vary widely even among the images of a single plate, as required by the relative lightness or darkness of each shell pictured. Besides dealing with the impossibility to find exposure adjustment levels fit for the entirety of each plate, I also had to address the white balance issue, on two fronts: a) making reasonable assumptions about the light temperature during the photographic process, and b) mitigating the color shift from deterioration spurred by acidification, oxidation, and other factors.

To help me in that respect, Ed kindly identified *O. incrassata* color form *nivea* as one of the whitest shells pictured. A very small digital cutout from that shell was used as white balance sample, in the following steps: the 3px by 3px cutout was saved in color-indexed 256 color mode, magnified on screen and captured as an around 100px by 100px square; after full-surface descreening by gaussian blur, that reference square was digitally superimposed on each plate; then, the “remove color cast” function was applied by sampling the reference square, subsequently removed from all the plates.

This process ensured that all the plates were consistently white-balanced, following the assumption that every picture in every plate was photographed under the same conditions.

The color cast removal generally resulted in colder images, with whites turning to very light sky blue: one may draw the conclusion that all the pictures were taken under warm light, and/or that the printing process increased the warm (reddish) hues, now almost completely removed at the price of slightly blue halos around the printed characters of the plates. Fortunately, Ed confirmed that «*...yes, all the photos had a pinkish tone added to them that wasn't there on the original photos*».

Exposure was separately corrected in brightness and contrast for lights and shadows.

Note: In the case of the following plates: 9, 10, 24, 28 the alignment of the printing screens was very poor: as a consequence, the pictures look blurred to the unaided eye, and even more blurred after processing.

Note: Scanned plates are separately available for anybody, who deems the color rendering too cold, to try different white balancing strategies – contact me or Edward Petuch

Cesare Brizio (brziocesare@gmail.com), November 2021

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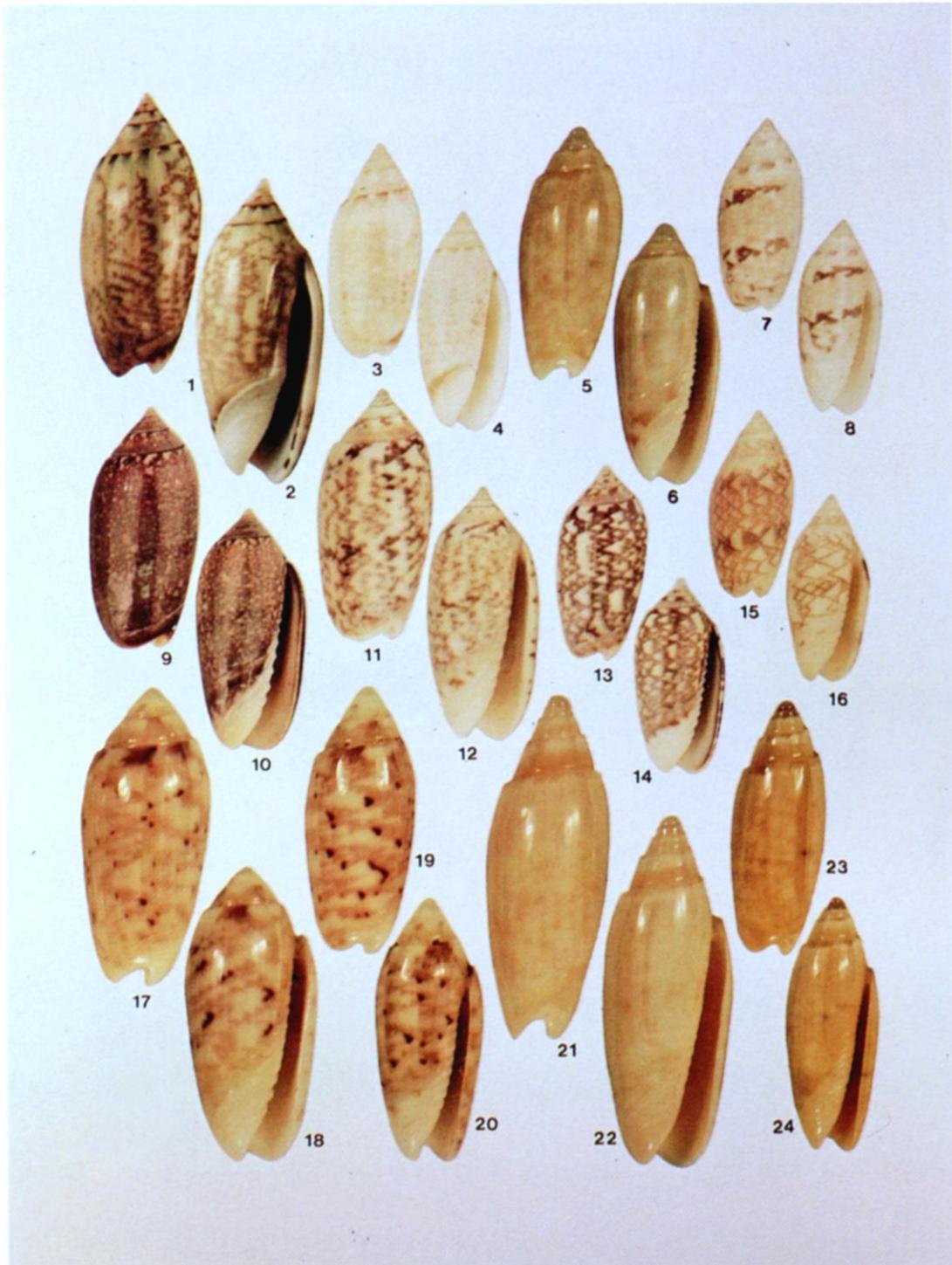


Plate 1. *Acutoliva* species.

Plate 1.

Figure	Description
1, 2	Oliva (Acutoliva) australis Duclos, 1835, (p. 57) 31 mm, Dampier Archipelago, Australia
3, 4	Oliva (Acutoliva) australis pallescens Petuch and Sargent, new subspecies (p. 58) Holotype ANM, 26 mm, Eucla, Western Australia
5, 6	Oliva (Acutoliva) bathyalis Petuch and Sargent, new species (p. 58) Holotype USNM 841428 , 250 meters depth off Balabac Island, Philippines
7, 8	Oliva (Acutoliva) lentiginosa Reeve, 1850 (p. 62) 22 mm, Onna Bay, Okinawa
9, 10	Oliva (Acutoliva) duclosi Reeve, 1850 (p. 59) 22 mm, dark color form, Matavai Bay, Tahiti, collected in black volcanic sand.
11, 12	Oliva (Acutoliva) duclosi color form <i>stainforthi</i> Reeve, 1850, (p. 59) 29 mm, Tonga
13, 14	Oliva (Acutoliva) duclosi Reeve, 1850 (p. 59) 24 mm, light color form, Mahina, Tahiti, collected in gray volcanic sand
15, 16	Oliva (Acutoliva) esiodina Duclos, 1835 (p. 60) 22 mm, Subic Bay, Philippine Islands
17, 18	Oliva (Acutoliva) hilli Petuch and Sargent, new species (p. 60) Holotype USNM 841435, 16 mm, Neiafu, Vava'u Islands, Tonga
19, 20	Oliva (Acutoliva) hilli Petuch and Sargent, new species (p. 60) Paratype EP, 15 mm, Neiafu, Vava'u Islands, Tonga
21, 22	Oliva (Acutoliva) joyceae Petuch and Sargent, new species (p. 60) Paratype EP, 19 mm, Gavutu Island, Florida Islands, Solomon Sea
23,24	Oliva (Acutoliva) joyceae Petuch and Sargent, new species (p. 60) Holotype USNM 841438, Gavutu Island, Florida Islands, Solomon Sea



Plate 2. *Acutoliva* species.

Plate 2.

Figure	Description
1, 2	<i>Oliva (Acutoliva) leonardhilli</i> Petuch and Sargent, new species (p. 62) Holotype USNM 841464, 23 mm, Tulear Bay, Madagascar
3, 4	<i>Oliva (Acutoliva) marquesana</i> Petuch and Sargent, new species (P- 62) Paratype EP, 13 mm, 150 meters, Fatu Hiva Island, Marquesas Islands, French Polynesia
5, 6	<i>Oliva (Acutoliva) marquesana</i> Petuch and Sargent, new species (p. 62) Holotype USNM 841442, 11 mm, Fatu Hiva Island, Marquesas Islands, French Polynesia
7, 8	<i>Oliva (Acutoliva) polita</i> Duclos, 1835 (p. 64) 20 mm, Hiva Oa, Marquesas Islands, French Polynesia
9, 10	<i>Oliva (Acutoliva) nitidula</i> Duclos, 1835 (p. 63) Hiva Oa, Marquesas Islands, French Polynesia
11, 12	<i>Oliva (Acutoliva) natalia</i> Duclos, 1844 (p. 63) 18 mm, Camara Island, Suva, Fijis
13, 14	<i>Oliva (Acutoliva) panniculata</i> color form <i>ozodona</i> Duclos, 1835, (p.64) 22 mm, Papua New Guinea
15, 16	<i>Oliva (Acutoliva) panniculata</i> Duclos, 1835 (p. 64) 24 mm, Okinawa, Japan
17, 18	<i>Oliva (Acutoliva) kurzi</i> Petuch and Sargent, new species (p. 61) Holotype ANM, 17 mm, Broome, Western Australia



Plate 3. *Acutoliva* and *Annulatoliva* species.

Plate 3.

Figure	Description
1, 2	Oliva (Acutoliva) semmelinki Schepman, 1911 (p. 64) 25 mm, Bogia, Madang Province, Papua New Guinea
3, 4	Oliva (Acutoliva) williamsi Melvill and Standen, 1897 (p. 65) 22 mm, Mauritius
5, 6	Oliva (Annulatoliva) aniomina Duclos, 1835 (p. 65) 27 mm, 100 meters off Bwagaoia, Misima Island, Louisiade Archipelago, Solomon Sea
7, 8	Oliva (Annulatoliva) annulata color form <i>alba</i> Sowerby, 1825 (p. 66) 30 mm, Siasi Island, Sulu Sea, Philippines
9, 10	Oliva (Annulatoliva) annulata Gmelin, 1791 (p. 66) 32 mm, Culion Leper Colony, Palawan Island, Philippines
11, 12	Oliva (Annulatoliva) annulata color form <i>amethystina</i> Röding, 1798 (p. 66) 59 mm, Culion Leper Colony, Palawan Island, Philippines
13, 14	Oliva (Annulatoliva) annulata color form <i>carnicolor</i> Dautzenberg, 1927 (p. 66) 41 mm, Laminusa, Siasi Island, Sulu Sea, Philippines
15, 16	Oliva (Annulatoliva) annulata color form <i>guttata</i> Fischer, 1807 (p. 66) 46 mm, Bolo Point, Okinawa
17	Oliva (Annulatoliva) annulata color form <i>nebulosa</i> Dautzenberg, 1927 (p. 67) 32 mm, Zamboanga, Mindanao Island, Philippines
18, 19	Oliva (Annulatoliva) annulata color form <i>intricata</i> Dautzenberg, 1927 (p. 67) 38 mm, 30 meters depth off Mindanao Island, Philippines
20, 21	Oliva (Annulatoliva) annulata form <i>mantichora</i> Duclos, 1835 (p. 67) 30 mm, Phuket Island, Thailand



Plate 4. *Annulatoliva*, *Arctoliva*, and *Cariboliva* species.

Plate 4.

Figure	Description
1, 2	Oliva (Annulatoliva) buloui Sowerby, 1887 (p. 67) 22 mm, Rabaul, New Britain Island, Papua New Guinea
3, 4	Oliva (Annulatoliva) buloui inscripta Petuch and Sargent, new subspecies (p. 67) Holotype USNM 841440, 22 mm, Guadalcanal Island, Solomons
5	Oliva (Annulatoliva) buloui inscripta Petuch and Sargent, new subspecies (p. 67) Paratype EP, 22 mm, Guadalcanal Island, Solomons
6, 7	Oliva (Annulatoliva) buloui stoneorum Petuch and Sargent new subspecies (p. 68) Holotype USNM 841453, 20 mm, Gavutu Island, Florida Islands, Solomon Sea
8	Oliva (Annulatoliva) buloui stoneorum Petuch and Sargent new subspecies (p. 68) Paratype EP, 20 mm, Gavutu Island, Solomon Sea
9, 10	Oliva (Annulatoliva) parkinsoni Prior, 1975 (p. 69) 21 mm, Rabaul, New Britain Island, Papua New Guinea
11, 12	Oliva (Annulatoliva) parkinsoni Prior, 1975 (p. 69) 19 mm, light color form, 100 meters, New Britain Island, Papua New Guinea
13, 14, 18, 19	Oliva (Arctoliva) arctata Marrat, 1871 (p. 70) 54 and 55 mm, Ranong, Thailand, Andaman Sea
15	Oliva (Arctoliva) arctata Marrat, 1871 (p. 70) 50 mm, dark form, Ranong, Thailand, Andaman Sea
16, 17	Oliva (Cariboliva) scripta Lamarck, 1811 (p. 70) 30 mm, dwarf form, Puerto Rico
20, 21	Oliva (Cariboliva) scripta venezuelana Petuch and Sargent new subspecies (p. 71) Holotype USNM 841451, 45 mm, Punto Fijo, Paraguana Peninsula, Venezuela, in the Gulf of Venezuela
22, 23	Oliva (Cariboliva) scripta Lamarck, 1811 (p. 70) Haiti, 42 mm
24, 25	Oliva (Cariboliva) scripta color form <i>trujilloi</i> Clench, 1938 (p. 71) 40 mm, Cartagena, Columbia
26, 27	Oliva (Carmione) avellana color form <i>blanda</i> Murrat, 1867 (p. 72) 27 mm, Solomon Islands



Plate 5. *Carmione* species.

Plate 5.

Figure	Description
1, 2	Oliva (Carmione) avellana Lamarck, 1811 (p. 72) 32 mm, Papua New Guinea
3, 4	Oliva (Carmione) avellana Lamarck, 1811 (p. 72) 27 mm, Marau Sound, Guadalcanal, Solomon Islands
5, 6	Oliva (Carmione) bulbiformis Duclos, 1835 (p. 73) 34 mm, Zamboanga, Mindanao Island, Philippines
7, 8	Oliva (Carmione) bulbiformis Duclos, 1835 (p. 73) 30 mm, gold form, Papua New Guinea
9, 10	Oliva (Carmione) bulbosa Röding, 1798 (p. 74) 46 mm, Mozambique, East Africa
11,12	Oliva (Carmione) bulbosa color form <i>bicingulata</i> Lamarck, 1811 (p. 74) 42 mm, Mozambique, East Africa
13, 14	Oliva (Carmione) bulbosa color form <i>aurata</i> Link, 1807 (p. 74) 24 mm, East Africa
15, 16	Oliva (Carmione) bulbosa color form <i>fabagina</i> Lamarck, 1811 (p. 75) 46 mm, Mozambique, East Africa
17, 18	Oliva (Carmione) bulbosa color form <i>inflata</i> Lamarck, 1811 (p. 75) 45 mm, East Africa
19, 20	Oliva (Carmione) bulbosa color form <i>lacertina</i> Quoy and Gaimard, 1825 (p. 75) 38 mm, Persian Gulf, off Sharja, United Emirates
21, 22	Oliva (Carmione) bulbosa color form <i>immaculata</i> Vanatta, 1915 (p. 75) 29 mm, Kenya, East Africa



Plate 6. *Carmione* species.

Plate 6.

Figure	Description
1, 2	Oliva (Carmione) bulbosa color form <i>tuberosa</i> Röding, 1798 (p. 75) 45 mm, Persian Gulf, United Emirates
3, 4	Oliva (Carmione) bulbosa color form <i>undata</i> Lamarck, 1811 (p. 75) 45 mm, Mozambique, East Africa
5, 6	Oliva (Carmione) avellana color form <i>calosoma</i> Duclos, 1835 (p. 72) 27 mm, Solomon Islands
7, 8, 9	Oliva (Carmione) caroliniana Duclos, 1835 (p. 76) 26 and 27 mm, Mozambique, East Africa
10, 11	Oliva (Carmione) caroliniana color form <i>scitula</i> Marrat, 1870 (p. 76) Durban, Natal Province, Republic of South Africa
12, 13	Oliva (Carmione) dactyliola Duclos, 1835 (p. 76) Nananu-i-ra Island, Fijis
14, 15	Oliva (Carmione) funebris Lamarck, 1811 (p. 77) 37 mm, Zamboanga, Mindanao Island, Philippines
16, 17	Oliva (Carmione) galeola Duclos, 1835 (p. 77) 37 mm, Zamboanga, Mindanao Island, Philippines
18	Oliva (Carmione) dactyliola Duclos, 1835 (p. 76) 31 mm, banded color form, Trobriand Islands, Solomon Sea, Papua New Guinea
19, 20	Oliva (Carmione) funebris Lamarck, 1811 (p. 77) 31 mm, dark form, Luzon, Philippine Islands
21, 22	Oliva (Carmione) galeola color form <i>lutea</i> Marrat, 1871 (p. 78) 37 mm, Milne Bay, Papua New Guinea
23, 24	Oliva (Carmione) keeni Marrat, 1871 (p. 78) 39 mm, Zamboanga, Mindanao Island, Philippines



Plate 7. *Carmione* species.

Plate 7.

Figure	Description
1, 2	Oliva (Carmione) lecoquiana Duclos de St. Germain, 1857 (p. 78) 28 mm, Nananu-i-ra Island, Fijis
3, 4	Oliva (Carmione) mucronalis Petuch and Sargent, new name for <i>mucronata</i> Marrat, 1871, not <i>mucronata</i> d'Orbigny, 1850 (a fossil) (p. 79) 23 mm, Bohol Island, Philippines
5, 6	Oliva (Carmione) picta Reeve, 1850 (p. 79) 30 mm, Milne Bay, Papua New Guinea
7, 8	Oliva (Carmione) avellana color form <i>propinqua</i> Marrat, 1870 (p. 73) 28 mm, Cebu, Philippine Islands
9, 10	Oliva (Carmione) similis Marrat, 1867 (p. 79) 36 mm, Milne Bay, Papua New Guinea
11, 12	Oliva (Carmione) tigrina Lamarck, 1811 (p. 80) 54 mm, Maputo, Mozambique, East Africa
13, 14	Oliva (Carmione) tigrina color form <i>holoserica</i> Marrat, 1871 (p. 80) 46 mm, Inhaca Island, Mozambique, East Africa
15, 16	Oliva (Carmione) tigrina color form <i>fallax</i> Johnson, 1910 (p. 80) 48 mm, Mozambique, East Africa
17	Oliva (Carmione) tigrina color form <i>glandiformis</i> Marrat, 1871 (p. 80) 49 mm, Mozambique, East Africa
18, 19	Oliva (Carmione) dactyliola color form <i>valentina</i> Duclos, 1844 (p. 76) 38 mm, Trobriand Islands, Papua New Guinea

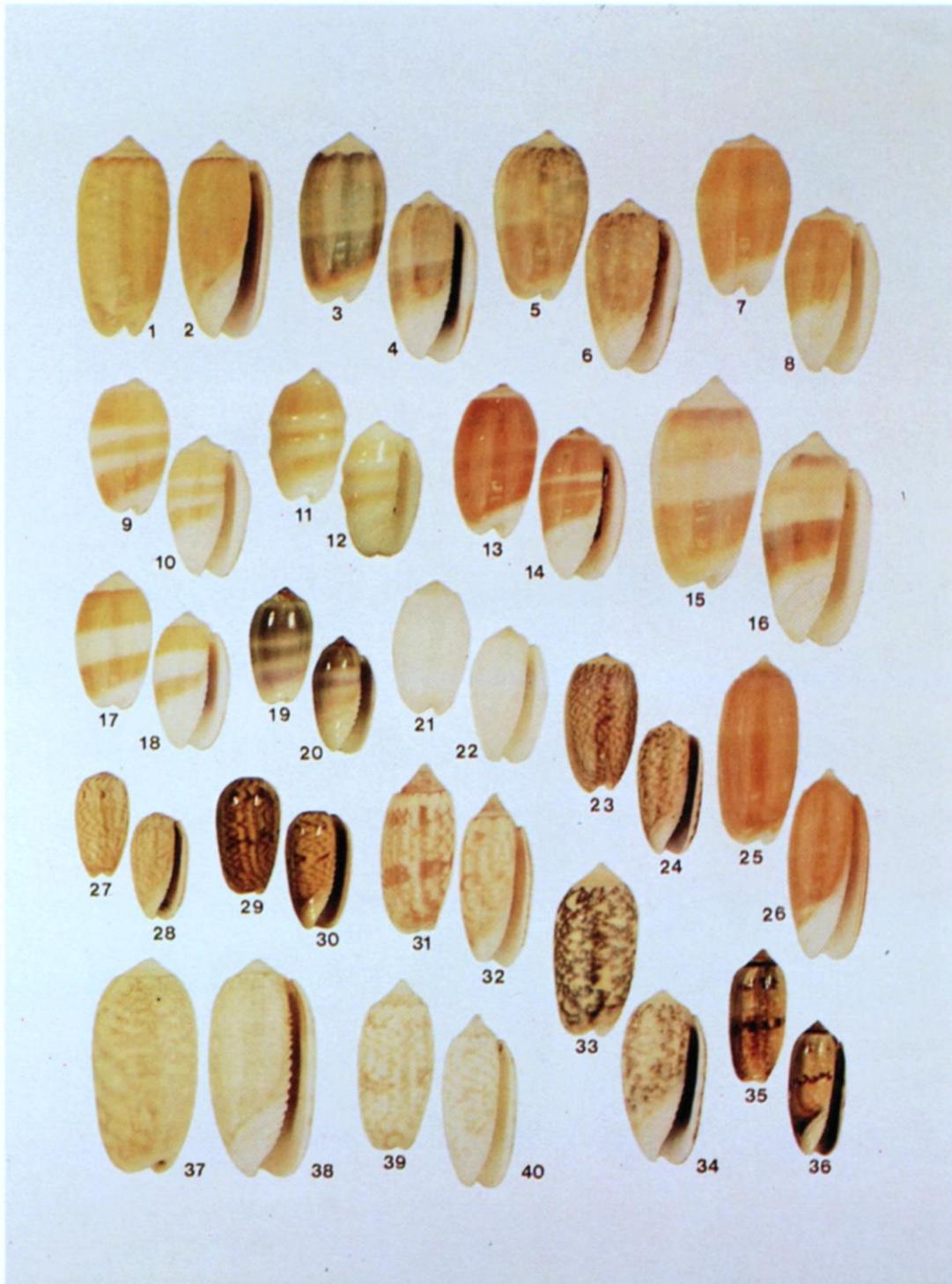


Plate 8. *Galeola* species.

Plate 8.

Figure	Description
1, 2	Oliva (Galeola) andamanensis Bridgman, 1909 (p. 81) 22 mm, Port Blair, Andaman Islands.
3, 4	Oliva (Galeola) carneola Gmelin, 1791 (p. 81) 20 mm, Philippine Islands
5, 6	Oliva (Galeola) carneola color form <i>adspersa</i> Dautzenberg, 1927 (p. 82) 20 mm, Philippine Islands
7, 8	Oliva (Galeola) carneola color form <i>aurora</i> Fischer, 1807 (p. 82) 19 mm, Islands
9, 10	Oliva (Galeola) carneola color form <i>bizonalis</i> Dautzenberg, 1927 (p. 82) 16 mm, Marshall Islands
11, 12	Oliva (Galeola) carneola kwajaleinensis da Motta, 1985 (p. 83) 15 mm, Kwajalein Atoll Lagoon, Marshall Islands
13, 14	Oliva (Galeola) carneola color form <i>candidula</i> Dautzenberg, 1927 (p. 82) 17 mm, Philippine Islands
15, 16	Oliva (Galeola) carneola color form <i>trichroma</i> Dautzenberg, 1927 (p. 82) 24 mm, Zamboanga, Mindanao Island, Philippines
17, 18	Oliva (Galeola) carneola color form <i>unizonalis</i> Dautzenberg, 1927 (p. 82) 16 mm, Nananu-i-ra Island, Fijis
19, 20	Oliva (Galeola) carneola color form <i>violacea</i> Prior, 1975 (p. 82) 14 mm, Rabaul, New Britain Island, Papua New Guinea
21, 22	Oliva (Galeola) carneola Gmelin, 1791, Albino form (p. 83) 15 mm, Philippine Islands
23, 24	Oliva (Galeola) ceramensis Schepman, 1911 (p. 83) 15 mm, 60 meters off Samarai Island, Papua New Guinea
25,26	Oliva (Galeola) lepida color form <i>eridona</i> Duclos, 1844 (p. 84) 22 mm, Port Moresby, Papua New Guinea
27, 28	Oliva (Galeola) insecta Petuch and Sargent, new species (p. 83) Holotype USNM 841437, 13 mm, 100 meters, Davao Bay, Mindanao Island, Philippines
29, 30	Oliva (Galeola) insecta Petuch and Sargent, new species (p. 83) Paratype EP, 14 mm, Davao Bay, Mindanao Island
31, 32	Oliva (Galeola) lepida Duclos, 1835 (p.84) 18 mm, pink and red form, darker than typical <i>lepida</i> , Durban, Natal Province, Republic of South Africa
33, 34	Oliva (Galeola) sidelia color form <i>grata</i> Marrat, 1871 (p. 85) 18 mm, Philippine Islands
35, 36	Oliva (Galeola) lepida solomonensis Petuch and Sargent, new subspecies (p. 84) Holotype USNM 841455, 16 mm, Nimoa Isl., Calvados Chain, Louisiade Arch., Solomons
37, 38	Oliva (Galeola) sidelia Duclos, 1835 (p. 85) 20 mm, Luzon, Philippine Islands
39, 40	Oliva (Galeola) lepida Duclos, 1835 (p. 84) 20 mm, Luzon, Philippine Islands



Plate 9. *Galeola* and *Miniaceoliva* species.

Plate 9.

Figure	Description
1, 2	Oliva (Galeola) todosina Duclos, 1835 (p. 85) Philippine Islands
3, 4	Oliva (Galeola) todosina Duclos, 1835 (p. 86) 25 mm, Dredged off Madras, India
5, 6	Oliva (Galeola) todosina Duclos, 1835 (p. 86) 25 mm, Dredged off Cuddalore, India, pinkish form
7, 8	Oliva (Galeola) volvaroides Duclos, 1835 (p. 86) 17 mm, Philippine Islands
9, 10	Oliva (Galeola) volvaroides Duclos, 1835 (p. 86) 19 mm, pink form, Okinawa, Japan
11, 12	Oliva (Galeola) volvaroides Duclos, 1835 (p. 86) 22 mm, purple form, Okinawa, Japan
13, 14	Oliva (Galeola) volvaroides Duclos, 1835 (p. 86) 24 mm, common brown form, Bali, Indonesia
15, 16	Oliva (Galeola) volvaroides Duclos, 1835 (p. 86) 23 mm, yellow form, Bali, Indonesia
17, 18	Oliva (Galeola) xenos Petuch and Sargent, new species (p. 87) Holotype USNM 841448, 19 mm, Austria Sound, Santa Isabel Island, Solomon Islands
19, 20	Oliva (Miniaceoliva) atalina Duclos, 1835 (p. 88) 35 mm, trawled in the Indian Ocean north of Mauritius
21, 22	Oliva (Miniaceoliva) caerulea color form <i>lugubris</i> (p. 88) 42 mm, Port Serangan, Bali, Indonesia
23, 24	Oliva (Miniaceoliva) sairoosa Kilburn, 1978 (p. 97) 34 mm, Tulear Bay, Madagascar
25, 26	Oliva (Miniaceoliva) caerulea Röding, 1798 (p. 88) 49 mm, Mozambique, East Africa
27, 28	Oliva (Miniaceoliva) caerulea color form <i>emeliodyna</i> Duclos, 1844 (p. 88) 35 mm, Port Louis, Mauritius
29, 30	Oliva (Miniaceoliva) caerulea color form <i>philippensis</i> Bartsch, 1918 (p. 88) 40 mm, Mindanao Island, Philippines



Plate 10. *Miniaceoliva* species.

Plate 10.

Figure	Description
1, 2	Oliva (Miniaceoliva) fumosa Marrat, 1871 (p. 89) 58 mm, Culion Leper Colony, Palawan Island, Philippines
3, 4	Oliva (Miniaceoliva) fumosa kremerorum Petuch and Sargent, new subspecies (p. 91) Holotype USNM 841460, dredged in the Bay of Bengal off Madras, India
5, 6	Oliva (Miniaceoliva) fumosa concinna Marrat, 1871 (p. 90) 50 mm, Port Vila, Vanuatu
7, 8	Oliva (Miniaceoliva) fumosa concinna color form <i>chrysoides</i> Dautzenberg, 1927 (p. 90) 45 mm, Port Vila, Vanuatu
9, 10	Oliva (Miniaceoliva) fumosa concinna color form <i>oldi</i> Ziegler, 1969 (P- 90) 46 mm, Mele Bay, Vila, Vanuatu
11, 17, 18	Oliva (Miniaceoliva) hanleyorum Petuch and Sargent, new name for <i>O. cylindrica</i> Marrat, 1867 <i>not O. cylindrica</i> Sowerby, 1850 (a fossil) (p. 91) 51 and 46 mm, Cebu Island, Philippines
12	Oliva (Miniaceoliva) fumosa concinna color form <i>chrysoides</i> Dautzenberg, 1927 (p. 90) 44 mm, Port Vila, Vanuatu
13	Oliva (Miniaceoliva) hirasei Kira, 1959 (p. 92) 39 mm, Taiwan
14	Oliva (Miniaceoliva) hirasei Kira, 1959 (p. 92) 35 mm, Siasi Island, Sulu Sea, Philippines
15, 16	Oliva (Miniaceoliva) hirasei Kira, 1959 (p. 92) 47 mm, Taiwan



Plate 11. *Miniaceoliva* species.

Plate 11.

Figure	Description
1, 2	Oliva (Miniaceoliva) irisans Lamarck, 1811 (p. 92) 52 mm, Coron, Palawan Island, Philippines
3, 4	Oliva (Miniaceoliva) irisans color form <i>albescens</i> Johnson, 1915 (p. 93) 50 mm, Siasi Island, Sulu Sea, Philippines
5, 6	Oliva (Miniaceoliva) irisans color form <i>fordi</i> Johnson, 1910 (p. 93) 45 mm, Palawan Island, Philippines
7, 8	Oliva (Miniaceoliva) irisans color form <i>ornata</i> Marrat, 1867 (p. 93) 55 mm, Mindanao Island, Philippines
9	Oliva (Miniaceoliva) irisans color form <i>ornata</i> Marrat, 1867 (p. 93) 52 mm, Zamboanga, Mindanao Island, Philippines
10, 11	Oliva (Miniaceoliva) lignaria Marrat, 1867 (p. 93) 40 mm, typical variety, Broome, Western Australia
12, 13	Oliva (Miniaceoliva) lignaria Marrat, 1867 (p. 94) 42 mm, dark form, Broome, Western Australia
14	Oliva (Miniaceoliva) lignaria Marrat, 1867 (p. 94) 43 mm, dark form, Dampier Archipelago, N.T., Australia
15, 16	Oliva (Miniaceoliva) miniacea Röding, 1798 (p. 94) 78 mm, Palawan Island, Philippines



Plate 12. *Miniaceoliva* species.

Plate 12.

Figure	Description
1, 2	Oliva (Miniaceoliva) miniacea color form <i>johnsoni</i> Higgins, 1919 (p. 95) 70 mm, Zamboanga, Mindanao Island, Philippines
3, 9	Oliva (Miniaceoliva) miniacea color form <i>marrati</i> Johnson, 1910 (p. 95) 70 mm, Zamboanga, Mindanao Island, Philippines
4, 5	Oliva (Miniaceoliva) miniacea color form <i>azemula</i> Duclos, 1835 (p. 94) 41 mm, Siasi Island, Sulu Sea, Philippines
6, 7	Oliva (Miniaceoliva) miniacea color form <i>saturata</i> Dautzenberg, 1927 (p. 94) 71 mm, Zamboanga, Mindanao Island, Philippines
8	Oliva (Miniaceoliva) miniacea color form <i>sylvia</i> Duclos, 1835 (p. 95) 53 mm, Zamboanga, Mindanao Island, Philippines
10	Oliva (Miniaceoliva) miniacea color form <i>aurantiaca</i> Schumacher, 1817 (p. 94) 51 mm, Zamboanga, Mindanao Island, Philippines
11	Oliva (Miniaceoliva) miniacea color form <i>masaris</i> Duclos, 1835 (p. 95) 51 mm, Zamboanga, Mindanao Island, Philippines



Plate 13. *Miniaceoliva* species.

Plate 13.

Figure	Description
1, 2	Oliva (Miniaceoliva) miniacea color form <i>titea</i> Duclos, 1844 (p. 95) 55 mm, Bohol Island, Philippines
3, 4	Oliva (Miniaceoliva) miniacea efasciata Dautzenberg, 1927 (p. 95) 51 mm, Kwajalein Atoll, Marshall Islands
5, 6	Oliva (Miniaceoliva) miniacea lamberti Joussemae, 1884 (p. 96) 45 mm, Isle of Pines, New Caledonia
7, 8	Oliva (Miniaceoliva) pica Lamarck, 1811 (p. 96) 59 mm, St. Brandon's Reef, Mascarene Islands
9, 10	Oliva (Miniaceoliva) pica color form <i>olympiadina</i> Duclos, 1844 (p. 96) 50 mm, North of Port Louis, Mauritius
11	Oliva (Miniaceoliva) ponderosa color form <i>albina</i> Melvill and Standen, 1897 (p. 97) 63 mm, Port Louis, Mauritius
12, 13	Oliva (Miniaceoliva) ponderosa Duclos, 1835 (p. 96) 64 mm, Port Louis, Mauritius



Plate 14. *Miniaceoliva* species.

Plate 14.

Figure	Description
1, 2	<i>Oliva (Miniaceoliva) sericea</i> Röding, 1798 (p. 97) 54 mm, Zamboanga, Mindanao Island, Philippines
3, 4	<i>Oliva (Miniaceoliva) sericea</i> color form <i>sabulosa</i> Marrat, 1868 (p. 98) 77 mm, Tuburan, Basilan Island, Southern Philippines
5, 6	<i>Oliva (Miniaceoliva) sericea</i> Röding, 1798, 80 mm (p. 98) form with large triangle markings, Tuburan, Basilan Island, Southern Philippines
7, 8	<i>Oliva (Miniaceoliva) sericea</i> color form <i>granitella</i> Lamarck, 1811 (p. 98) 77 and 68 mm, Culion Leper Colony, Palawan Island, Philippines



Plate 15. *Miniaceoliva* species.

Plate 15.

Figure	Description
1, 2	<i>Oliva (Miniaceoliva) tremulina</i> Lamarck, 1811 (p. 98) 81 mm, Port Louis, Mauritius
3, 4	<i>Oliva (Miniaceoliva) tremulina</i> color form <i>nobilis</i> Reeve, 1850 (p. 99) 89 mm, St. Brandon's Reef, Mascarene Islands
5, 6	<i>Oliva (Miniaceoliva) tremulina flammeacolor</i> Petuch and Sargent, new subspecies (p. 99) Holotype USNM 841458, 68 mm, dredged in the Bay of Bengal off Madras, India
7	<i>Oliva (Miniaceoliva) tremulina flammeacolor</i> Petuch and Sargent, new subspecies (p. 99) Paratype DS, 74 mm, dredged off Madras, India
8, 9	<i>Oliva (Miniaceoliva) tremulina</i> color form <i>zeilanica</i> Lamarck, 1811 (p. 99) 48 mm, Bali, Indonesia



Plate 16. *Multiplicoliva* and *Musteloliva* species.

Plate 16.

Figure	Description
1	<i>Oliva (Multiplicoliva) labuanensis</i> Marrat, 1871 (p. 100) Holotype LM, Labuan Island, Borneo
2, 3	<i>Oliva (Multiplicoliva) labuanensis</i> Marrat, 1871 (p. 100) 40 mm, 100 meters off Sarawak, Malaysia
4, 5	<i>Oliva (Multiplicoliva) multiplicata</i> Reeve, 1850 (p. 101) 38 mm, Kaohsiung, Taiwan
6	<i>Oliva (Multiplicoliva) multiplicata</i> Reeve, 1850 (p. 101) 40 mm, red and pink form, Taiwan
7, 8	<i>Oliva (Multiplicoliva) multiplicata</i> Reeve, 1850 (p. 101) 38 mm, Kaohsiung, Taiwan
9, 10	<i>Oliva (Musteloliva) grandicallosa</i> Petuch and Sargent, new species (p. 103) Holotype USNM 841434, 22 mm, 100 meters off Siasi Island, Sulu Sea, Philippines
11, 12	<i>Oliva (Multiplicoliva) vicdani</i> da Motta, 1982 (p. 101) 24 mm, Gavutu Island, Solomon Islands, 100 meter depth
13, 14	<i>Oliva (Musteloliva) rufopicta</i> Weinkauff, 1878 (p. 105) 27 mm, dredged in 30 meters off the Mergui Archipelago, Burma in the Andaman Sea
15, 16	<i>Oliva (Musteloliva) davaoensis</i> Petuch and Sargent, new species (p. 103) Holotype USNM 841431, 27 mm, Davao Bay, Mindanao Island, Philippines
17,18	<i>Oliva (Musteloliva) boholensis</i> Petuch and Sargent, new species (p. 102) Holotype USNM 841430, 28 mm, Bohol Island, Philippines
19, 20	<i>Oliva (Musteloliva) mustelina inornata</i> Marrat, 1870 (p. 104) 34 mm, Tainan, Taiwan
21, 22	<i>Oliva (Musteloliva) mustelina</i> Lamarck, 1811 (p. 104) 37 mm, Minaba, Wakayama Prefecture, Japan
23, 24	<i>Oliva (Musteloliva) concavospira</i> Sowerby, 1914 (p. 102) 35 mm, Bohol Island, Philippines
25, 26	<i>Oliva (Musteloliva) concavospira</i> Sowerby, 1914 (p. 102) 23 mm, Amami Oshima, Ryukyu Islands, Japan, albinistic



Plate 17. *Neocylindrus* and *Oliva* species.

Plate 17.

Figure	Description
1, 2, 3, 4	Oliva (Neocylindrus) tessellata Lamarck, 1811 (p. 105) 22 and 30 mm, Malaita Island, Solomons and Mactan Island, Philippines
5, 6, 7,8	Oliva (Oliva) fabrei Ducros de St. Germain, 1857 (p. 106) 32 and 28 mm, Palawan Island, Philippines
9, 10, 11,12	Oliva (Oliva) longispira Bridgman, 1906 (p. 106) 33 and 28 mm, Milne Bay, Papua New Guinea
13	Oliva (Oliva) oliva color form <i>jayana</i> Ducros de St Germain, 1857 (p. 107) 20 mm, Nananu-i-ra Island, Fijis
14, 15	Oliva (Oliva) oliva color form <i>oriola</i> Lamarck, 1811 (p. 107) 30 mm, Zamboanga, Mindanao Island, Philippines
16, 17	Oliva (Oliva) oliva color form <i>tigridella</i> Duclos, 1835 (p. 108) 22 mm, Cairns, Queensland, Australia
18, 19	Oliva (Oliva) oliva Linnaeus, 1758 (p. 106) 31 mm, Palawan Island, Philippines
20, 21	Oliva (Oliva) oliva color form <i>dealbata</i> Röding, 1798 (p. 107) 25 mm, Bali, Indonesia
22, 23	Oliva (Oliva) oliva color form <i>flaveola</i> Duclos, 1835 (p. 107) 26 mm, Zamboanga, Mindanao Island, Philippines
24, 25	Oliva (Oliva) oliva color form <i>samarensis</i> Johnson, 1915 (p. 107) 18 mm, Samar, Philippines
26, 27	Oliva (Oliva) oliva taeniata Link, 1807 (p. 108) 32 mm, Madras, India



Plate 18. *Oliva*, *Omogymna*, and *Parvoliva* species.

Plate 18.

Figure	Description
1, 2	Oliva (Oliva) oliva taeniata color form <i>broderipi</i> Ducros de St Germain, 1857 (p. 108) 33 mm, Madras, India
3, 4	Oliva (Oliva) oliva taeniata color form <i>algida</i> Vanatta, 1915 (p. 108) 32 mm, Madras, India
5, 6	Oliva (Oliva) oliva taeniata color form <i>candida</i> Lamarck, 1811 (p. 108) 30 mm, Madras, India
7, 8	Oliva (Oliva) oliva taeniata color form <i>stellata</i> Duclos, 1835 (p. 109) 31 mm, Madras, India
9, 10	Oliva (Omogymna) paxillus Reeve, 1850 (p. 110) 21 mm, Agana, Guam
11, 12	Oliva (Oliva) smithi Bridgman, 1906 (p. 109) 18 mm, 30 meter depth off Mergui Archipelago, Burma
13, 14	Oliva (Omogymna) sandwichensis Pease, 1860 (p. 111) 23 mm, Kaanapali, Maui, Hawaii
15	Oliva (Omogymna) richerti Kay, 1979 (p. 111) 32 mm, 100 meter depth off Oahu, Hawaii, Photo courtesy of Hawaiian Shell News
16, 17	Oliva (Omogymna) sandwichensis Pease, 1860 (p. 111) 25 mm, Oahu, Hawaii (p. 111)
18, 19	Oliva (Parvoliva) sibogae Petuch and Sargent, new name for <i>dubia</i> Schepman, 1911 not <i>dubia</i> Lea, 1833 (a fossil) (p. 112) 12 mm, 100 meter depth off Samarai Island, Papua New Guinea
20, 21	Oliva (Parvoliva) rufofulgurata Schepman, 1911 (p. 112) 15 mm, 100 meter depth off Samarai Island, Papua New Guinea
22, 23	Oliva (Parvoliva) rufofulgurata Schepman, 1911 (p. 112) 19 mm, 100 meter depth off Malaita Island, Solomons
24, 25	Oliva (Oliva) oliva taeniata color form <i>martini</i> Dautzenberg, 1927 (p. 109) 25 mm, Madras, India



Plate 19. *Porphyria* and *Proxoliva* species.

Plate 19.

Figure	Description
1, 2, 11	<i>Oliva (Porphyria) porphyria</i> (Linnaeus, 1758) (p. 113) 105 and 110 mm, Punta Chivato, Baja Ca1, Mexico
3, 4	<i>Oliva (Proxoliva) caldania</i> Duclos, 1835 (p. 114) 16 mm, Cairns, Queensland, Australia
5, 6	<i>Oliva (Proxoliva) caldania queenslandica</i> Petuch and Sargent, new subspecies (p. 114) Holotype ANM, 100 meter depth, Moreton Bay, Queensland, Australia
7, 8	<i>Oliva (Proxoliva) athenia</i> Duclos, 1835 (p. 114) 19 mm, Palawan Island, Philippines
9, 10	<i>Oliva (Proxoliva) athenia</i> Duclos, 1835 (p. 114) 21 mm, Mindanao Island, Philippines
12,13	<i>Oliva (Proxoliva) faba</i> Marrat, 1867 (p. 115) 15 mm, Samarai Island, Papua New Guinea
14, 15	<i>Oliva (Proxoliva) faba</i> Marrat, 1867 (p. 115) 15 mm, Milne Bay, Papua New Guinea
16, 17	<i>Oliva (Proxoliva) faba</i> Marrat, 1867 (p. 115) 14 mm, Zamboanga, Mindanao Island, Philippines
18, 19	<i>Oliva (Proxoliva) faba</i> Marrat, 1867 (p. 115) 14 mm, dark form, Milne Bay, Papua New Guinea
20, 21	<i>Oliva (Proxoliva) caldania</i> Duclos, 1835 (p. 114) 14 mm, yellow specimen, Cairns, Queensland, Australia
22, 23	<i>Oliva (Proxoliva) vanuatuensis</i> Petuch and Sargent, new species (p. 115) Paratype EP, 14 mm, Vila, Vanuatu
24, 25	<i>Oliva (Proxoliva) vanuatuensis</i> Petuch and Sargent, new species (p. 115) Holotype USNM 841447, 14 mm, Vila, Vanuatu

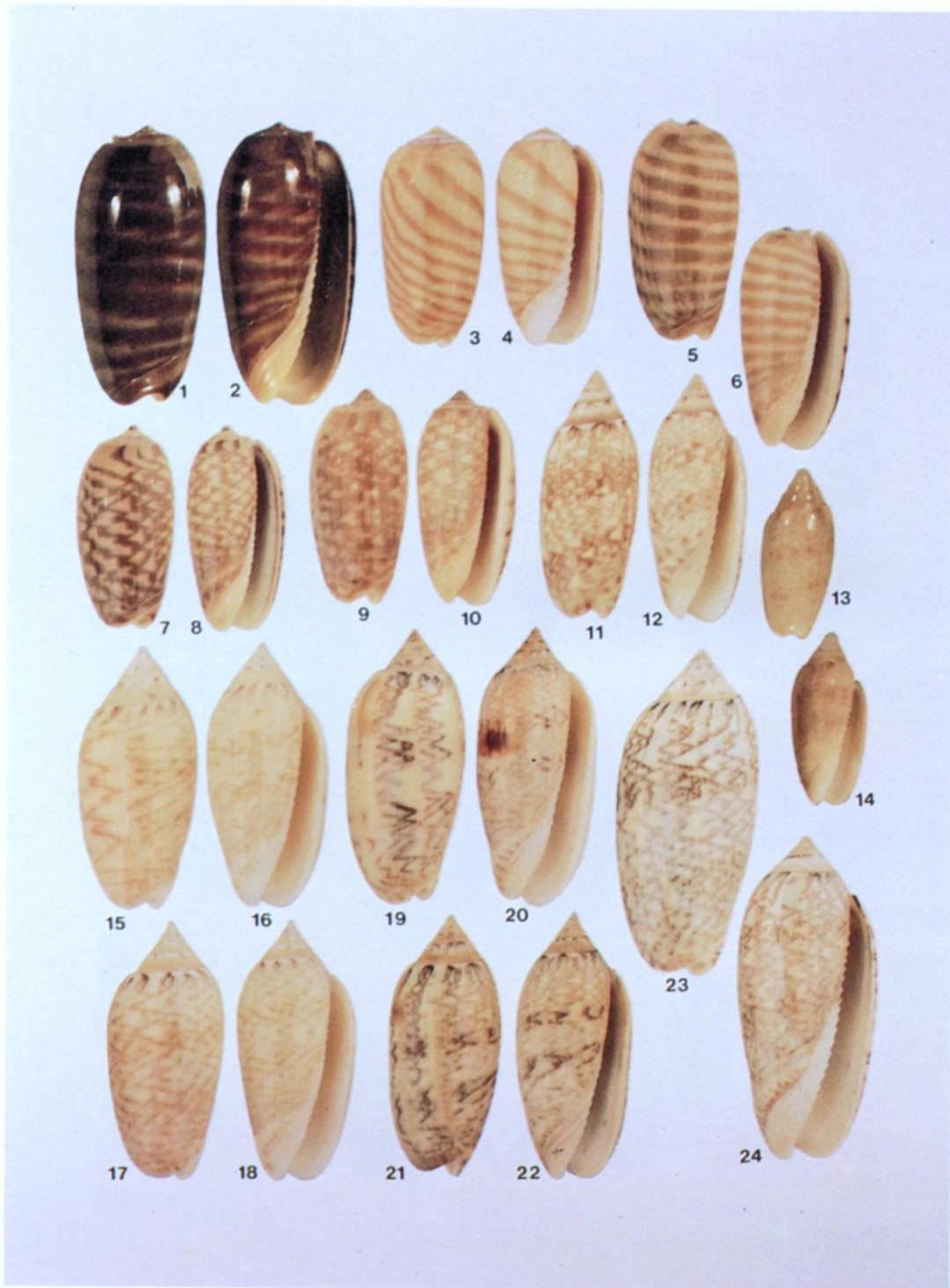


Plate 20. *Rufoliva* and *Strephona* species.

Plate 20.

Figure	Description
1, 2	<i>Oliva (Rufoliva) rufula</i> Duclos, 1835 (p. 118) 35 mm, Zamboanga, Mindanao Island, Philippines
3, 4	<i>Oliva (Rufoliva) baileyi</i> Petuch, 1979 (p. 116) Paratype EP, 30 mm, 100 meter depth Marau Sound, Guadalcanal, Solomon Islands
5, 6	<i>Oliva (Rufoliva) rufula</i> Duclos, 1835 (p. 118) 31 mm, banded form, New Ireland Island, Papua New Guinea
7, 8	<i>Oliva (Rufoliva) rufula tectiphora</i> Petuch and Sargent, new subspecies (p. 118) Paratype EP, 29 mm, Siasi Island, Sulu Sea, Philippines
9, 10	<i>Oliva (Rufoliva) rufula tectiphora</i> Petuch and Sargent, new subspecies (p. 118) Holotype USNM 841456, 29 mm, Siasi Island, Sulu Sea, Philippines
11, 12	<i>Oliva (Strephona) antillensis</i> Petuch and Sargent, new species (p. 124) Holotype USNM 841425, 28 mm, Gonave Island, Haiti
13, 14	<i>Oliva (Strephona) species</i> dredged in 200 meters off the east coast of Belize, 15 mm, EP
15, 16	<i>Oliva (Strephona) bahamasensis</i> Petuch and Sargent, new species (p. 125) Holotype USNM 841426, 200 meter depth off Grand Bahama Island, Bahamas, 45 mm
17, 18	<i>Oliva (Strephona) bahamasensis</i> Petuch and Sargent, new species (p. 125) Paratype EP, 44 mm, Grand Bahama Island
19, 20	<i>Oliva (Strephona) barbadensis</i> Petuch and Sargent, new species (p. 126) Holotype USNM 841427, 50 mm, 200 meter depth off St. James, Barbados
21, 22	<i>Oliva (Strephona) barbadensis</i> Petuch and Sargent, new species (p. 126) Paratype EP, 50 mm, off St. James, Barbados
23, 24	<i>Oliva (Strephona) bewleyi</i> Marrat, 1870 (p. 126) 55 mm, 50 meter depth off Cartagena, Colombia



Plate 21. *Strephona* species.

Plate 21.

Figure	Description
1, 2	Oliva (Strephona) bewleyi color form <i>formosa</i> Marrat, 1870 (p. 127) 56 mm, 50 meter depth off Cartagena, Colombia
3, 4	Oliva (Strephona) bewleyi color form <i>formosa</i> Marrat, 1870 (p. 127) 33 mm, 50 meter depth off Cabo La Vela, Colombia
5, 6	Oliva (Strephona) bewleyi Marrat, 1870 (p. 126) 55 mm, 35 meter depth, Boca de Toros, Panama
7, 8	Oliva (Strephona) bifasciata bollingi Clench, 1937 (p. 127) 38 mm, deep water off Cape Canaveral, Florida
9,10	Oliva (Strephona) bifasciata color form <i>pattersoni</i> Clench, 1945 (p. 128) 42 mm, St. Vincent Island, Lesser Antilles
11, 12	Oliva (Strephona) bifasciata Küster, 1878 (p. 127) 32 mm, banded form, which is similar to Küster's type, Gonave Island, Haiti
13, 14	Oliva (Strephona) bifasciata bollingi Clench, 1937 (p. 127) 30 mm, 20 meter depth off Dania, Florida
15	Oliva (Strephona) bifasciata Küster, 1878 (p. 127) 47 mm, common color form, Gonave Island, Haiti
16, 17	Oliva (Strephona) bifasciata jenseni Petuch and Sargent, new subspecies (p. 128) Holotype USNM 841453, 51 mm, Blue Horizons Beach, Bermuda
18, 19	Oliva (Strephona) bifasciata bollingi Clench, 1937 (p. 127) 33 mm, Gulf of Mexico off Cape Sable, Florida
20	Oliva (Strephona) bifasciata bollingi color form <i>pattersoni</i> Clench, 1945 (p. 128) 30 mm, Dania, Florida. Both <i>b. bifasciata</i> and <i>b. bollingi</i> are occasionally found in banded and solid brown color forms



Plate 22. *Strephona* species.

Plate 22.

Figure	Description
1, 2	Oliva (Strephona) davisae Durham, 1950 (p. 129) 30 mm, Angel de la Guarda Island, Gulf of California
3, 4	Oliva (Strephona) drangai Schwengel, 1951 (p. 129) 32 mm, 200 meter depth off Tobago
5, 6	Oliva (Strephona) finlayi Petuch and Sargent, new species (p. 129) Holotype USNM 841432, 42 mm, 200 meter depth in Matanzas Bay, Cuba
7	Oliva (Strephona) finlayi Petuch and Sargent, new species (p. 129) Paratype EP, 42 mm, Matanzas Bay, Cuba
8, 9	Oliva (Strephona) flammulata Lamarck, 1811 (p. 130) 28 mm, Freetown, Sierra Leone, West Africa
10, 11	Oliva (Strephona) flammulata color form <i>castanea</i> Dautzenberg, 1910 (p. 139) 30 mm, N'Gor, Senegal, West Africa
12, 13	Oliva (Strephona) flammulata color form <i>isabellina</i> Dautzenberg, 1910 (p. 130) 25 mm, Luanda, Angola, West Africa
14, 15	Oliva (Strephona) flammulata color form <i>pallida</i> Dautzenberg, 1910 (p. 130) 29 mm, N'Gor, Senegal, West Africa
16, 17	Oliva (Strephona) flammulata verdensis Petuch and Sargent new subspecies (p. 131) Holotype USNM 841429, 32.5 mm, Port Grande Harbour, Cape Verde Islands
18, 19	Oliva (Strephona) fulgurator Röding, 1798 (p. 132) 45 mm, Malmok Coast, Aruba
20, 21	Oliva (Strephona) flammulata verdensis Petuch and Sargent, new subspecies (p. 131) Paratypes, 31 and 28 mm, Port Grande Harbour, Cape Verde Islands
22, 23	Oliva (Strephona) fulgurator Röding, 1798 (p. 132) 45 mm, red form, Malmok Coast, Aruba
24, 25, 26	Oliva (Strephona) foxi Stingley, 1984 (p. 131) 35 and 32 mm, Cocos Island, Costa Rica

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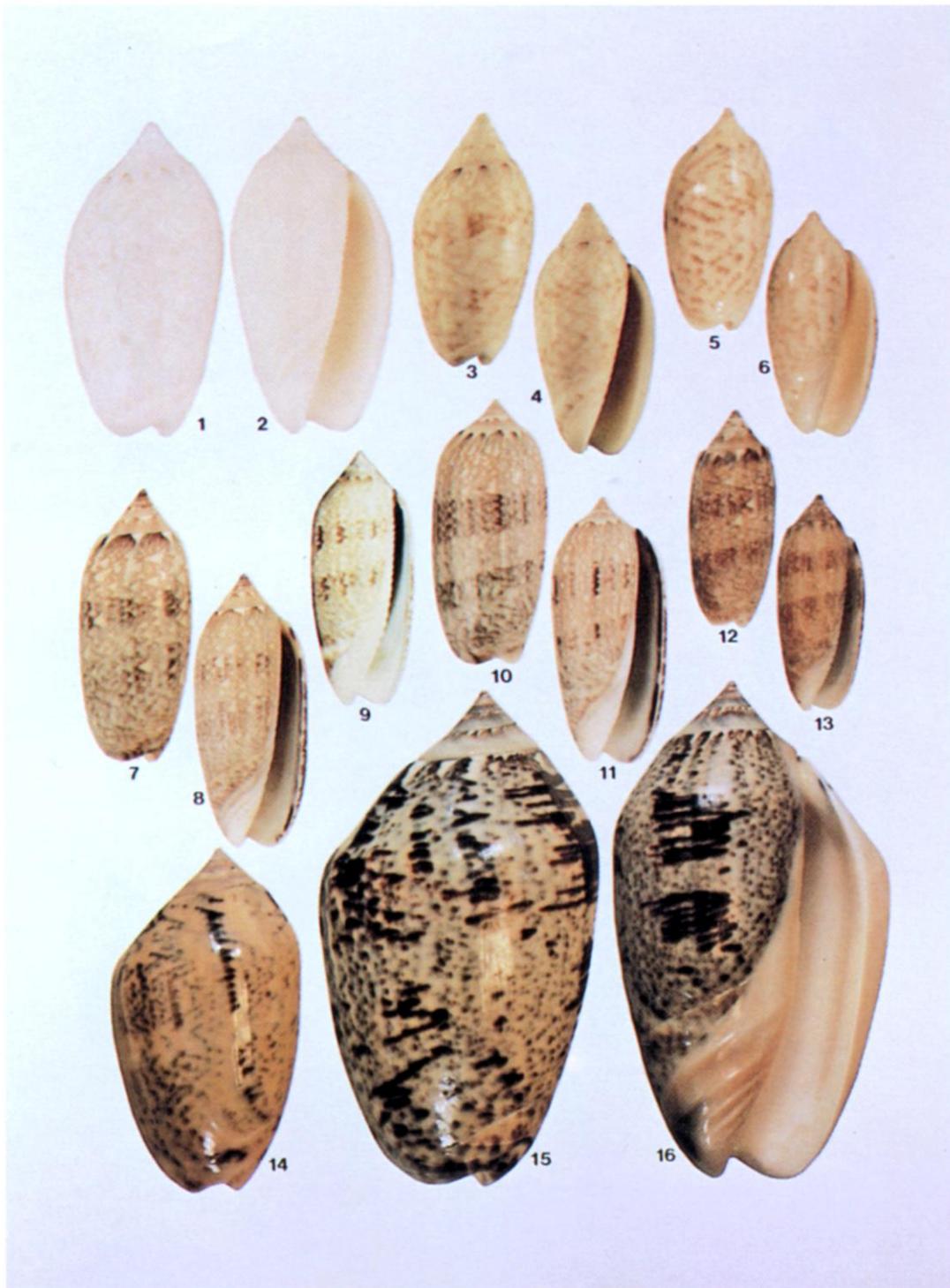


Plate 23. *Strephona* species.

Plate 23.

Figure	Description
1, 2	Oliva (Strephona) fulgurator color form <i>aldinia</i> Duclos, 1844 (p. 132) 52 mm, Curacao, Netherlands Antilles
3, 4	Oliva (Strephona) fulgurator color form <i>mercatoria</i> Marrat, 1871 (p. 133) 35 mm, Bonaire, Netherlands Antilles
5, 6	Oliva (Strephona) fulgurator bullata Marrat, 1871 (p. 132) 34 mm, Los Roques Islands, Venezuela
7, 8	Oliva (Strephona) graphica Marrat, 1870 (p. 134) 42 mm, Bahia, Brazil
9	Oliva (Strephona) graphica color form <i>circinata</i> Marrat, 1871 (p. 134) Holotype LM, Bahia, Brazil
10, 11	Oliva (Strephona) graphica color form <i>circinata</i> (p. 134) 45 mm, Abrolhos Islands, Brazil
12, 13	Oliva (Strephona) goajira Petuch and Sargent, new species (p. 133) Holotype USNM 841433, 38 mm, Goajira Peninsula, Colombia
14	Oliva (Strephona) incrassata Lightfoot, 1786 (p. 134) 64 mm, San Felipe, Baja California, Mexico
15, 16	Oliva (Strephona) incrassata Lightfoot, 1786 (p. 134) 92 mm, San Felipe, Baja California, Mexico

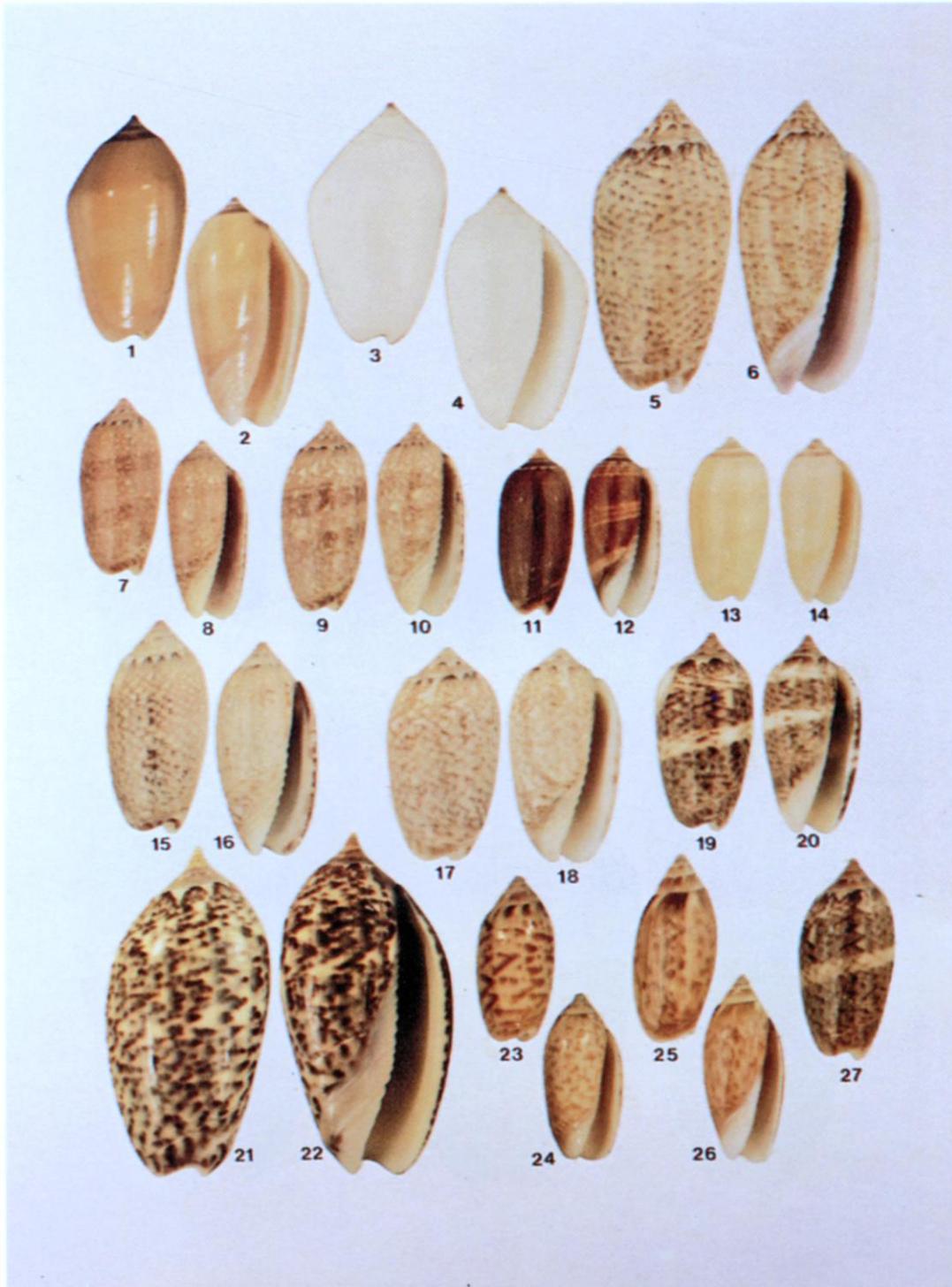


Plate 24. *Strephona* species.

Plate 24

Figure	Description
1, 2	Oliva (Strephona) incrassata color form <i>burchorum</i> Zeigler, 1969 (p. 134) 40 mm, San Felipe, Baja California del Norte, Mexico
3, 4	Oliva (Strephona) incrassata color form <i>nivea</i> Pilsbry, 1910 (p. 134) 42 mm, San Felipe, Baja California del Norte, Mexico
5, 6	Oliva (Strephona) ionopsis Berry, 1969 (p. 135) 52 mm, 50 meters depth, Gulf of California, Mexico
7, 8	Oliva (Strephona) jamaicensis Marrat, 1870 (p. 135) 30 mm, Montego Bay, Jamaica
9, 10	Oliva (Strephona) jamaicensis brunnea Marrat, 1870 (p. 135) 32 mm, Luquillo, Puerto Rico
11, 12	Oliva (Strephona) jamaicensis brunnea Marrat, 1870 (p. 135) 28 mm, dark brown form, Luquillo, Puerto Rico
13, 14	Oliva (Strephona) jamaicensis brunnea Marrat, 1870 (p. 135) 28 mm, light golden yellow form, Luquillo, Puerto Rico
15, 16	Oliva (Strephona) jamaicensis brunnea Marrat, 1870 form <i>figura</i> Marrat, 1870 (p. 136) 34 mm, Mona Island, west of Puerto Rico
17, 18	Oliva (Strephona) jamaicensis zombia Petuch and Sargent new subspecies (p. 136) Holotype USNM 841454, 24 mm, Gonave Island, Haiti
19, 20	Oliva (Strephona) kerstitchi da Motta, 1985 (p. 137) 27 meter depth off Santa Catalina Island, Sonora, Mexico
21, 22	Oliva (Strephona) julieta Duclos, 1833 (p. 136) 55 mm, Playa de Jaco, Costa Rica
23, 24	Oliva (Strephona) kaleontina Duclos, 1835 (p. 137) 28 mm, Mazatlan, Mexico
25, 26	Oliva (Strephona) kaleontina Duclos, 1835 (p. 137) 30 mm, deep water form, 70 meters off Costa Rica
27	Oliva (Strephona) kerstitchi da Motta, 1985 (p. 137) 28 mm, Santa Catalina Island, Sonora, Mexico



Plate 25. *Strephona* species.

Plate 25

Figure	Description
1, 2	Oliva (Strephona) magdae Petuch and Sargent, new species (p. 138) Holotype USNM 841441, 40 mm, 300 meter depth off Matanzas Bay, Cuba
3	Oliva (Strephona) magdae Petuch and Sargent, new species (p. 138) Paratype EP, 40 mm, off Matanzas, Bay, Cuba
4, 5	Oliva (Strephona) maya Petuch and Sargent, new species (p. 139) Holotype USNM 841443, 60 mm, Contoy Island, Yucatan, Mexico
6, 7	Oliva (Strephona) nivosa Marrat, 1870 (p. 140) 39 mm, deep water form, 30 meter depth off the Goajira Peninsula, Colombia
8, 9	Oliva (Strephona) maya Petuch and Sargent new species (p. 139) Paratype EP, 66 mm, Contoy Island, Yucatan, Mexico
10, 11	Oliva (Strephona) nivosa Marrat, 1870 (p. 139) 46 mm, St. Vincent, Lesser Antilles
12	Oliva (Strephona) nivosa Marrat, 1870 (p. 139) 44 mm, black form, St Vincent, Lesser Antilles
13, 14	Oliva (Strephona) obesina Duclos, 1835 (p. 140) 42 mm, Cholla Bay, Sonora, Mexico
15, 16	Oliva (Strephona) olivacea Marrat, 1870 (p. 140) 43 mm, Blue Horizons, Bermuda
17, 18	Oliva (Strephona) olssoni Petuch and Sargent, new species (p. 140) Holotype USNM 841444, 36 mm, 60 meter depth, Gulf of Panama



Plate 26. *Strephona* species.

Plate 26

Figure	Description
1, 2	Oliva (Strephona) peruviana Lamarck, 1811 (p. 141) 52 mm, Cavancha Beach, Iqueque, Chile
3, 4	Oliva (Strephona) peruviana color form <i>castanea</i> Johnson, 1911 (p. 141) 36 mm, Cavancha Beach, Iqueque, Chile
5, 6	Oliva (Strephona) peruviana color form <i>fulgurata</i> Martens, 1869 (p. 142) 50 mm, Cavancha Beach, Iqueque, Chile
7, 8	Oliva (Strephona) peruviana form <i>coniformis</i> Philipp1, 1848 (p. 142) 36 mm, Cavancha Beach, Iqueque, Chile
9, 10	Oliva (Strephona) peruviana form <i>coniformis</i> Philipp1, 1848 (p. 142) 35 mm, Cavancha Beach, Iqueque, Chile
11, 12	Oliva (Strephona) peruviana color form <i>livida</i> Johnson, 1911 (p. 142) 51 mm, Cavancha Beach, Iqueque, Chile
13, 14	Oliva (Strephona) peruviana color form <i>subcastanea</i> (p. 142) 45 mm, Cavancha Beach, Iqueque, Chile
15, 16	Oliva (Strephona) polpasta Duclos, 1835 (p. 142) 43 mm, Mazatlan, Mexico
17, 18	Oliva (Strephona) polpasta color form <i>callosa</i> Li, 1930 (p. 142) 51 mm, Pedro Gonzales Island, Perlas Islands, Panama
19	Oliva (Strephona) polpasta Duclos, 1835 (p. 142) 49 mm, Perlas Islands, Panama
20, 21	Oliva (Strephona) radix Petuch and Sargent, new species (p. 143) Holotype USNM 841446, 38 mm, 75 meter depth off Isla La Plata, Ecuador
22, 23	Oliva (Strephona) radix Petuch and Sargent, new species (p. 143) Paratype EP, 36 mm, off Isla La Plata, Ecuador

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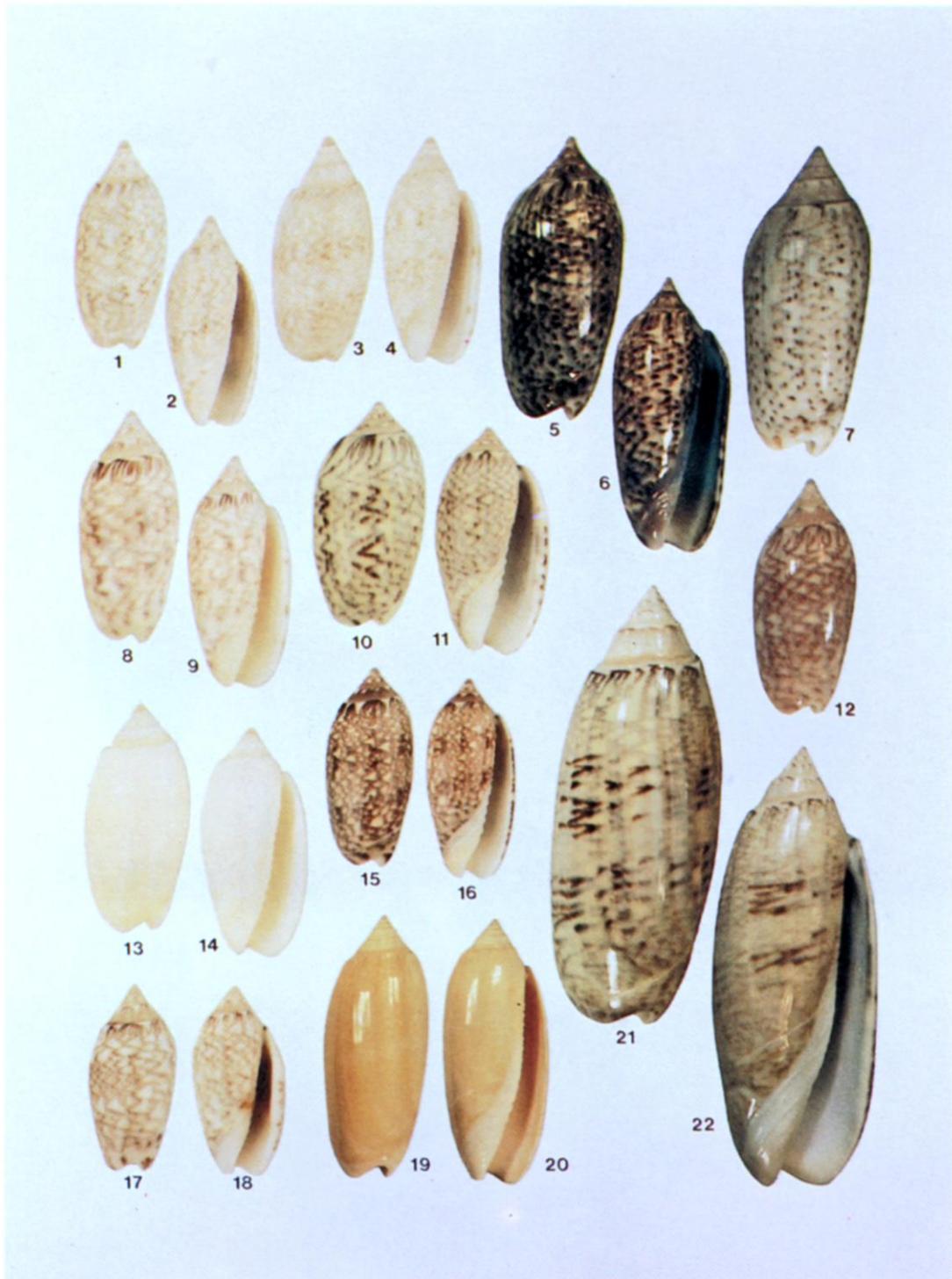


Plate 27. *Strephona* species.

Plate 27

Figure	Description
1, 2	Oliva (Strephona) reclusa Marrat, 1871 (p. 143) 37 mm, Malmok, Aruba, Netherlands Antilles
3, 4	Oliva (Strephona) reclusa Marrat, 1871 (p. 143) 40 mm, Malmok, Aruba, Netherlands Antilles
5, 6	Oliva (Strephona) rejecta Burch and Burch, 1962 (p. 144) 50 mm, Cholla Bay, Sonora, Mexico
7	Oliva (Strephona) rejecta Burch and Burch, 1962 (p. 144) 53 mm, Cholla Bay, Sonora, Mexico
8, 9	Oliva (Strephona) reticularis Lamarck, 1811 (p. 144) 40 mm, Bimini, Bahamas
10, 11	Oliva (Strephona) reticularis color form <i>sowerbyi</i> Marrat, 1870 40 mm, Gonave Island, Haiti (p. 145)
12	Oliva (Strephona) reticularis Lamarck, 1811 (p. 144) 41 mm, Luquillo, Puerto Rico
13, 14	Oliva (Strephona) reticularis color form <i>olorinella</i> Duclos, 1835 (p. 145) 40 mm, Bimini, Bahamas
15, 16	Oliva (Strephona) reticularis Lamarck, 1811 (p. 144) 36 mm, St. Vincent, Lesser Antilles
17, 18	Oliva (Strephona) reticularis Lamarck, 1811 (p. 144) 33 mm, Guantanamo Bay, Cuba
19, 20	Oliva (Strephona) sayana color form <i>citrina</i> Johnson, 1911 (p. 146) 46 mm, Pass-a-grille Beach, St Petersburg, Florida
21, 22	Oliva (Strephona) sayana Ravenel, 1834 (p. 145) 73 mm, Beer Can Island, Big Pass, Sarasota, Florida



Plate 28. *Strephona* species.

Plate 28

Figure	Description
1, 2	Oliva (Strephona) sayana Ravenel, 1834 (p. 146) 53 mm, Tampa Bay, Florida, albino specimen
3	Oliva (Strephona) sayana Ravenel, 1834 (p. 146) 48 mm, purple or lavender form, Lido Beach, Sarasota, Florida
4, 5	Oliva (Strephona) sayana sarasotensis Petuch and Sargent, new subspecies (p. 146) Holotype USNM 841450, 40 mm, 10 meter depth in the Gulf of Mexico off Sarasota, Florida
6	Oliva (Strephona) spicata color form <i>intertincta</i> Carpenter, 1857 (p. 149) 51 mm, Pedro Gonzales Island, Perlas Islands, Gulf of Panama
7, 8	Oliva (Strephona) spicata Roding, 1798 (p. 148) 63 mm, Taboga Island, Panama
9, 10	Oliva (Strephona) spicata color form <i>fuscata</i> Marrat, 1871 (p. 149) 57 mm, Perlas Islands, Gulf of Panama
11	Oliva (Strephona) spicata color form <i>araneosa</i> Lamarck, 1811 (p. 148) 47 mm, Punta Ballena, Costa Rica
12, 13	Oliva (Strephona) spicata deynzeræ Petuch and Sargent, new subspecies (p. 149) Holotype USNM 841452, 55 mm, Cocos Island, Costa Rica
14, 15	Oliva (Strephona) spicata deynzeræ Petuch and Sargent, new species (p. 149) 53 mm, black form, Cocos Island, Costa Rica
16, 17	Oliva (Strephona) spicata melchersi Menke, 1851 (p. 150) 53 mm, Isla Angel de la Guarda, Gulf of California

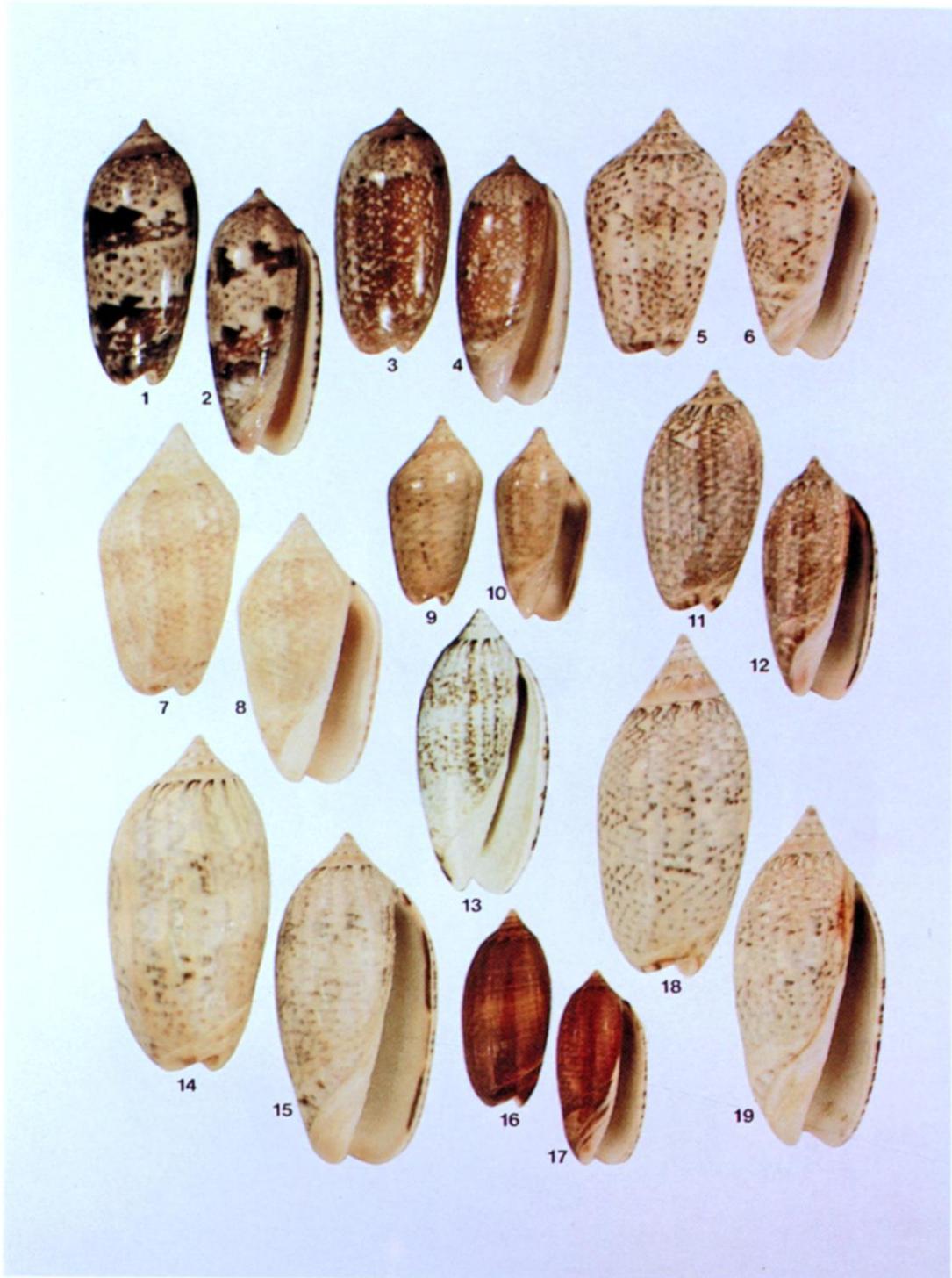


Plate 29. *Strephona* species.

Plate 29

Figure	Description
1, 2, 3, 4	Oliva (Strephona) splendidula Sowerby, 1825 (p. 150) 48 and 43mm., Perlas Islands, Gulf of Panama
5, 6	Oliva (Strephona) subangulata Philippi, 1848 (p. 150) 43 mm, southern Gulf of California
7, 8	Oliva (Strephona) subangulata corteziana Petuch and Sargent, new subspecies (p. 150) Paratype DS, 46 mm, Isla Angel de la Guarda, Gulf of California
9, 10	Oliva (Strephona) subangulata corteziana Petuch and Sargent, new subspecies (p. 150) Holotype USNM 841457, 32 mm, 20 meter depth of Isla Angel de la Guarda, northern Gulf of California
11, 12	Oliva (Strephona) tisiphona Duclos, 1844 (p. 151) 42 mm, Amuay Bay, Paraguana Peninsula, Venezuela
13	Oliva (Strephona) tisiphona color form <i>oblonga</i> Marrat, 1870 (p. 152) Holotype LM, Colombia
14, 15	Oliva (Strephona) tisiphona color form <i>oblonga</i> Marrat, 1870 (p. 152) 58 mm, Cabo La Vela, Goajira Peninsula, Colombia
16, 17	Oliva (Strephona) tisiphona color form <i>hepatica</i> Marrat, 1871 (p. 152) 36 mm, Punto Fijo, Venezuela
18, 19	Oliva (Strephona) tisiphona oniska Duclos, 1844 (p. 152) 59 mm, 100 meter depth off Magdalena river mouth, Colombia



Plate 30. *Strephona* species.

Plate 30

Figure	Description
1, 2	Oliva (Strephona) tisiphona schepmani Weisbord, 1962 (p. 152) 52 mm, 35 meter depth off Isla Margarita, Venezuela
3	Oliva (Strephona) truncata Marrat, 1867 (p. 153) Holotype LM, Panama (Pacific side)
4, 5, 6	Oliva (Strephona) truncata Marrat, 1867 (p. 153) 38 mm, Gulf of Panama
7, 8	Oliva (Strephona) venulata Lamarck, 1811 (p. 153) 45 mm, Guaymas, Sonora, Mexico
9, 10	Oliva (Strephona) venulata Lamarck, 1811 (p. 153) 41 mm, Puerto San Carlos, Sonora, Mexico
11, 12	Oliva (Strephona) venulata cumingii Reeve, 1830 (p. 154) 40 mm, La Paz, Baja California del Sur, Mexico
13, 14	Oliva (Strephona) venulata color form <i>ustulata</i> Lamarck, 1811 (p. 153) 35 mm, Puerto San Carlos, Sonora, Mexico
15, 16, 17	Oliva (Strephona) venulata pindarina Duclos, 1835 (p. 154) 39 mm, Concepcion Bay, Baja California
18, 19	Oliva (Strephona) venulata pindarina Duclos, 1835 (p. 154) 35 mm, La Paz, Baja California del Sur, Mexico, golden form
20, 21	Oliva (Strephona) violacea Marrat, 1867 (p. 155) 42 mm, Punta Escondido, Mexico
22, 23	Oliva (Strephona) vermiculata Gray, 1858 (p. 155) 26 mm, Aruba, Netherlands Antilles
24, 25	Oliva (Strephona) venulata color form <i>hemphilli</i> Johnson, 1915 (p. 153) 31 mm, La Paz, Baja California del Sur, Mexico
26	Oliva (Strephona) venulata color form <i>harpularia</i> Lamarck, 1811 (p. 153) 38 mm, La Paz, Baja California del Sur, Mexico



Plate 31. *Strephonella* and *Viduoliva* species.

Plate 31

Figure	Description
1, 2	Oliva (Strephonella) undatella Lamarck, 1811 (p. 156) 10 mm, Colima, Mexico
3, 4	Oliva (Strephonella) undatella color form <i>nedulina</i> Duclos, 1835 (p. 156) 12 mm, Colima, Mexico
5, 6	Oliva (Strephonella) undatella color form <i>tenebrosa</i> Wood, 1828 (p. 156) 11 mm, Colima, Mexico
7, 8	Oliva (Strephonella) undatella ecuadoriana Petuch and Sargent, new subspecies (p. 156) Paratype DS, 22 mm, Isla La Plata, Ecuador, albino
9, 10	Oliva (Strephonella) undatella ecuadoriana Petuch and Sargent, new subspecies (p. 156) Paratype EP, 20 mm, Isla La Plata, Ecuador
11, 12	Oliva (Strephonella) undatella ecuadoriana Petuch and Sargent, new subspecies (p. 156) Holotype USNM 841459, 22 mm, 20 meter depth off Isla La Plata, Ecuador
13, 14	Oliva (Viduoliva) angustata Murrat, 1868 (p. 157) 37 mm, Milne Bay, Papua New Guinea
15, 16	Oliva (Viduoliva) elegans Lamarck, 1811 (p. 158) 45 mm, Zamboanga, Mindanao Island, Philippines
17, 18	Oliva (Viduoliva) clara Murrat, 1871 (p. 158) 22 mm, Trobriand Islands, Solomon Sea
19, 20	Oliva (Viduoliva) elegans Lamarck, 1811 (p. 158) 44 mm, Zamboanga, Mindanao Island, Philippines
21, 22	Oliva (Viduoliva) elegans color form <i>pintamella</i> Duclos, 1835 (p. 159) 27 mm, Denpasar, Bali, Indonesia
23, 24	Oliva (Viduoliva) elegans Lamarck, 1811 (p. 160) 45 mm, light color form from Papua New Guinea. This form is often misidentified as <i>O. macleaya</i>
25, 26	Oliva (Viduoliva) elegans color form <i>zigzag</i> Perry, 1811 (p. 159) 33 mm, Nimoa, Calvados Islands, Papua New Guinea
27, 28	Oliva (Viduoliva) elegans color form <i>tenebrosa</i> Murrat, 1871 (p. 159) 36 mm, Milne Bay, Papua New Guinea

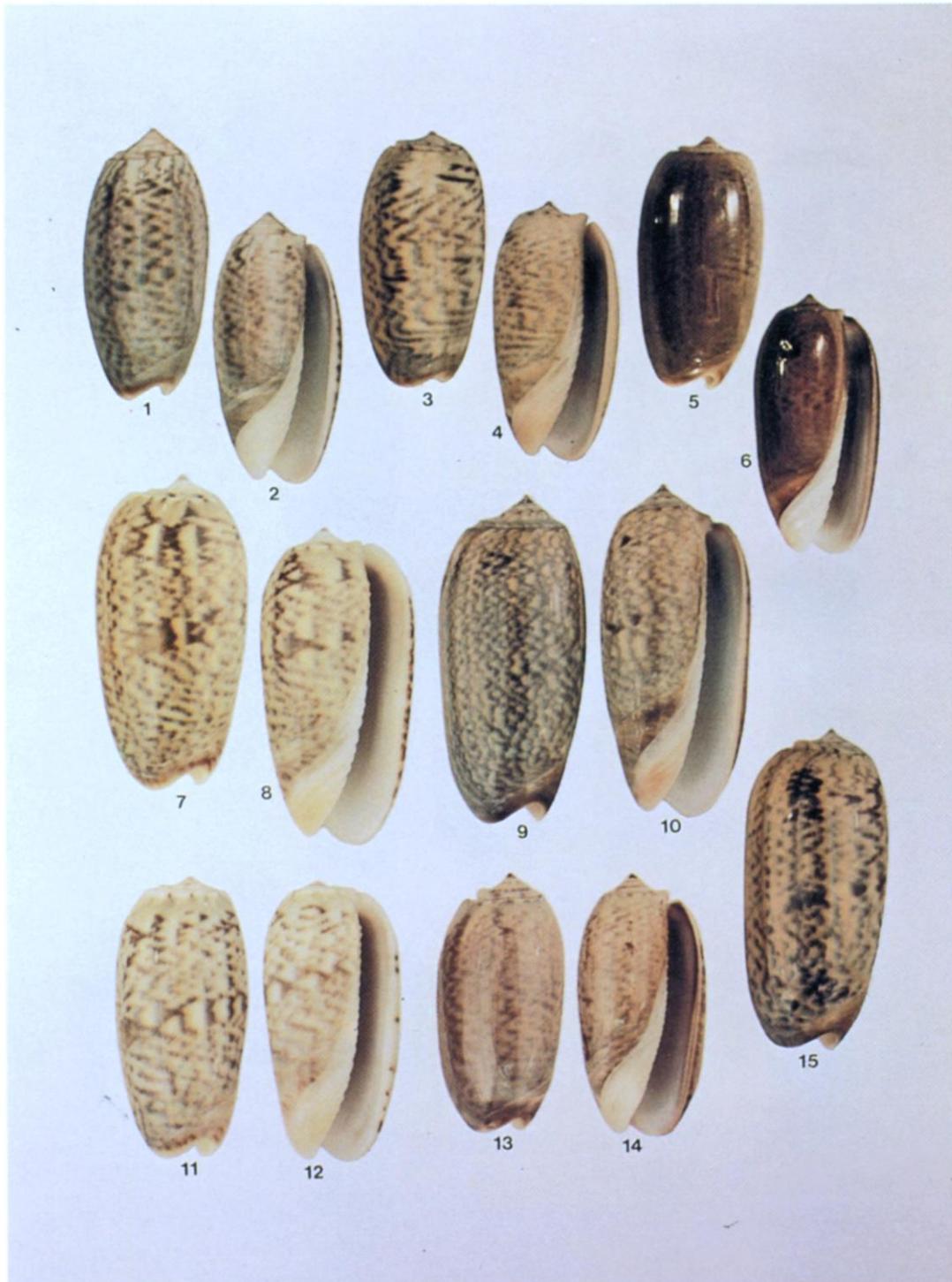


Plate 32. *Viduoliva* species.

Plate 32

Figure	Description
1, 2	Oliva (Viduoliva) hemiltona Duclos, 1835 (p. 160) 46 mm, Tean Bay, Amami Oshima Island, Ryukyu Islands
3, 4	Oliva (Viduoliva) infrenata Marrat, 1871 (p. 161) 43 mm, Mergui Archipelago, Burma, Andaman Sea
5, 6	Oliva (Viduoliva) neostina color form <i>laevis</i> Marrat, 1871 26 mm, Palawan, Philippines, brown form
7, 8	Oliva (Viduoliva) indomalaysica Petuch and Sargent, new species (p. 160) Paratype EP, 36 mm, Flores Island, Indonesia
9, 10	Oliva (Viduoliva) leucostoma Duclos, 1835 (p. 161) 54 mm, Zamboanga, Mindanao Island, Philippines, Paratype DS
11, 12	Oliva (Viduoliva) indomalaysica Petuch and Sargent, new species (p. 160) Holotype USNM 841436, 33 mm, north coast of Flores Island, Sunda Sea, Indonesia
13, 14	Oliva (Viduoliva) neostina color form <i>laevis</i> Marrat, 1871 (p. 163) 28 mm, Motorina Island, Calvados Islands, PapuaNew Guinea, spotted form
15	Oliva (Viduoliva) leucostoma Duclos, 1835 (p. 161) 54 mm, Cairns, Queensland, Australia



Plate 33. *Viduoliva* species.

Plate 33

Figure	Description
1, 2	Oliva (Viduoliva) leucostoma color form <i>flava</i> Murrat, 1871 (p. 162) 44 mm, Queensland, Australia
3, 4	Oliva (Viduoliva) leucostoma color form <i>fulva</i> Murrat, 1871 (p. 162) 43 mm, Zamboanga, Mindanao Island, Philippines
5	Oliva (Viduoliva) macleaya Duclos, 1835 (p. 162) 51 mm, Zamboanga, Mindanao Island, Philippines
6, 7	Oliva (Viduoliva) macleaya Duclos, 1835 (p. 162) 52 mm, Madras, India
8, 9	Oliva (Viduoliva) neostina Duclos, 1835 (p. 163) 36 mm, Milne Bay, Papua New Guinea
10, 11	Oliva (Viduoliva) octavia Duclos, 1844 (p. 164) 39 mm, Bohol Island, Philippines
12, 13	Oliva (Viduoliva) elegans color form <i>othonia</i> Duclos, 1835 (p. 159) 42 mm, Palawan Island, Philippines
14, 15	Oliva (Viduoliva) octavia Duclos, 1844 (p. 164) 48 mm, exceptionally large and inflated specimen from Palawan Island, Philippines
16, 17	Oliva (Viduoliva) pacifica Murrat, 1871 (p. 164) 43 mm, Phuket Island, Thailand
18	Oliva (Viduoliva) pacifica Murrat, 1871 (p. 165) 51 mm, banded specimen, Broome, Western Australia



Plate 34. *Viduoliva* species.

Plate 34

Figure	Description
1, 2	Oliva (Viduoliva) raderi Petuch and Sargent, new species (p. 165) Holotype, 44 mm, USNM 841445, Zamboanga, Mindanao Island, Philippines
3, 4	Oliva (Viduoliva) raderi Petuch and Sargent, new species (p. 165) Paratype EP, 46 mm, typical color pattern, Zamboanga, Mindanao Island, Philippines
5, 6	Oliva (Viduoliva) reticulata Röding, 1798 (p. 166) 50 mm, Zamboanga, Mindanao Island, Philippines
7, 8	Oliva (Viduoliva) reticulata color form <i>azona</i> Dautzenberg, 1927 (p. 166) 50 mm, Zamboanga, Mindanao Island, Philippines
9, 10	Oliva (Viduoliva) reticulata color form <i>evania</i> Duclos, 1835 (p. 166) 49 mm, Culion Leper Colony, Palawan Island, Philippines
11, 12	Oliva (Viduoliva) reticulata color form <i>pallida</i> Dautzenberg, 1927 (p. 166) 49 mm, Zamboanga, Mindanao Island, Philippines
13, 14	Oliva (Viduoliva) reticulata color form <i>viridescens</i> , Marrat, 1870 (p. 167) 48 mm, Vila, Vanuatu
15, 16	Oliva (Viduoliva) reticulata color form <i>zebra</i> Weinkauff, 1878 (p. 167) 41 mm, Zamboanga, Mindanao Island, Philippines
17, 18	Oliva (Viduoliva) rubrolabiata Fischer, 1902 (p. 167) 42 mm, high spired form, Vila, Vanuatu



Plate 35. *Viduoliva* species.

Plate 35

Figure	Description
1, 2	Oliva (Viduoliva) rubrolabiata Fischer, 1902 (p. 167) 44 mm, light color form, Vila, Vanuatu
3, 4	Oliva (Viduoliva) rubrolabiata Fischer, 1902 (p. 167) 43 mm, dark color form, Vila, Vanuatu
5, 6	Oliva (Viduoliva) tricolor Lamarck, 1811 (p. 168) 52 mm, Zamboanga, Mindanao Island, Philippines
7, 8	Oliva (Viduoliva) tricolor color form <i>palawanensis</i> Bartsch, 1923 (p. 168) 42 mm, Palawan Island, Philippines
9, 10	Oliva (Viduoliva) tricolor color form <i>philantha</i> Duclos, 1835 (p. 168) 51 mm, Zamboanga, Mindanao Island, Philippines
11, 12	Oliva (Viduoliva) tricolor color form <i>subviridis</i> Perry, 1811 (p. 168) 44 mm, Zamboanga, Mindanao Island, Philippines
13, 14	Oliva (Viduoliva) vidua Röding, 1798 (p. 168) 53 mm, black form, Palawan Island, Philippines
15, 16	Oliva (Viduoliva) vidua color form <i>aurata</i> Röding, 1798 (p. 169) 55 mm, Gulf of Mannar, Sri Lanka



Plate 36. *Viduoliva* species.

Plate 36

Figure	Description
1, 2	Oliva (Viduoliva) vidua Röding, 1798 (p. 168) 42 mm, ringed specimen from Zamboanga, Mindanao Island, Philippines
3, 4	Oliva (Viduoliva) vidua color form <i>albofasciata</i> Dautzenberg, 1927 (p. 169) 52 mm, Mindanao Island, Philippines
5, 6	Oliva (Viduoliva) vidua color form <i>cinnamonea</i> Menke, 1830 (p. 169) 51 mm, Mindanao Island, Philippines
7, 8	Oliva (Viduoliva) vidua color form <i>cinnamonea</i> Menke, 1830 (p. 169) 51 mm, Mindanao Island, Philippines
9, 10	Oliva (Viduoliva) vidua Röding, 1798 (p. 168) 42 mm, specimen with longitudinal stripes, Mindanao Island, Philippines
11, 12	Oliva (Viduoliva) vidua color form <i>cincta</i> Dautzenberg, 1927 (p. 169) 51 mm, Zamboanga, Mindanao Island, Philippines
13, 14	Oliva (Viduoliva) vidua color form <i>cincta</i> Dautzenberg, 1927 (p. 169) 57 mm, specimen with <i>cinnamonea</i> ground color, Zamboanga, Mindanao Island, Philippines
15	Oliva (Viduoliva) vidua Röding, 1798 (p. 168) 52 mm, typical speckled form, Zamboanga, Mindanao Island, Philippines



Plate 37. *Viduoliva* species.

Plate 37

Figure	Description
1, 2	Oliva (Viduoliva) vidua color form <i>fulminans</i> Lamarck, 1810 (p. 170) 52 mm, Bohol Island, Philippines
3, 4	Oliva (Viduoliva) vidua color form <i>fulminans</i> Lamarck, 1810 (p. 170) 46 mm, Gulf of Marmar, Sri Lanka
5, 6	Oliva (Viduoliva) vidua color form <i>fenestrata</i> (p. 170) 46 mm, Luzon Island, Philippines
7, 8	Oliva (Viduoliva) vidua color form <i>rumphi</i> Dautzenberg, 1927 (p. 170) 47 mm, Madras, India
9, 10	Oliva (Viduoliva) vidua color form <i>rumphi</i> Dautzenberg, 1927 45 mm, Mindanao Island, Philippines
11, 12	Oliva (Viduoliva) vidua color form <i>sepulchuralis</i> Lamarck, 1810 52 mm, Zamboanga, Mindanao Island, Philippines (p. 170)
13, 14	Oliva (Viduoliva) zamboangensis Petuch and Sargent, new species (p. 171) Paratype EP , 38 mm, Zamboanga, Mindanao Island, Philippines
15, 16	Oliva (Viduoliva) zamboangensis Petuch and Sargent, new species (p. 171) Holotype USNM 841449, 31 mm, south of Zamboanga, Mindanao Island, Philippines (p. 171)
17, 18	Oliva (Viduoliva) westralis Petuch and Sargent, new species (p. 170) Holotype ANM, 35 mm, Derby, Western Australia



Plate 38. *Miniaceoliva*, *Strephona*, and *Viduoliva* species.

Plate 38

Figure	Description
1, 2	<i>Oliva (Miniaceoliva) caerulea ponderi</i> Petuch and Sargent, new subspecies (p. 89) Holotype ANM, 57 mm, Port Headland, Western Australia
3, 4	<i>Oliva (Strephona) sayana texana</i> Petuch and Sargent, new subspecies (p. 147) Holotype USNM 841465, 45 mm, Padre Island, Texas
5, 6	<i>Oliva (Viduoliva) pacifica</i> color form <i>cana</i> Murrat, 1871 (p. 165) 30 mm, Bay of Bengal, off Andaman Islands
7, 8	<i>Oliva (Strephona) reticularis</i> Lamarck, 1811 (p. 144) pale color form, 31 mm, Isla Mujeres, Mexico
9, 10	<i>Oliva (Strephona) reticularis</i> Lamarck, 1811 (p. 144) dark color form, 30 mm, San Blas Islands, Panama
11, 12	<i>Oliva (Viduoliva) mindinaoensis</i> Petuch and Sargent, new species (p. 162) Holotype USNM 841466, 49 mm, Zamboanga, Mindinao Island, Philippines
13,14	<i>Oliva (Viduoliva) mindinaoensis</i> Petuch and Sargent, new species (p. 162) Paratype DS, 48 mm, dark banded color form, Zamboanga, Mindanao Island, Philippines

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Plate 39. Various *Oliva* species.

Plate 39

Figure	Description
1, 2	Oliva (Miniaceoliva) fumosa concinna Marrat, 1871 (p. 90) light color form, 52 mm, mouth of the Lungga River, Guadalcanal, Solomon Islands
3, 4	Oliva (Miniaceoliva) fumosa concinna Marrat, 1871 (p. 90) light color form, 38 mm, Vila, Vanuatu
5, 6	Oliva (Strephona) spicata Röding, 1798 (p. 148) golden color form, 48 mm, Pedro Gonzales Island, Perlas Islands, Panama
7, 8	Oliva (Galeola) carneola color form <i>coccinata</i> Dautzenberg, 1927 (p. 82) 16 mm, Nimoa Island, Calvados Islands, Papua New Guinea
9, 10	Oliva (Strephona) spicata Röding, 1798, albino specimen (the living animal was also pure white) (p. 148) 49 mm, Pedro Gonzalez Island, Perlas Islands, Panama
11,12	Oliva (Omogymna) leonardi Petuch and Sargent, new species, (p. 110) Holotype USNM 841461, 13 mm, Durban, Natal, South Africa
13, 14	Oliva (Omogymna) paxillus color form <i>thomasi</i> Grosse, 1861 (p. 111) 20 mm, Huahine Island, Society Islands, French Polynesia
