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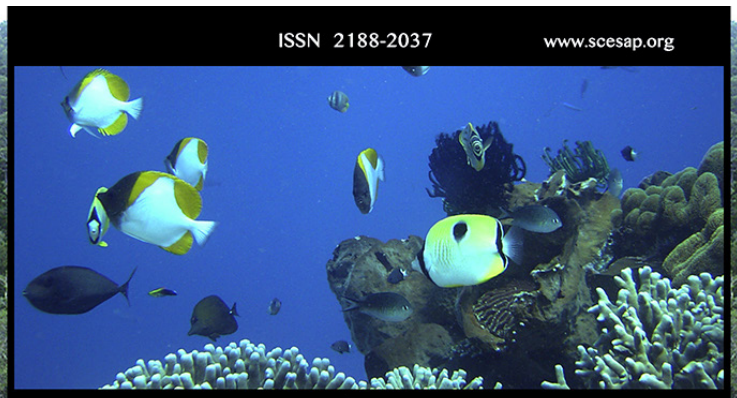

Coastal Ecosystems

Zooxanthellate scleractinian corals collected from Amakusa, western Kyushu, Japan

Keiichi Nomura, Hiroyuki Yokochi, Tadashi Kimura, Kenji Kajiwara, Satoshi Nojima and Seiji Arakaki

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Data Paper

Zooxanthellate scleractinian corals collected from Amakusa, western Kyushu, Japan

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Abstract

This study presents information on zooxanthellate scleractinian coral fauna from the shallow coastal waters of the Amakusa Shimoshima Island, western Kyushu, Japan, based on surveys conducted in 2009 and 2019. Collection and identification by members of the Japanese Society for Coral Taxonomy resulted in a total of c. 80 species representing 12 families and 40 genera. The dominant families were Merulinidae that accounted for 32.5% (26 species), followed by Acroporidae (20%, 16 species) and Lobophylliidae (12.5%, 10 species). Twelve species remained unidentified, as they do not match any previous description of coral species and are possibly endemic to Japan. Many of the identified species also presented substantial taxonomic difficulties which, together with the existence of unidentified species, point to a need for continued taxonomic research.

Keywords: zooxanthellate scleractinian corals, Amakusa, Japan

Introduction

Coastal areas around the Amakusa Shimoshima Island have been designated as the first National Marine Park in Japan, due to their spectacular seascapes and associated biota including abundant zooxanthellate scleractinian corals (Marine Parks Center, 1970). A total of 98 species of zooxanthellate scleractinian corals have so far been reported from Amakusa by Veron (1993) and Nishihira & Veron (1995). These monographs have promoted various coral studies in Japan. However, recent advances in taxonomy and molecular phylogeny of corals (e.g. Arrigoni *et al*., 2016; Benzoni *et al*., 2014; Fukami *et al*., 2008; Huang *et al*., 2016), indicate a need for thorough revision of scientific names of many taxa (Sugihara, 2012). In this context, researchers concerned with the status of coral taxonomy established the Japanese Society for Coral Taxonomy (JSCT) in 2008 in order to enhance taxonomic understanding and develop a consensus on coral identification. The JSCT has visited various locations, particularly those described by Nishihira & Veron (1995), to collect samples for morphological and genetical analyses.

Materials and Methods

This study presents a list of zooxanthellate scleractinian corals mainly collected in 2009 and 2019 from the Amakusa Shimoshima Islands, Kumamoto-Prefecture, western Kyushu, Japan. Specimens were collected around Tomioka (3 sites) and Ushibuka (7 sites) areas of the Amakusa Shimoshima Islands (Fig. 1), under the permission of the governor of Kumamoto Prefecture. Coral collection and identification were carried out by the following members of the JSCT; K. Nomura (Sabiura Marine Park Research Station), H. Yokochi (School of Marine Science and Technology, Tokai University), T. Kimura (Japan Wildlife Research Center), K. Kajiwara (Miyako-jima City Office), S. Nojima (formerly AMBL-Kyushu University), S. Arakaki (AMBL-Kyushu University), N. Dewa (Kagoshima City Aquarium), H. Fukami (University of Miyazaki), K. Ito (Okinawa Environmental Analysis Center), K. Iwao (Establishment of Tropical Marine Ecological Research), Y. Kitano (National Institute for Environmental Studies), H. Matsumoto (Tarama Junior High School), T. Mezaki (Biological Institute on Kuroshio), G. Shimada (Sea-farming

Fig. 1 Location of collecting sites in Amakusa Shimoshima Island, western Kyushu, Japan.

Tomioka Area:
1, Yatagasone (32°31'43"N 130°02'44"E);
2,Tsutsumase (32°31'26"N 130°01'05"E);
3, Maruse (32°32'03"N 130°00'57"E).
Ushibuka Area:
4, Tsurusaki (32°11'36"N 129°59'40"E);
5, Haruhae (32°10'51"N 130°01'15"E);
6, Satsuki (32°10'15"N 130°02'03"E);
7, Gakenoshita (32°09'41"N 130°02'30"E);
8, Oshima (32°11'13"N 129°58'06"E);
9, Kuwashima (32°12'00"N 129°58'25"E);
10, Katashima (32°8'50"N 129°58'20"E).

Center of Miyako-jima City), K. Shimoike (Coral Research Divers), G. Suzuki (Research Center for Subtropical Fisheries, Seikai National Fisheries Research Institute), H. Tachikawa (Coastal Branch of Natural History Museum and Institute, Chiba), and Y. Zayasu (Okinawa Institute of Science and Technology Graduate University).

Coral specimens were tagged with abbreviations indicating the following institutions or researchers; AMBL-JSCT (AMBL-Kyushu University), BIK (Biological Institute on Kuroshio), CMNH (Coastal Branch of Natural History Museum and Institute, Chiba), GS (G. Suzuki), GSH (G. Shimada), HY (H. Yokochi), IORD (Institute of Oceanic Research and Development, Tokai University), KCA (Kagoshima City Aquarium), KI (K. Ito), KIW (I. Iwao), KS (K. Shimoike), MIY-KK (K. Kajiwara), MIY-HM (H. Matsumoto), MUFS (Miyazaki University, Fisheries Science), YFK (Y. Kitano), SMBL (Seto Marine Biological Laboratory), SMP (Sabiura Marine Park Research Station). In the following text, classification of the sub order followed Okubo (2016). The families, genera and species are listed in the alphabetical order. Among the unidentified species, those recognized as existing taxa were marked with "sp." after the genus name.

Systematic account

Suborder Refertina Okubo, 2016
Family Acroporidae Verrill, 1902
Genus ***Acropora*** Oken, 1815

Acropora glauca (Brook, 1893)
(Japanese name: Nakayubi-midoriishi)
(Figs. 2A-F)

Madrepora glauca Brook, 1893: 164, pl. 34, fig. D [West Australia].

Acropora glauca: Veron & Wallace, 1984: 198, figs. 465-472; Nishihira & Veron, 1995: 97, 4 unnumbered figs.; Wallace, 1999: 166, pl. 27; Wallace *et al*., 2009: 34, figs. 3D, 16; Wallace, Done & Muir, 2012: 74, fig. 35; Sugihara *et al*., 2015: 19, 4 unnumbered figs.; Nomura, 2016a: 3, figs. A-F.

Specimens. AMBL-JSCT 70, Oshima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 91•92•93, Haruhae, depth 2 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 121•122•123, Tsutsumase, depth 5.0 m, coll. G. Suzuki, 9 Oct. 2019. AMBL-JSCT 133, Haruhae, depth 2.0 m, coll.

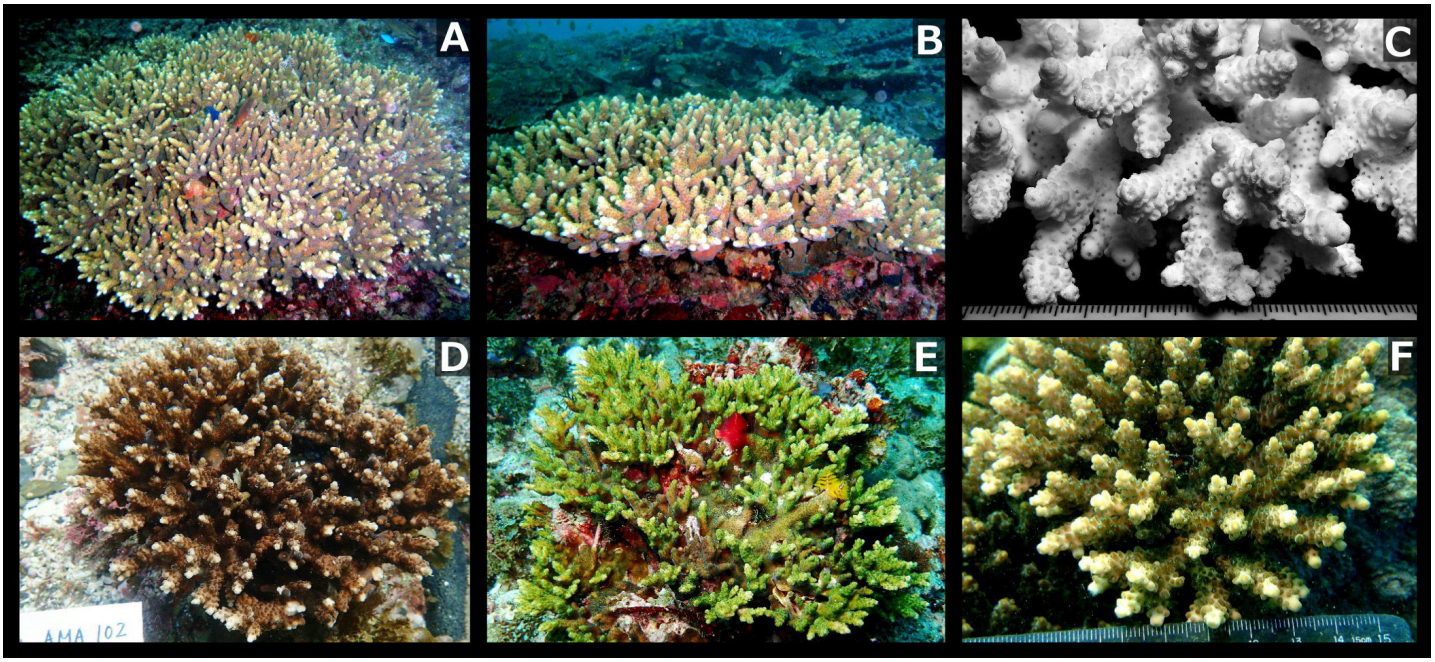

Fig. 2 A-F, *Acropora glauca* (Brook, 1893): A-C, AMBL-JSCT 70, Oshima, depth 4 m; D, AMBL-JSCT 122, Tsutsumase, depth 5.0 m; E, KS-AMK1914, Oshima, depth 8.3 m; F, KS-AMK1920, Haruhae, depth 3.2 m.

G. Suzuki, 10 Oct. 2019. BIK-C-312, Haruhae, depth 3 m, coll. T, Mezaki, 5 Oct. 2009. CMNH-ZG 05566•05567, Haruhae, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. GS-AMA2009-17•22•26, Satsuki, depth 4-7 m, coll. G. Suzuki, 6 Oct. 2009. GS-AMA2009-34•37•41•44•51•58, Haruhae, depth 2-3 m, coll. G. Suzuki, 6 Oct. 2009. IORD-HC09-1•62, depth 4-5 m, coll. H. Yokochi, 6 Oct. 2009. KIW-AMA2009-2•4•5, Satsuki, depth 6-8 m, coll. K. Iwao, 6 Oct. 2009. KIW-AMA2009-7, Haruhae, depth 2 m, coll. K. Iwao, 6 Oct. 2009. KS-AMK1905•1907, Tsutsumase, depth 4.1-4.2 m, coll. K. Shimoike, 9 Oct. 2019. KS-AMK1914•1915, Oshima, depth 8.3-8.6 m, coll. K. Shimoike, 10 Oct. 2019. KS-AMK1920•1921, Haruhae, depth 3.2-3.3 m, coll. K. Shimoike, 10 Oct. 2019. MIY-KK2009-2, Haruhae, depth 3 m, coll. K. Kajiwara, 7 Oct. 2009.

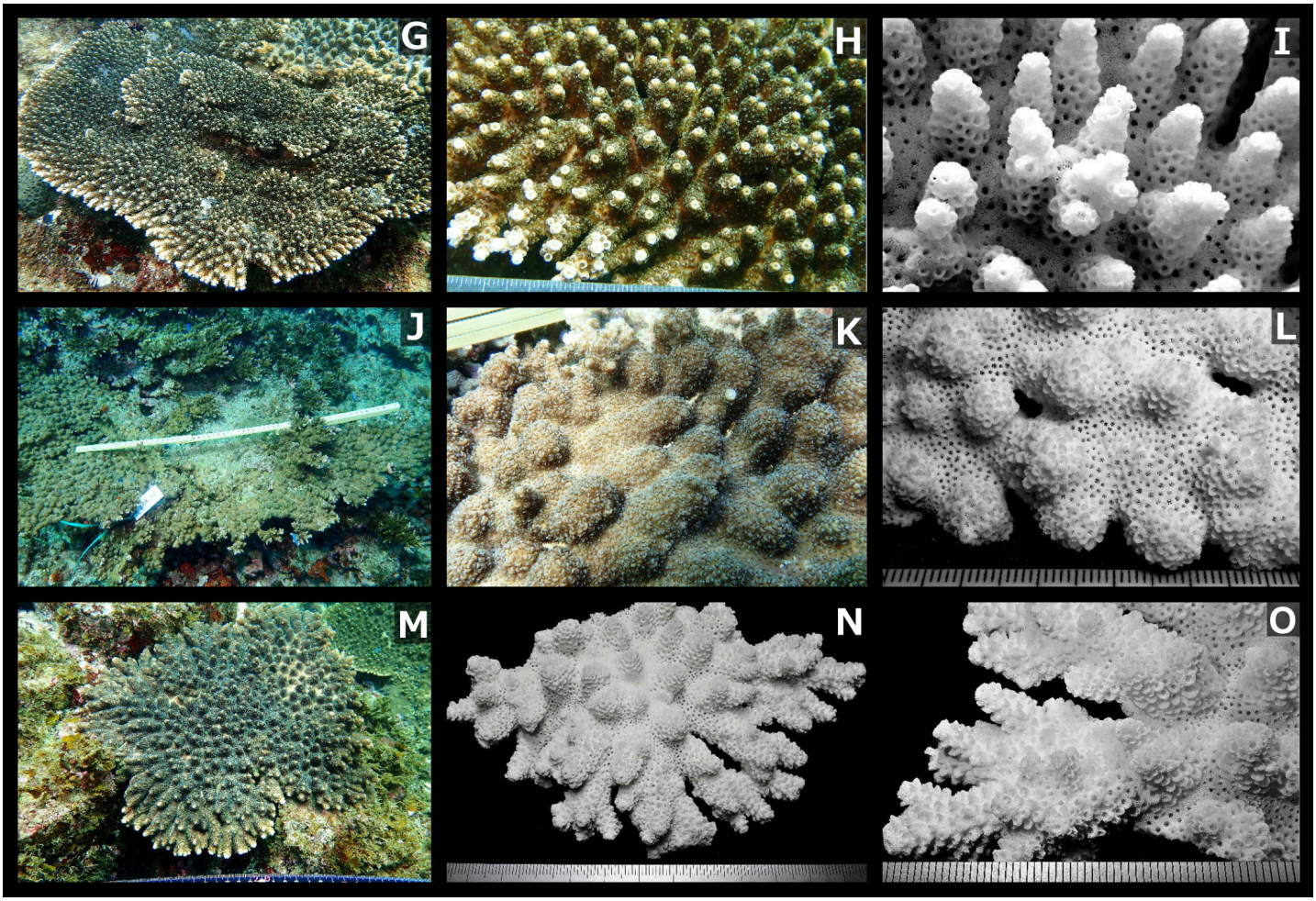

Fig. 2 continued. G-L, *Acropora hyacinthus* complex: G-I, KS-AMK1909, Tsutsumase, depth 2.4 m; J-L, AMBL-JSCT 128, Oshima, depth 7.0 m. M-O, *Acropora japonica* Veron, 2000: GSH-AMK002, Tsutsumase, depth 6.2 m. Scale marks: 1 mm.

Acropora hyacinthus complex
Japanese name: Kushihada-midoriishi
(Figs. 2G-L)

Madrepora hyacinthus Dana, 1846: 444; 1849: pl. 32, fig. 2 [Fiji].

Acropora hyacinthus: Veron & Wallace, 1984: 310, figs. 766-774; Nishihira & Veron, 1995: 128, 5 unnumbered figs.; Veron, 2000: vol. 1, 306, figs. 1-8; Wallace *et al*., 2009: 37, figs. 3C, 19; Wallace, Done & Muir, 2012: 92, fig. 44; Sugihara *et al*., 2015: 23, 4 unnumbered figs.; Nomura, 2016a: 4, figs. A-F.

Acropora tanegashimensis Veron, 1990: 109, figs. 13-14 [Tanegashima, Japan]; Nishihira & Veron, 1995: 129, 3 unnumbered figs.; Veron, 2000: vol. 1, 310, figs. 1, 2; Wallace, Done & Muir, 2012: 210, fig. 103; Sugihara *et al*., 2015: 38, 4 unnumbered figs.

Acropora spicifera: Wallace, Done & Muir, 2012: 194, fig. 95; Sugihara *et al*., 2015: 37, 4 unnumbered figs.

Acropora hyacinthus complex: Suzuki *et al*., 2016: 1424, fig. 2.

Specimens. AMBL-JSCT 124•125, Tsutsumase, depth 3.0 m, coll. G. Suzuki, 9 Oct. 2019. AMBL-JSCT 128, Oshima, depth 7.0 m, coll. G. Suzuki, 10 Oct. 2019. BIK-C-295, Katashima, depth 8 m, coll. T. Mezaki, 5 Oct. 2009. GS-AMA2009-13•16•20•21•27•28•30•32•35, Satsuki, depth 6-7 m, coll. G. Suzuki, 6 Oct. 2009. GS-AMA2009-36•40•43•48•53•54•55•56•57, Haruhae, depth 2-8 m, coll. G. Suzuki, 6-7 Oct. 2009. GSH-AMK010, Oshima, depth 4.4 m, coll. G. Shimada, 10 Oct. 2019. KIW-AMA2009-10, Haruhae, coll. K. Iwao, 6 Oct. 2009. KS-AMA09-25, Satsuki, depth 6 m, coll. K. Shimoike, 6 Oct. 2009. KS-AMK1909, Tsutsumase, depth 2.4 m, coll. K. Shimoike, 9 Oct. 2019. KS-AMK1931, Gakenoshita, depth 11 m, coll. K. Shimoike, 11 Oct. 2019. NIES_Scl2019_682•683•684•685•686•687•688•689•690•691•692•693•694, Oshima, depth 3.3-8 m, coll. Y. Kitano, 10 Oct. 2019.

Remarks. Several species closely related to *Acropora hyacinthus* sensu lato seem to exist in Japan and their taxonomic status is yet to be resolved.

Acropora japonica Veron, 2000
Japanese name: Nihon-midoriishi
(Figs. 2M-O, 3A-C)

Acropora japonica Veron, 2000: 330, figs. 1-4 [southern Honshu, Japan]; Wallace, Done & Muir, 2012: 100, fig. 48; Sugihara *et al*., 2015: 25, 4 unnumbered figs.; Nomura, 2016a: 5, figs. A-F.

Specimens. AMBL-JSCT 46, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 71, Oshima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. GS-AMA2009-11•14•15, Satsuki, depth 4-7 m, coll. G. Suzuki, 6 Oct. 2009. GS-AMA2009-23•59, Satsuki, depth 4-7 m, coll. G. Suzuki, 6 Oct. 2009. GS-AMA2009-49, Haruhae, depth 2-3 m, coll. G. Suzuki, 6 Oct. 2009. GSH-AMK002, Tsutsumase, depth 6.2 m, coll. G. Shimada, 9 Oct. 2019. KIW-AMA09-1, Satsuki, coll. K. Iwao, 6 Oct. 2009.KS-AMA09-18•35, Satsuki, depth 3-6 m, coll. K. Shimoike, 6-7 Oct. 2009. KS-AMK1906, Tsutsumase, depth 4.8 m, coll. K. Shimoike, 9 Oct. 2019. KS-AMK1932•1933, Satsuki, depth 5.6-6.8 m, coll. K. Shimoike, 11 Oct. 2019.

Acropora muricata (Linnaeus, 1758)
Japanese name: Suginoki-midoriishi
(Figs. 3D-F)

Millepora muricata Linnaeus, 1758: 792 [Banda Is., Indonesia].
Madrepora formosa Dana, 1846: 473; 1849: pl. 4, pl. 31, figs. 2a-b [Fiji].
Acropora formosa: Veron & Wallace, 1984: 230, figs. 548-560; Nishihira & Veron, 1995: 103, 3 unnumbered figs.; Veron, 2000: vol. 1, 204, figs. 1-6.
Acropora muricata: Wallace, Done & Muir, 2012: 136, fig. 64; Sugihara *et al*., 2015: 28, 4 unnumbered figs.; Nomura, 2016a: 6, figs. A-F.
Specimens. AMBL-JSCT 130, Tsurusaki, depth 2.0 m, coll. G. Suzuki, 10 Oct. 2019. AMBL-JSCT 131, Haruhae, depth 2.0 m, coll. G. Suzuki, 10 Oct. 2019. GS-AMA2009-33, Satsuki, depth 6-7 m, coll. G. Suzuki, 6 Oct. 2009. GS-AMA2009-38•42•45•52, Haruhae, depth 3-5 m, coll. G. Suzuki, 6-7 Oct. 2009. KS-AMK1925, Haruhae, depth 5.1 m, coll. K. Shimoike, 10 Oct. 2019.

Acropora nasuta (Dana, 1846)
Japanese name: Hanagasa-midoriishi
(Figs. 3G-I)

Madrepora nasuta Dana, 1846: 453; 1849: pl. 34, fig. 2 [Tahiti].
Acropora nasuta: Nishihira & Veron, 1995: 137, 4 unnumbered figs.; Wallace, 1999: 134, pl. 13, figs. A-K; Veron, 2000: vol. 1, 400, figs. 2-6; Wallace *et al*., 2009: 28, figs. 3C, 11; Wallace, Done & Muir, 2012: 140, fig. 68.
Specimen. AMBL-JSCT 127, Oshima, depth 7.0 m, coll. G. Suzuki, 10 Oct. 2019.

Acropora pruinosa complex
Japanese name: Eda-midoriishi
(Figs. 3J-O)

Madrepora pruinosa Brook, 1893: 72, pl. 34, fig. B [Korea Strait].
Acropora pruinosa: Nishihira & Veron, 1995: 107, 2 unnumbered figs.; Veron, 2000: vol. 1, 270, figs. 1, 2; Wallace, Done & Muir, 2012: 160, fig. 78; Sugihara *et al*., 2015: 33, 4 unnumbered figs.; Nomura, 2016a: 8, figs. A-F.
Acropora tumida: Nishihira & Veron, 1995: 131, 2 unnumbered figs.; Veron, 2000: vol. 1, 271 (part), figs. 4, 5; Wallace, Done & Muir, 2012: 220, fig. 108.
Specimens. AMBL-JSCT 26, Ushibuka, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 30, Gakenoshita, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 49•50, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 94, Haruhae, depth 2 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 132, Haruhae, depth 5.0 m, coll. G. Suzuki, 10 Oct. 2019. AMBL-JSCT 134, Haruhae, depth 5.0 m, coll. G. Suzuki, 10 Oct. 2019. BIK-C-302•303, Oshima, depth 5-6 m, coll. T. Mezaki, 5 Oct. 2009. BIK-C-313•315, Haruhae, depth 2-3 m, coll. T. Mezaki, 6 Oct. 2009. IORD-HC09-4, Satsuki, coll. H. Yokochi, 6 Oct. 2009. IORD-HC09-9•10•11•12•13•14•15•16•17•18•18•19•20, Haruhae, 2-4m deep, coll. H. Yokochi, 6 Oct. 2009. KIW-AMA2009-6•8, Haruhae, coll. K. Iwao, 6 Oct. 2009. KS-AMA09-26•27•30•31, Haruhae, depth 4 m, coll. K. Shimoike, 6-7 Oct. 2009. KS-AMK1913, Yatagasone, depth 9.1 m, coll. K. Shimoike, 9 Oct. 2019. KS-AMK1916, Oshima, depth 5.3 m, coll. K. Shimoike, 10 Oct. 2019. KS-AMK1918•1919, Tsurusaki, depth 5.4-9.7 m, coll. K. Shimoike, 10 Oct. 2019. KS-AMK1922•1923•1924, Haruhae, depth 4.3-5.1 m, coll. K. Shimoike, 10 Oct. 2019. MIY-KK2009-1, Haruhae, depth 5 m, coll. K. Kajiwara, 6 Oct. 2009.
Remarks. Several species closely related to *Acropora pruinosa* sensu lato may exist in Japan and their taxonomic status is yet to be resolved.

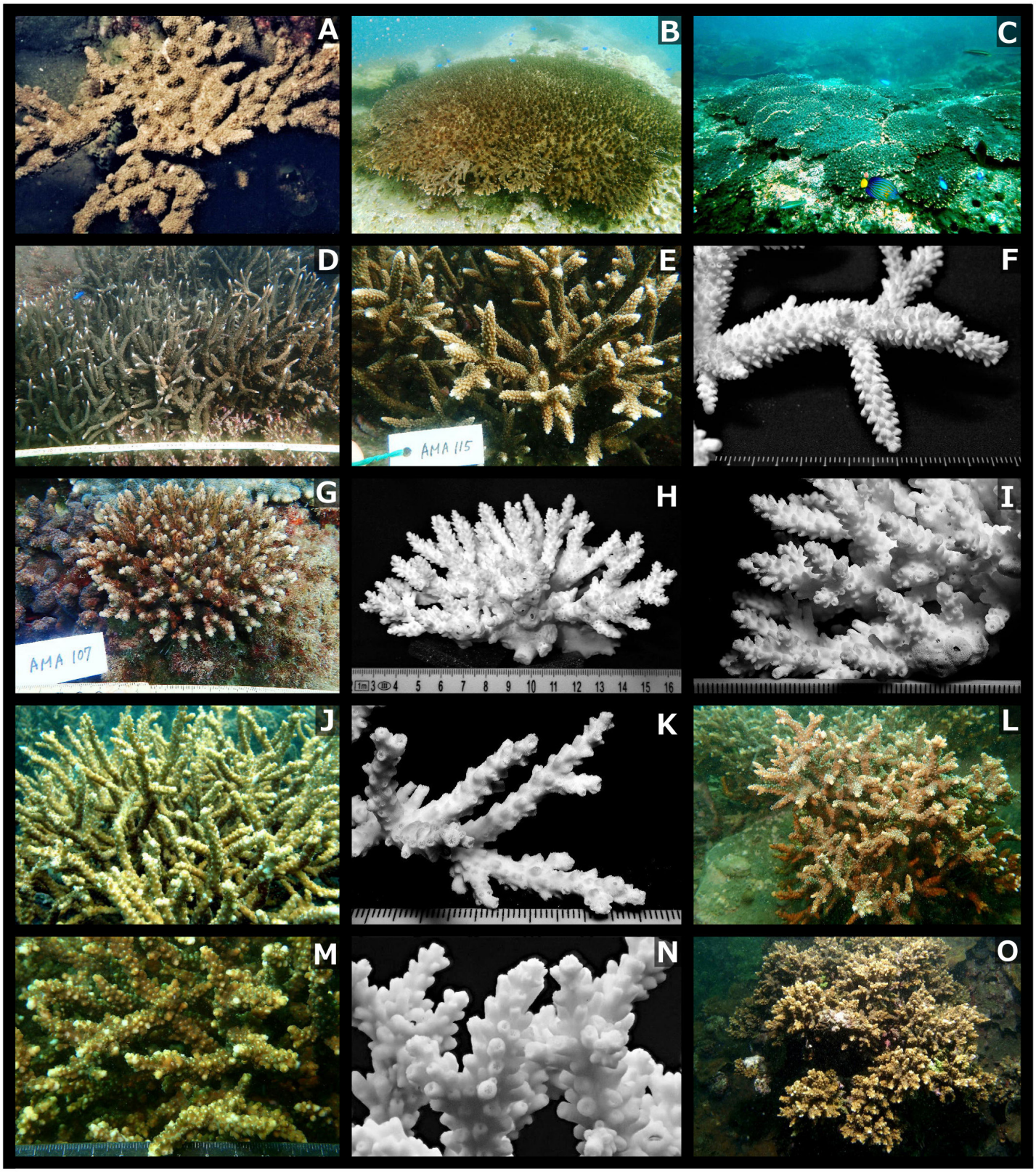

Fig. 3 A-C, *Acropora japonica* Veron, 2000: A, AMBL-JSCT 46, Katashima; B, KS-AMK1933, Satsuki, depth 5.6 m; C, no specimen, Tsutsumase, depth 3 m. D-F, *Acropora muricata* (Linnaeus, 1758): D, AMBL-JSCT 130, Tsurusaki, depth 2.0 m; E, F, AMBL-JSCT 131, Haruhae, depth 2.0 m. G-I, *Acropora nasuta* (Dana, 1846): AMBL-JSCT 127, Oshima, depth 7.0 m. J-O, *Acropora pruinosa* complex: J, K, AMBL-JSCT 94, Haruhae, depth 2 m; L, KS-AMK1923, Haruhae, depth 4.5 m; M, N, KS-AMK1924, Haruhae, depth 4.3 m; O, IORD-HC09, Haruhae, depth 2 m. Scale marks: 1 mm.

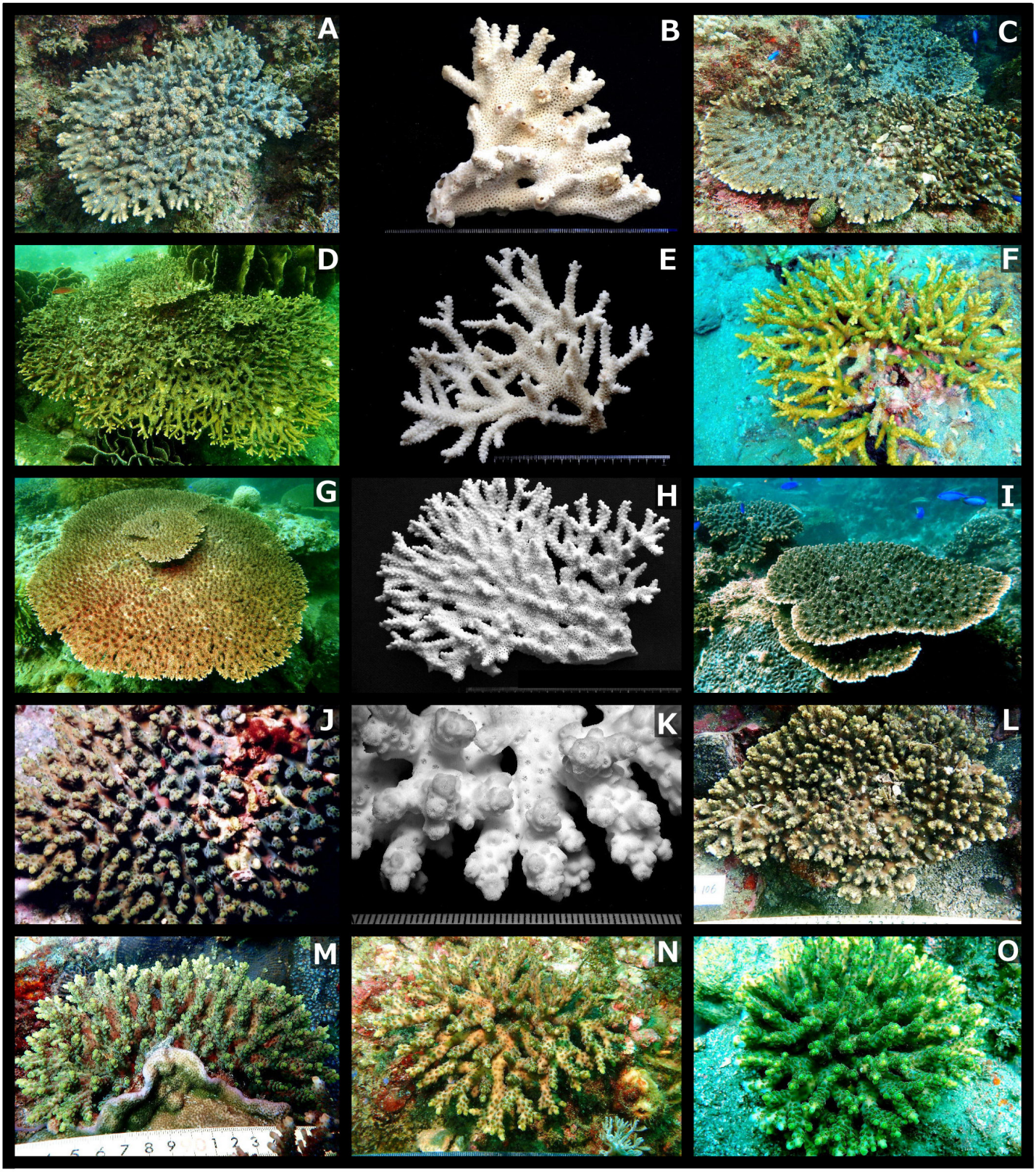

Fig. 4 A-F, *Acropora solitaryensis* Veron & Wallace, 1984: A, B, KS-AMK1901, Tsutsumase, depth 4.3 m; C, KS-AMK1904, Tsutsumase, depth 5.3 m; D, E, KS-AMK1937, Satsuki, depth 8.4 m; F, IORD-HC09-7, Satsuki, depth 6 m. G-I, *Acropora* sp. ENTAKU: G, H, AMBL-JSCT 142, Satsuki, depth 7.3 m; I, Tsutsumase, depth 5m. J-O, *Acropora* sp. aff. *willisae*: J, K, AMBL-JSCT 4, Kuwashima; L, AMBL-JSCT 126, Maruse, depth 10 m; M, AMBL-JSCT 129, Oshima, depth 7.0 m; N, KS-AMK1929, Gakenoshita, depth 13.8 m; O, KI-AMK2019-13, Tsutsumase, depth 6.0 m. Scale marks: 1 mm.

Acropora solitaryensis Veron & Wallace, 1984
Japanese name: Midoriishi
(Figs. 4A-F)

Acropora solitaryensis Veron & Wallace, 1984: 371 (part), figs. 916-920, 922-929 [Solitary I., eastern Australia]; Nishihira & Veron, 1995: 142 (part), top and middle figs.; Veron, 2000: vol.1, 234 (part), figs. 2, 3, 6, 7; Wallace et al., 2009: 31, fig. 15; Wallace, Done & Muir, 2012: 188, fig. 92; Sugihara et al., 2015: 36, 4 unnumbered figs.; Nomura, 2016a: 10, figs. A-F.

Not *Acropora solitaryensis*: Veron & Wallace, 1984: 371 (part), fig. 921; Veron, 2000: vol. 1, 234 (part), figs. 4, 5. [= *Acropora* sp. ENTAKU].

Specimens. BIK-C-297, Katashima, depth 5 m, coll. T. Mezaki, 5 Oct. 2009. GS-AMA2009-1•2•3•4•24•39, Satsuki, depth 4-7 m, coll. G. Suzuki, 6-7 Oct. 2009. IORD-HC09-5•7, Satsuki, depth 6-9 m, coll. H. Yokochi, 6-7 Oct. 2009. KIW-AMA2009-9, Haruhae, coll. K. Iwao, 6 Oct. 2009. KS-AMA09-16•24•36•37•38, Satsuki, depth 3-8m, coll. K. Shimoike, 6-7 Oct. 2009. KS-AMA09-32, Haruhae, depth 4 m, coll. K. Shimoike, 6 Oct. 2009. KS-AMK1901•1903•1904•1908, Tsutsumase, depth 4.3-5.3 m, coll. K. Shimoike, 10 Oct. 2019. KS-AMK1935•1936•1937, Satsuki, depth 7.3-8.4 m, coll. K. Shimoike, 11 Oct. 2019. MUFS C4, Haruhae, depth 6 m, coll. H. Fukami, 6 Oct. 2009.

Acropora sp. ENTAKU
Japanese name: Entaku-midoriishi
(Figs. 4G-I)

Acropora solitaryensis Veron & Wallace, 1984: 371 (part), fig. 921; Veron, 2000: vol. 1, 234 (part), figs. 4, 5.

Acropora cf. *glauca*: Sugihara *et al*., 2015: 20, 4 unnumbered figs.

Acropora sp. ENTAKU: Nomura, 2016a: 12, figs. A-F.

Specimens. AMBL-JSCT 142, Satsuki, depth 7.3 m, coll. K. Shimoike, 11 Oct. 2019. GS-AMA2009-46•50, Haruhae, depth 7-8 m, coll. G. Suzuki, 6-7 Oct. 2009. GS-AMA2009-60, Satsuki, depth 6-7 m, coll. G. Suzuki, 6 Oct. 2009. KS-AMK1902, Tsutsumase, depth 4.2 m, coll. K. Shimoike, 10 Oct. 2019.

Remarks. This species may be undescribed, being closely related to *Acropora solitaryensis* Veron & Wallace, 1984.

Acropora sp. aff. ***willisae***
(Figs. 4J-O)

Acropora willisae: Nomura, 2016a: 11, figs. A-F.

Specimens. AMBL-JSCT 4, Kuwashima, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 23, Gakenoshita, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 126, Maruse, depth 10m, coll. G. Suzuki, 10 Oct. 2019. AMBL-JSCT 129, Oshima, depth 7.0 m, coll. G. Suzuki, 10 Oct. 2019. GS-AMA2009-12, Satsuki, depth 4-7 m, coll. G. Suzuki, 6 Oct. 2009. KI-AMK2019-13, Tsutsumase, depth 6.0 m, coll. K. Ito, 9 Oct. 2019. KS-AMK1929, Gakenoshita, depth 13.8 m, coll. K. Shimoike, 11 Oct. 2019.

Remarks. This species may be undescribed, being closely related to *Acropora willisae* Veron & Wallace, 1984.

Genus ***Alveopora*** de Blainville, 1830
Alveopora japonica complex
(Japanese name: Nihon-awasango)
(Figs. 5A-F)

Alveopora japonica Eguchi, 1965: 278, fig. 377 [Sagami Bay, Japan]; Eguchi, 1968: C 19, pl. C1, figs. 1, 2, pl. C3, figs. 1, 2, pl. C7, figs. 1-11, pl. C26, figs. 4, 5, pl. C29, figs. 4, 5; Nishihira & Veron, 1995: 193, 2 unnumbered figs.; Veron, 2000: vol. 3, 392, figs. 1, 2; Sugihara *et al*., 2015: 42, 4 unnumbered figs.

Alveopora spongiosa: Sugihara *et al*., 2015: 43, 3 unnumbered figs.; Nomura, 2016a: 14, figs. A-F, 15, figs. A-F.

Specimens. AMBL-JSCT 22, Gakenoshita, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 75, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 109, Satsuki, depth 4.6 m, coll. K. Nomura, 11 Oct. 2019. AMBL-JSCT 145, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. BIK-C-310•311, Satsuki, depth 8-10 m, coll. T. Mezaki, 6 Oct. 2009. CMNH-ZG 05558, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. KCA19D0051, Maruse, depth 8.8 m, coll. N. Dewa, 9 Oct. 2019. MIY-KK2009-3, Satsuki, depth 6 m, coll. K. Kajiwara, 6 Oct. 2009. YFK-AMA2009-365•366•367•368•369, Satsuki, depth 5-7 m, coll. Y. Kitano, 6-7 Oct. 2009. YFK2049 191009-1•2050 191009-2, Tsutsumase, depth 7.8-8.1 m, coll. Y. Kitano, 9 Oct. 2019. YFK2053 191009-5, Maruse, depth 7.6 m, coll. Y. Kitano, 9 Oct. 2019. YFK2059 191010-1, Oshima, depth 6.4 m, coll. Y. Kitano, 10 Oct.

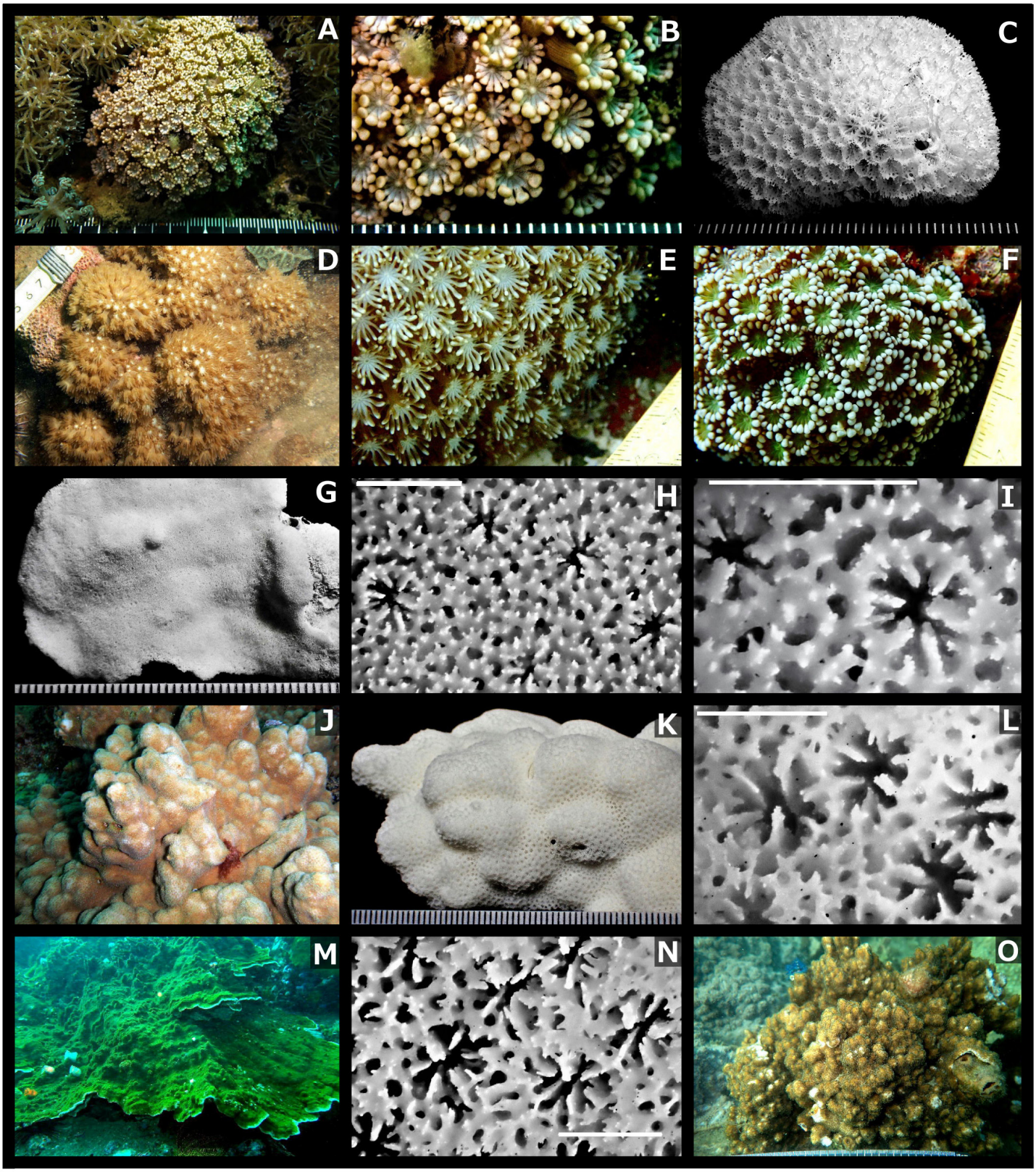

Fig. 5 A-F, *Alveopora japonica* complex: A-C, AMBL-JSCT 109, Satsuki, depth 4.6 m; D, BIK-C-0310, Satsuki, depth 8 m; E, YFK2049 191009-1, Tsutsumase, depth 7.8 m; F, YFK2053 191009-5, Maruse, depth 7.6 m. G-I, *Montipora millepora* Crossland, 1952: SMP-HC 2336, Gakenoshita, depth 8 m. J-O, *Montipora mollis* Bernard, 1897: J-L, AMBL-JSCT 63, Katashima, depth 6 m; M, N, SMP-HC 2337, Gakenoshita, depth 6 m; O, SMP-HC 3907, Haruhae, depth 2.0 m. Scale marks and bars: 1 mm.

2019. YFK2071 191011-1•2072 191011-2, Gakenoshita, depth 8.0-13.9 m, coll. Y. Kitano, 11 Oct. 2019. YFK2078 191011-8•2079 191011-9, Satsuki, depth 6.1-6.8 m, coll. Y. Kitano, 11 Oct. 2019.

Remarks. Several species closely related to *Alveopora japonica* sensu lato may exist in Japan and their taxonomic status is yet to be resolved.

Genus ***Montipora*** de Blainville, 1830

Montipora millepora Crossland, 1952

Japanese name: Mirepora-komonsango

(Figs. 5G-I)

Montipora millepora Crossland, 1952: 182, pl. 10, figs. 1, 2, pl. 22, figs. 1, 3-5 [Great Barrier Reef]; Veron & Wallace, 1984: 25, figs. 35-42; Nishihira & Veron, 1995: 52 (part), top fig.; Veron, 2000: vol. 1, 125, figs. 4, 5: Nomura & Mezaki, 2005: 37; Nomura & Suzuki, 2014b: 37 (part), fig. 33, A-D, G, H; Sugihara *et al*., 2015: 55, 3 unnumbered figs.; Nomura, 2017: 108, figs. 1•7, A-F.

Specimen. SMP-HC 2336, Gakenoshita, depth 8 m, coll. K. Sugihara, 6 Dec. 2011.

Montipora mollis Bernard, 1897

Japanese name: Morisu-komonsango

(Figs. 5J-O)

Montipora mollis Bernard, 1897: 40, pl. 3, fig. 1, pl. 31, fig. 18 [Great Barrier Reef]; Kushimoto Marine Park, 1977: 21, 3 unnumbered figs.; Veron & Wallace, 1984: 28, figs. 46-58; Nishihira & Veron, 1995: 52 (part), 3rd from top and bottom middle figs.; Veron, 2000: vol. 1, 117, figs. 5-7; Nomura & Mezaki, 2005: 37; Nomura & Suzuki, 2013a: 23, fig. 17; Nomura & Suzuki, 2013b: 28, fig. 18; Nomura & Suzuki, 2014a: 5, fig. 24; Sugihara *et al*., 2015: 56, 3 unnumbered figs; Nomura, 2016a: 22, figs. A-F; Nomura, 2017: 110, figs. 1•8, A-F.

? *Montipora mollis*: Shirai & Sano, 1985: 213, fig. 16; Uchida & Fukuda, 1989: 147, 2 unnumbered figs.not *Montipora mollis*: Nishihira & Veron, 1995: 52 (part), 1st from top fig. (= *Montipora* sp.), 2nd from top fig. (= *Montipora* sp. ABATA); Uchida & Fukuda, 1989: 192, 2 unnumbered figs. (= *Montipora* sp.).

Specimens. AMBL-JSCT 12, Ushibuka, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 63•64, Katashima, depth 6 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 79, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. BIK-C-296, Katashima, depth 8 m, coll. T. Mezaki, 5 Oct. 2009. BIK-C-299, Oshima, depth 7 m, coll. T. Mezaki, 5 Oct. 2009. SMP-HC 2323•2325•2327•2328•2329•2330, Kuwashima, depth 6-14 m, coll. K. Nomura, 6 Dec. 2011. SMP-HC 2337•2338•2339, Gakenoshita, depth 6-9 m, coll. K. Nomura, 6 Dec. 2011.

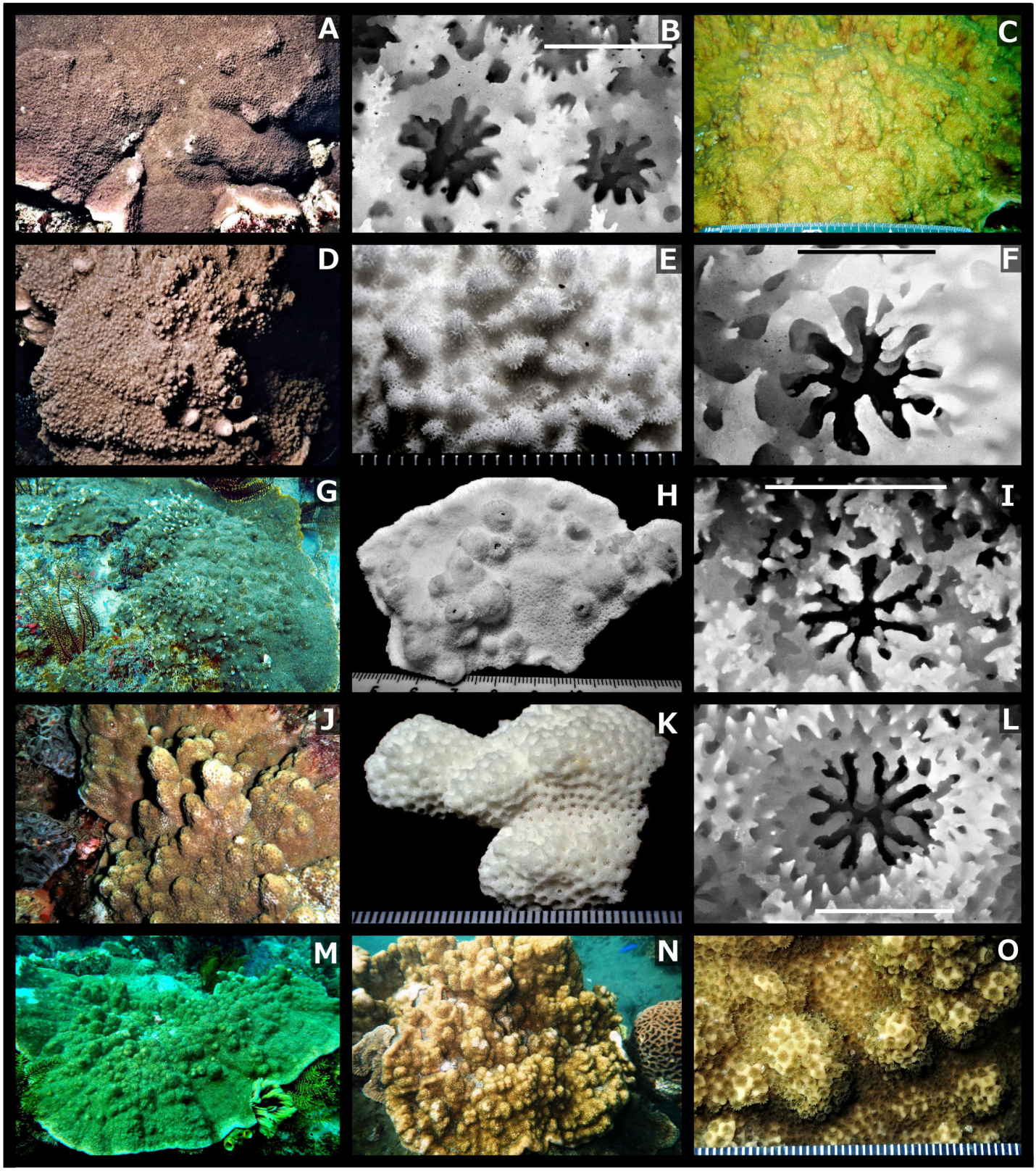

Fig. 6 A-C, *Montipora peltiformis* Bernard, 1897: A, B, AMBL-JSCT 37, Ushibuka; C, SMP-HC 3912, Gakenoshita, depth 6.0 m. D-F, *Montipora* sp. ARAME, AMBL-JSCT 25, Ushibuka. G-I, *Montipora* sp. HONDOTOGE, AMBL-JSCT 95, Kuwashima, depth 13 m. J-O, *Montipora* sp. KOMON: J-L, AMBL-JSCT 69, Oshima, depth 4 m; M, SMP-HC 2335, Gakenoshita, depth 8 m: N, O, Haruhae, depth 3 m. Scale marks and bars: 1 mm.

Montipora peltiformis Bernard, 1897
Japanese name: Murasaki-komonsango
(Figs. 6A-C)

Montipora peltiformis Bernard, 1897: 128, pl. 23, figs. 1, 2 [Amboyna, Indonesia]; Veron, 2000: vol. 1, 100 (part), fig. 3; Sugihara *et al*., 2015: 58, 4 unnumbered figs.; Nomura, 2016a: 24, figs. A-F; Nomura, 2017: 112, figs. 1•9, A-F.
Montipora informis: Nomura & Mezaki, 2005: 37.
Not *Montipora peltiformis*: Nishihira & Veron, 1995: 53, 2 figs. (= Montipora sp.).
Specimens. AMBL-JSCT 37, Ushibuka, coll. S. Nojima & K. Nomura, 2 Mar. 1994. KS-AMA2009-9, Katashima, depth 14 m, coll. K. Shimoike, 5 Oct. 2009. SMP-HC 2322, Kuwashima, depth 12 m, coll. K. Nomura, 6 Dec. 2011. SMP-HC 2334, Gakenoshita, depth 10 m, coll. K. Nomura, 6 Dec. 2011.

***Montipora* sp. ARAME**
Japanese name: Arame-komonsango
(Figs. 6D-F)

Montipora sp. ARAME: Nomura & Suzuki, 2015: 7, figs. 57, 58; Nomura, 2017: 122, figs. 1•13, A-F.
Specimen. AMBL-JSCT 25, Ushibuka, coll. S. Nojima & K. Nomura, 12 Nov. 1993.
Remarks. This species may be undescribed.

Montipora sp. HONDOTOGE
Japanese name: Hondotoge-komonsango
(Figs. 6G-I)

Montipora hispida: Nishihira & Veron, 1995: 68 (part), middle fig.; Nomura & Mezaki, 2005: 37.
Montipora efflorescens: Nomura & Mezaki, 2005: 37.
Montipora aff. *hispida*: Sugihara *et al*., 2015: 53, 4 unnumbered figs.

Montipora sp. HONDOTOGE: Nomura *et a*l., 2016: 6; Nomura, 2016a: 26, figs. A-F.
Specimens. AMBL-JSCT 95, Kuwashima, depth 13 m, coll. K. Nomura, 6 Dec. 2009. BIK-C-298, Oshima, depth 7 m, coll. T. Mezaki, 5 Oct. 2009. SMP-HC 1841, Haruhae, depth 3 m, coll. K. Nomura, 6 Oct. 2009. SMP-HC 2321, Kuwashima, depth 19 m, coll. K. Nomura, 6 Dec. 2011.
Remarks. This species may be undescribed, being closely related to *Montipora hispida* (Dana, 1846).

Montipora sp. KOMON
(Japanese name: Komonsango)
(Figs. 6J-O)

Montipora sp.: Shinohara, 1927: 1888, fig. 3596.
Montipora turgescens: Nishihira & Veron, 1995, 54 (part), top fig.
Montipora venosa: Nomura & Mezaki, 2005: 38.
Montipora aff. *venosa*: Sugihara *et al*., 2015: 62, 4 unnumbered figs.
Montipora sp. KOMON: Nomura, 2016a: 28, figs. A-F; Nomura & Suzuki, 2017: 5, fig. 81; Nomura, 2017: 134, figs. 1•19, A-F.
Specimens. AMBL-JSCT 54, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 69, Oshima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. BIK-C-294, Oshima, depth 10 m, coll. T. Mezaki, 5 Oct. 2009. KS-AMA2009-12, Oshima, depth 7 m, coll. K. Shimoike, 5 Oct. 2009. SMP-HC 2331•2335•2340, Gakenoshita, depth 8-12 m, coll. K. Nomura, 6 Dec. 2011.
Remarks. This species may be undescribed, being closely related to *Montipora venosa* (Ehrenberg, 1834).

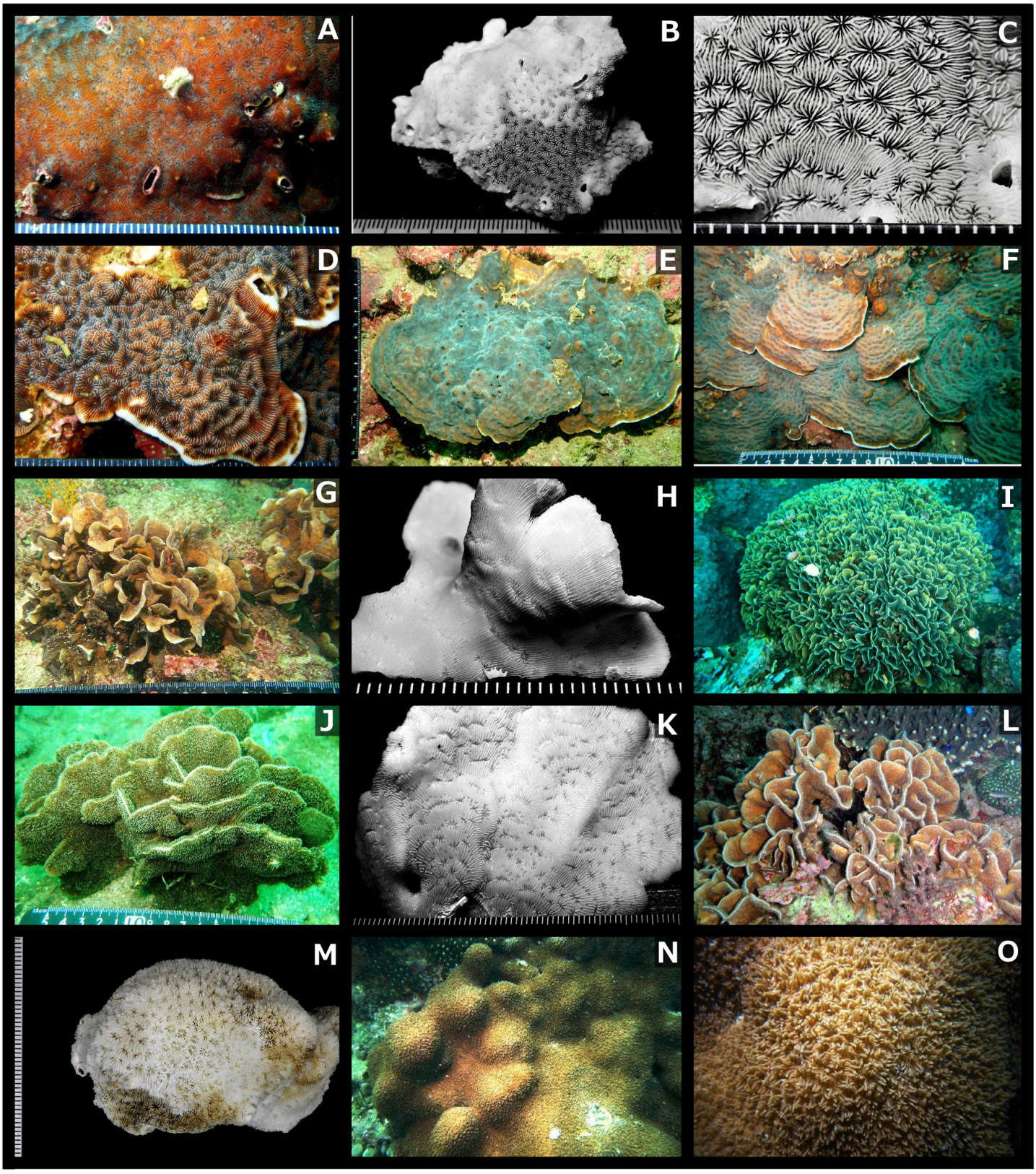

Fig. 7 A-F, *Leptoseris mycetoseroides* Wells, 1954: A-C, AMBL-JSCT 103, Gakenoshita, depth 20.0 m; D, KS-AMK1927, Gakenoshita, depth 16.0 m; E, MIY-HM2019-033, Gakenoshita, depth 22.0 m; F, no specimen, Yatagasone, depth 12 m. G-I, *Pavona cactus* (Forskål, 1775): G, H, AMBL-JSCT 141, Gakenoshita, depth 17 m; I, no specimen, Kuwashima, depth 10 m. J-L, *Pavona decussata* (Dana, 1846): J, K, AMBL-JSCT 106, Satsuki, depth 8.0 m; L, no specimen, Oshima, depth 6 m. M-O, *Pavona explanulata* (Lamarck, 1816): M, CMNH-ZG 05572, Haruhae, depth 5-7 m; N, O, no specimen, Satsuki. Scale marks: 1 mm.

Family Agariciidae Gray, 1847
Genus ***Leptoseris*** Milne Edwards & Haime, 1849
Leptoseris mycetoseroides Wells, 1954
(Japanese name: Abata-senbeisango)
(Figs. 7A-F)

Leptoseris mycetoseroides Wells, 1954: 445, pl. 153, figs. 4-6 [Marshall Islands]; Dinesen, 1980: 197, 11; Veron & Pichon, 1980: 57, figs. 99-103; Nishihira & Veron, 1995: 224, 4 unnumbered figs.; Veron, 2000: vol. 2, 213, figs. 1-5; Luck *et al*., 2013: 132, fig. 3 G, L; Nomura, 2016a: 33, figs. A-F.

Specimens. AMBL-JSCT 77, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 103, Gakenoshita, depth 20 m, coll. K. Nomura, 11 Oct. 2019. CMNH-ZG 05573, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. KCA19D0047, Tsutsumase, depth 7.6 m, coll. N. Dewa, 9 Oct. 2019. KS-AMK1927, Gakenoshita, depth 16.0 m, coll. K. Shimoike, 11 Oct. 2019. MIY-HM2019-013, Yatagasone, depth 9.3 m, coll. H. Matsumoto, 9 Oct. 2019. MIY-HM2019-032•2019-033, Gakenoshita, depth 22.0-22.4 m, coll. H. Matsumoto, 11 Oct. 2019.

Genus ***Pavona*** Lamarck, 1801
Pavona cactus (Forskål, 1775)
(Japanese name: Saotome-shikorosango)
(Figs. 7G-I)

Madrepora cactus Forskål, 1775: 134 [Red Sea].

Pavona cactus: Veron & Pichon, 1980: 8, figs. 5-15; Nishihira & Veron, 1995: 209, 3 unnumbered figs.; Veron, 2000: vol. 2, 180, figs. 1-5; Sugihara *et al*., 2015: 71, 3 unnumbered figs.; Nomura, 2016a: 35, figs. A-F.

Specimens. AMBL-JSCT 141, Gakenoshita, depth 17.3 m, coll. G. Shimada, 11 Oct. 2019. MIY-HM2019-046, Gakenoshita, depth 17.3 m, coll. H. Matsumoto, 11 Oct. 2019.

Pavona decussata (Dana, 1846)
Japanese name: Shikorosango
(Figs. 7J-L)

Pavonia decussata Dana, 1846: 329; 1849: pl. 22, fig. 4 [Fiji].

Pavona decussata: Veron & Pichon, 1980: 13, figs. 16-25; Nishihira & Veron, 1995: 210, 4 unnumbered figs.; Veron, 2000: vol. 2, 194, figs. 1-6; Nomura, 2016a: 36, figs. A-F.

Specimens. AMBL-JSCT 106, Satsuki, depth 8 m, coll. K. Nomura, 11 Oct. 2019. CMNH-ZG 05571, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. MIY-HM2019-019, Oshima, depth 7.7 m, coll. H. Matsumoto, 10 Oct. 2019. MIY-HM2019-024, Haruhae, depth 9.2 m, coll. H. Matsumoto, 10 Oct. 2019.

Pavona explanulata (Lamarck, 1816)
(Japanese name: Hira-shikorosango)
(Figs. 7M-O)

Agaricia explanulata Lamarck, 1816: 288 [not recorded].

Pavona cf. *explanulata*: Veron & Pichon, 1980: 17, figs. 26-34.

Pavona explanulata: Nishihira & Veron, 1995: 211, 4 unnumbered figs.; Veron, 2000: vol. 2, 184, figs.1-6; Nomura, 2016a: 37, figs. A-F.

Pavona sp.: Sugihara *et al*., 2015: 77, 3 unnumbered figs.

Pavona sp. KOBU: Nomura, 2016a: 39, figs. A-F.

Specimen. CMNH-ZG 05572, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009.

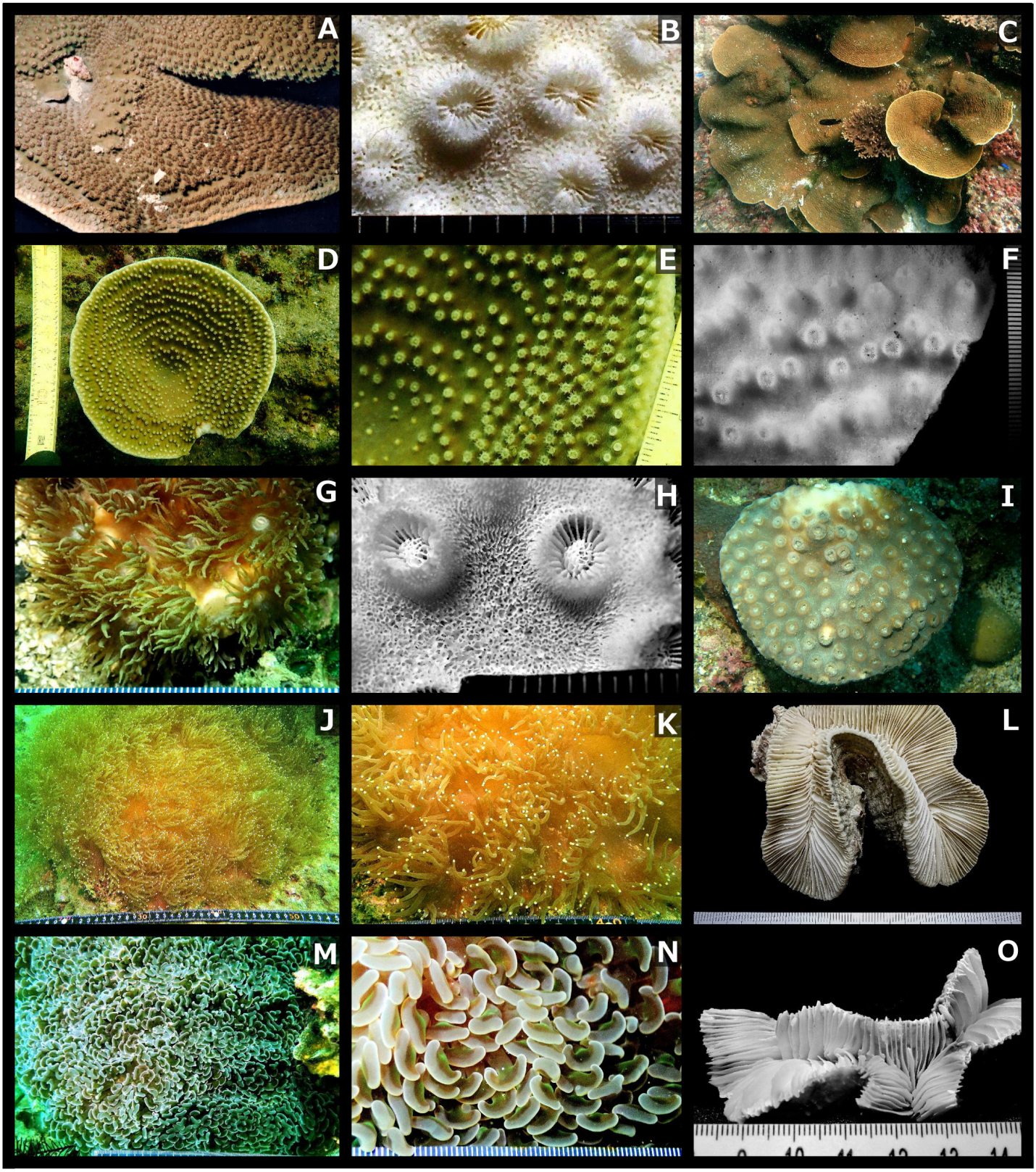

Fig. 8 A-C, *Turbinaria frondens* (Dana, 1846): A, B, AMBL-JSCT 24, Ushibuka; C, YFK2061 191010-3, Tsurusaki, depth 6.8 m. D-F, *Turbinaria mesenterina* (Lamarck, 1816), AMBL-JSCT 144, Satsuki, depth 8.6 m. G-I, *Turbinaria peltata* (Esper, 1794): G, H, AMBL-JSCT 116, Satsuki, depth 7 m; I, MIY-HM2019-007, Tsutsumase, depth 7.4 m. J-L, *Catalaphyllia jardinei* (Saville-Kent, 1893), AMBL-JSCT 140, Satsuki, depth 12 m. M-O, *Fimbriaphyllia ancora* (Veron & Pichon, 1980), AMBL-JSCT 110, Satsuki, depth 6 m. Scale marks: 1 mm.

Family Dendrophylliidae Gray, 1847
Genus ***Turbinaria*** Oken, 1815
Turbinaria frondens (Dana, 1846)
(Japanese name: Uneri-suribachisango)
(Figs. 8A-C)

Gemmipora frondens Dana, 1846: 412; 1849: pl. 27, fig. 10 [Fiji].
Turbinaria frondens: Veron & Pichon, 1980: 381, figs. 666-677; Nishihira & Veron, 1995: 399, 3 unnumbered figs.; Veron, 2000: vol. 2, 392, figs. 1-5; Wallace *et al*., 2009: 100, figs. 8A, 63; Nomura, 2016a: 53, figs. A-F.
Turbinaria mesenterina; Nomura, 2016a, 54 (part), fig. B.
Specimens. AMBL-JSCT 24, Ushibuka, coll. S. Nojima & K. Nomura, 12 Nov. 1993. YFK2060 191010-2, Oshima, depth 7.8 m, coll. Y. Kitano,10 Oct. 2019. YFK2061 191010-3, Tsurusaki, depth 6.8 m, coll. Y. Kitano, 10 Oct. 2019.

Turbinaria mesenterina (Lamarck, 1816)
(Japanese name: Suribachisango)
(Figs. 8D-F)

Explanaria mesenterina Lamarck, 1816: 294 [Indian Ocean].
Turbinaria mesenterina: Veron & Pichon, 1980: 386, figs. 678-693; Nishihira & Veron, 1995: 400, 3 unnumbered figs.; Veron, 2000: vol. 2, 394, figs. 1-6; Sugihara et al., 2015: 82, 3 unnumbered figs.; Nomura, 2016a: 54 (part), figs. A, C-F.
Not *Turbinaria mesenterina*: Nomura, 2016a: 54 (part), fig. B (= *T. frondens*).
Specimens. AMBL-JSCT 144, Haruhae, depth 9-12 m, coll. Y. Kitano, 10 Oct. 2019. YFK-AMA2009-355, Satsuki, depth 7 m, coll. H. Fukami, 6-7 Oct. 2009. YFK2080 191011-10, Satsuki, depth 8.6 m, coll. Y. Kitano, 11 Oct. 2019.

Turbinaria peltata (Esper, 1794)
(Japanese name: Oo-suribachisango)
(Figs. 8G-I)

Madrepora peltata Esper, 1794: 27, fig. 4 [China Sea].
Turbinaria peltata: Veron & Pichon, 1980: 374, figs. 657-663; Nishihira & Veron, 1995: 398, 4 unnumbered figs.; Veron, 2000: vol. 2, 390, figs. 1-6; Wallace *et al*., 2009: 102, figs. 8B, 64; Nomura, 2016a: 55, figs. A-F.
Specimens. AMBL-JSCT 116, Satsuki, depth 7 m, coll. K. Nomura, 11 Oct. 2019. MIY-HM2019-007, Tsutsumase, depth 7.4 m, coll. H. Matsumoto, 9 Oct. 2019. YFK-AMA2009-356•357•358•359•360•361•362•363•390, Satsuki, depth 5-8 m, coll. H. Fukami, 6-7 Oct. 2009. YFK-AMA2009-378•379•380, Haruhae, depth 3-6 m, coll. H. Fukami, 6 Oct. 2009.

Family Euphylliidae Alloiteau, 1952
Genus ***Catalaphyllia*** Wells, 1971
Catalaphyllia jardinei (Saville-Kent, 1893)
Japanese name: Oonagare-hanasango
(Figs. 8J-L)

Pectinia jardinei Saville-Kent, 1893: 38, pl. 4, fig. 7 [Torres Strait].
Catalaphyllia jardinei: Veron & Pichon, 1980: 360, figs. 629-637; Nishihira & Veron, 1995: 390, 2 unnumbered figs.; Veron, 2000: vol. 2, 82, figs. 1-3; Nomura, 2016a: 40, figs. A-F.
Specimen. AMBL-JSCT 140, Satsuki, depth 11.7 m, coll. G. Shimada, 11 Oct. 2019.

Genus ***Fimbriaphyllia*** Veron & Pichon, 1980
Fimbriaphyllia ancora (Veron & Pichon, 1980)
(Japanese name: Nagare-hanasango)
(Figs. 8M-O)

Euphyllia (*Fimbriaphyllia*) *ancora* Veron & Pichon, 1980: 356, figs. 626, 627 [Great Barrier Reef].
Euphyllia ancora: Nishihira & Veron, 1995: 390, 5 unnumbered figs.; Veron, 2000: vol. 2, 80, figs. 1-8; Nomura, 2016a: 41, figs. A-F.
Euphyllia fimbriata: Sugihara et al., 2015: 87, 3 unnumbered figs.
Specimens. AMBL-JSCT 110, Satsuki, depth 6 m, coll. K. Nomura, 11 Oct. 2019. CMNH-ZG 05579, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. GSH-AMK012, Satsuki, depth 6.7 m, coll. N. Dewa, 11 Oct. 2019. YFK2062 191010-4•2064 191010-6, Tsurusaki, depth 6.8-8.6 m, coll. Y. Kitano, 10 Oct. 2019. YFK2068 191010-10, Haruhae, depth <10 m, coll. Y. Kitano, 10 Oct. 2019. YFK2073 191011-3, Gakenoshita, depth 10.5 m, coll. Y. Kitano, 11 Oct. 2019.

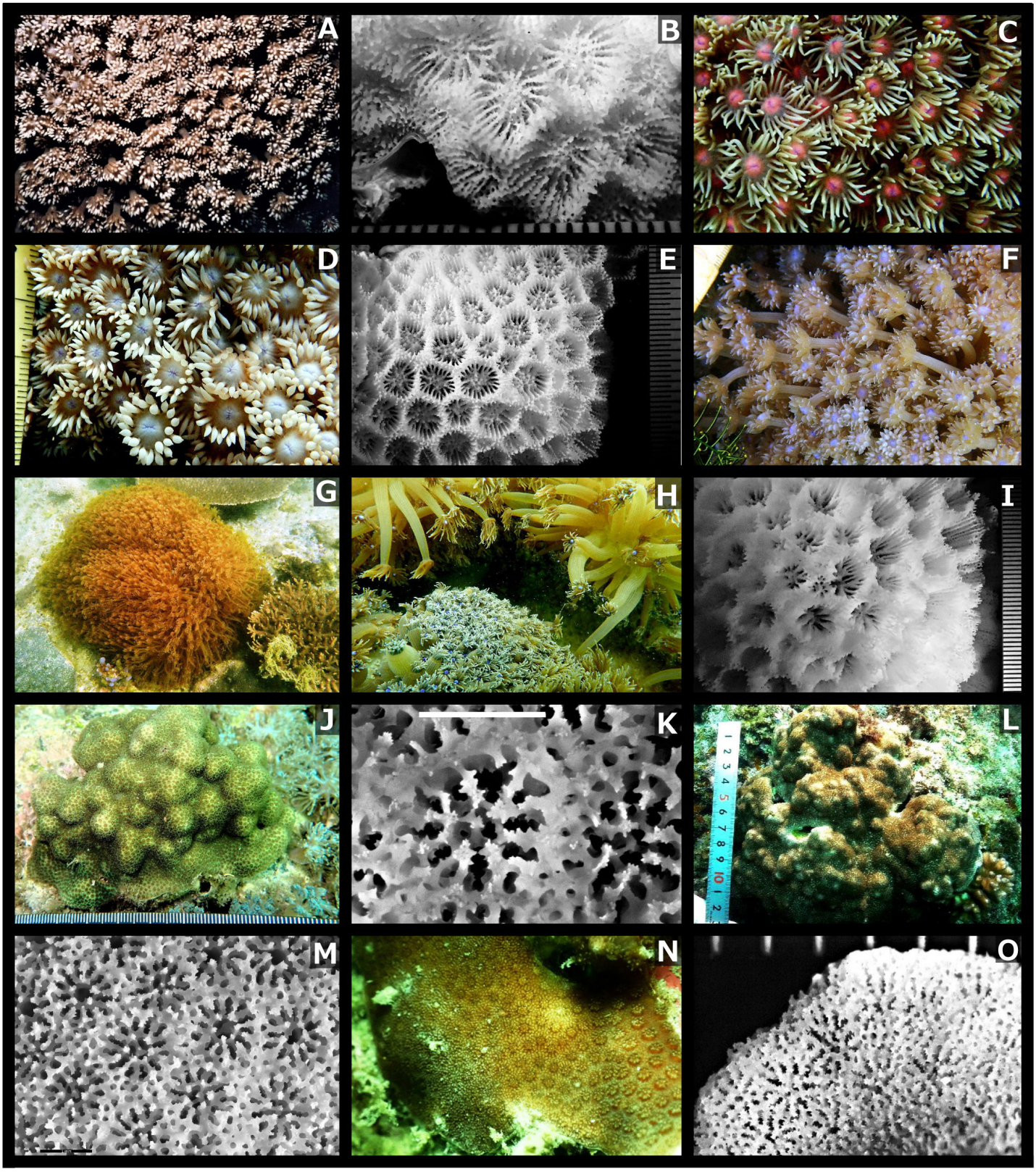

Fig. 9 A-F, *Goniopora djiboutiensis* complex: A, B, AMBL-JSCT 15, Ushibuka, depth 10 m; C, YFK2063 191010-5, Tsurusaki, depth 7.1 m; D, E, YFK2054 191009-6, Maruse, depth 7.8 m; F, YFK2077 191011-7, Gakenoshita, depth 6.9 m. G-I, *Goniopora pendulu*s Veron, 1985, YFK2081 191011-11, Satsuki, depth 7.3 m. J-M, *Porites heronensis* complex: J, K, AMBL-JSCT 114, Satsuki, depth 4.5 m; L, M, HY-HC19-035, Oshima, depth 6.0 m; N, O, Porites sp., KI-AMK2019-52, Satsuki, depth 8.0 m. Scale marks and bars: 1 mm.

Family Poritidae Gray, 1840
Genus ***Goniopora*** de Blainville, 1830
Goniopora djiboutiensis complex
(Japanese name: Kikume-hanagasasango)
(Figs. 9A-F)

Goniopora djiboutiensis Vaughan, 1907: 263, pl. 26, 27, fig. 2 [Somalia]; Veron & Pichon, 1982: 67, figs. 118-124; Nishihira & Veron, 1995: 177, 2 unnumbered figs.; Veron, 2000: vol. 3, 351, figs. 3-6; Wallace et al., 2009: 48, figs. 4C, 25; Sugihara *et al*., 2015: 165, 3 unnumbered figs.; Nomura, 2016a: 44, figs. A-F.

Goniopora cf. *djiboutiensis*: Sugihara et al., 2015: 166, 3 unnumbered figs.

Goniopora lobata: Sugihara *et al*., 2015: 167, 3 unnumbered figs.

Goniopora cf. *norfolkensis*: Sugihara et al., 2015: 168, 3 unnumbered figs.

Specimens. AMBL-JSCT 76, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 9•13, Kuwashima, depth 10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 14•15, Ushibuka, depth 3-10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 18•19, Gakenoshita, depth 10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. BIK-C-301, Oshima, depth 7 m, coll. T. Mezaki, 5 Oct. 2009. BIK-C-304, Satsuki, depth 8 m, coll. T. Mezaki, 6 Oct. 2009. BIK-C-316, Haruhae, depth 6 m, coll. T. Mezaki, 6 Oct. 2009. YFK-AMA2009-370•371•372•373•374•375•376•377•393, Satsuki, depth 3-8 m, coll. Y. Kitano, 6-7 Oct. 2009. YFK-AMA2009-381•382•383•384•374•385•386•387•388, Haruhae, depth 3-7 m, coll. Y. Kitano, 6-7 Oct. 2009. YFK2051 191009-3•2052 191009-4, Tsutsumase, depth 6.4-7.3 m, coll. Y. Kitano, 9 Oct. 2019. YFK2054 191009-6•2055 191009-7, Maruse, depth 7.8-8.2 m, coll. Y. Kitano, 9 Oct. 2019. YFK2063 191010-5•2065 191010-7•2066 191010-8, Tsurusaki, depth 6.3-7.8 m, coll. Y. Kitano, 10 Oct. 2019. YFK2069 191010-11, Haruhae, depth 13.3 m, coll. Y. Kitano, 10 Oct. 2019. YFK2074 191011-4•2075 191011-5•2076 191011-6•2077 191011-7, Gakenoshita, depth 6.9-21.2 m, coll. Y. Kitano, 11 Oct. 2019. YFK2081 191011-11, Satsuki, depth 7.3 m, coll. Y. Kitano, 11 Oct. 2019.

Remarks. Several species closely related to *Goniopora djiboutensis* sensu lato exist in Japan; the taxonomic status of each is yet to be resolved.

Goniopora pendulus Veron, 1985
(Japanese name: Yure-hanagasasanngo)
(Figs. 9G-I)

Goniopora pendulus Veron, 1985: 160, figs. 12, 13 [western Australia]; Nishihira & Veron, 1995: 180, 3 unnumbered figs.; Veron, 2000: vol. 3, 350, figs. 1, 2.

Specimen. YFK2081 191011-11, Satsuki, depth 7.3 m, coll. Y. Kitano, 11 Oct. 2019.

Porites heronensis complex
(Japanese name: Futamata-hamasango)
(Figs. 9J-M)

Porites heronensis Veron, 1985: 155, figs. 7-9 [Heron I., Great Barrier Reef]; Nishihira & Veron, 1995: 173, 4 unnumbered figs.; Veron, 2000: vol. 3, 306, figs. 1, 2; Sugihara *et al*., 2015: 172, 4 unnumbered figs.; Nomura, 2016a: 49, figs. A-F.

Specimens. AMBL-JSCT 57, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 114, Satsuki, depth 5 m, coll. K. Nomura, 11 Oct. 2019. GSH-AMK007, Maruse, depth 3.4 m, coll. G. Shimada, 9 Oct. 2019. GSH-AMK016, Satsuki, depth 10.0 m, coll. G. Shimada, 11 Oct. 2019. HY-HC19-029, Tsutsumase, depth 5.0 m, coll. H. Yokochi, 9 Oct. 2019. HY-HC19-030, Tsutsumase, depth 5.0 m, coll. H. Yokochi, 9 Oct. 2019. HY-HC19-032•19-033•19-034, Maruse, depth 5.0 m, coll. H. Yokochi, 9 Oct. 2019. HY-HC19-035•19-036•19-038•19-039, Oshima, depth 5.0-6.0 m, coll. H. Yokochi, 10 Oct. 2019. HY-HC19-041•19-042•19-043•19-044, Tsurusaki, depth 2.0-7.0 m, coll. H. Yokochi, 10 Oct. 2019. HY-HC19-045•, Haruhae, depth 2.0 m, coll. H. Yokochi, 10 Oct. 2019. KS-AMK1911, Maruse, depth 5.6 m, coll. K. Shimoike, 9 Oct. 2019. KS-AMK1917, Tsurusaki, depth 4.9 m, coll. K. Shimoike, 10 Oct. 2019. KI-AMK2019-39, Haruhae, depth 3.1 m, coll. K. Ito, 10 Oct. 2019. YFK2056 191009-8•2057 191009-9, Yatagasone, depth 7.9 m, coll. Y. Kitano, 9 Oct. 2019. YFK2083 191011-13•2085 191011-15, Satsuki, depth 6.0-6.1 m, coll. Y. Kitano, 11 Oct. 2019. YFK2084 191011-14, Satsuki, depth 8.8 m, coll. Y. Kitano, 11 Oct. 2019.

Remarks. Several species closely related to *Porites heronensis* sensu lato exist in Japan and their taxonomic status is yet to be resolved.

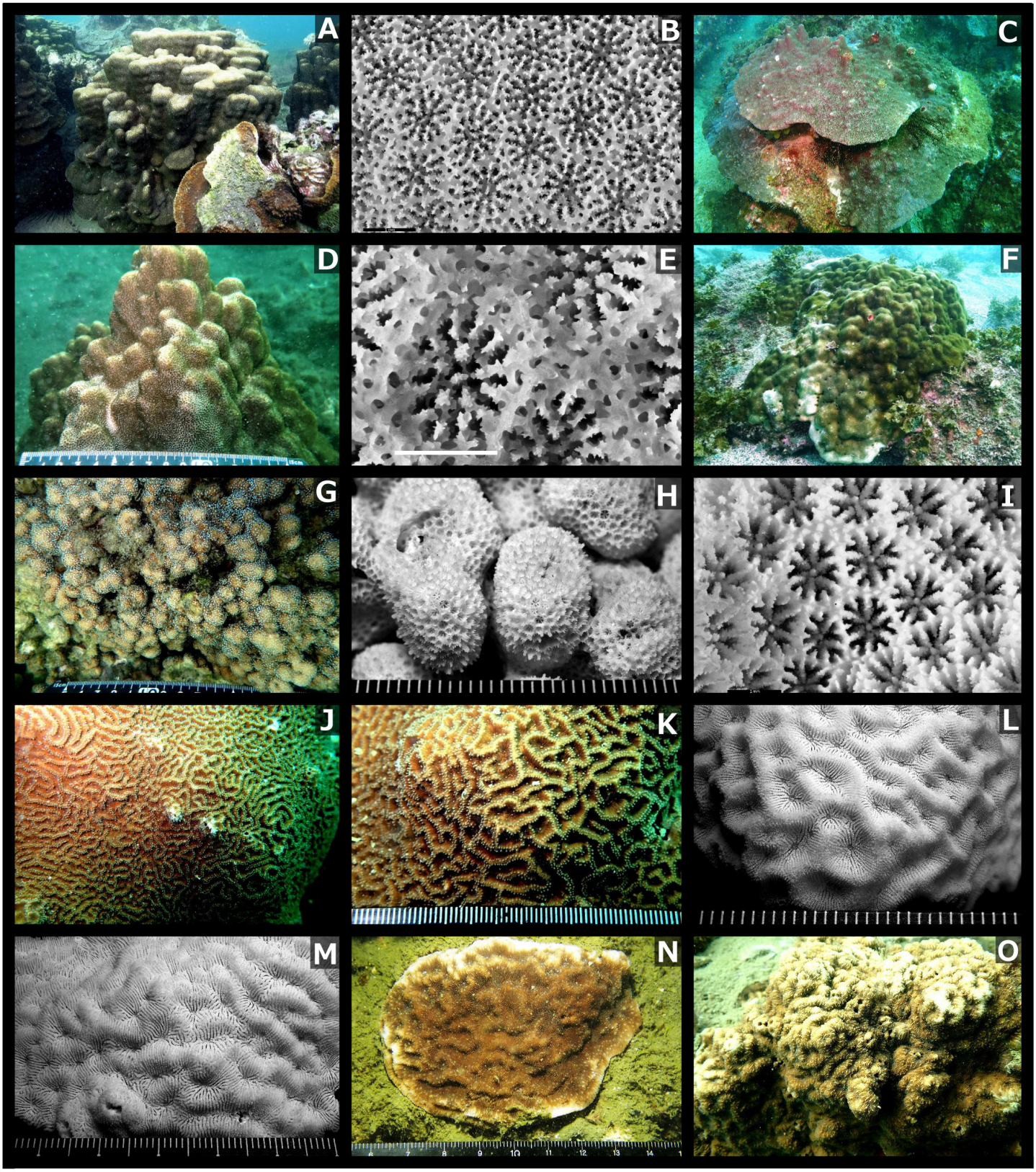

Fig. 10 A-C, *Porites lobata* Dana, 1846: A, B, HY-HC19-046, Haruhae, depth 2.0 m; C, KS-AMK1930, Gakenoshita, depth 12.0 m. D-F, *Porites lutea* Milne Edwards & Haime, 1851; D, E, AMBL-JSCT 101, Haruhae, depth 2.0 m; F, HY-HC19-028, Tsutsumase, depth 8.0 m. G-I, *Stylocoeniella guentheri* (Bassett-Smith, 1890): G, no specimen, Haruhae, depth 3 m; H, AMBL-JSCT 29, Kuwashima; I, HY-HC19-040, Oshima, depth 7.0 m. J-L, *Coscinaraea columna* (Dana, 1846), AMBL-JSCT 100, Tsurusaki, depth 8 m. M-O, *Coscinaraea monile* (Forskål, 1775): M, AMBL-JSCT 146, Katashima, depth 10 m; N, MIY-HM2019-027, Haruhae, depth 9.5 m; O, KI-AMK2019-53, Satsuki, depth 6.8 m. Scale marks: 1 mm.

Porites sp.
(Figs. 9N, O)

Specimen. KI-AMK2019-52, Satsuki, depth 8.0 m, coll. K. Ito, 11 Oct. 2019.
Remarks. Uncertain taxonomic status for this specimen.

Porites lobata Dana, 1846
(Japanese name: Fukaana-hamasango)
(Figs. 10A-C)

Porites lobata Dana, 1846: 562; 1849: pl. 55, fig. 1 [Sandwich ((Hawaian)Islands]; Vaughan, 1907: 196-198, pl. 81, figs. 1, 1a, 1b; Veron & Pichon, 1982: 16-18, figs, 9 &10; Nishihira & Veron, 1995: 162, 2 unnumbered figs.; Veron, 2000: vol. 3, 284-285, figs. 1-5; Sugihara *et al*., 2015: 173, 4 unnumbered figs.
Specimens. HY-HC19-046, Haruhae, depth 2.0 m, coll. H. Yokochi, 10 Oct. 2019. KS-AMK1926, Haruhae, depth 3.6 m, coll. K. Shimoike, 10 Oct. 2019. KS-AMK1930, Gakenoshita, depth 12.0 m, coll. K. Shimoike, 11 Oct. 2019.

Porites lutea Milne Edwards & Haime, 1851
(Japanese name: Kobu-hamasango)
(Figs. 10D-F)

Porites lutea Milne Edwards & Haime, 1851: 28 [Fiji]; Dana, 1846: 561; 1849: pl. 55, fig. 3; Vaughan, 1918: 198-199, plate 88, figs 1, 1a, 1b; Veron & Pichon, 1982: 25, figs. 27-32; Nishihira & Veron, 1995: 164, 2 unnumbered figs.; Veron, 2000: vol. 3, 287, figs. 4-6; Sugihara *et al*., 2015: 174, 4 unnumbered figs.; Nomura, 2016a: 51, figs. A-F.
Specimens. AMBL-JSCT 17, Ushibuka, coll. S. Nojima & K. Nomura, 12 Nov. 1993. BIK-C-314, Haruhae, depth 2 m, coll. T. Mezaki, 6 Oct. 2009. AMBL-JSCT 101, Haruhae, depth 2 m, coll. K. Nomura, 10 Oct. 2019. HY-HC19-028, Tsutsumase, depth 8.0 m, coll. H. Yokochi, 9 Oct. 2019. HY-HC19-037, Oshima, depth 5.0 m, coll. H. Yokochi, 10 Oct. 2019. KS-AMA2009-29, Haruhae, depth 2 m, coll. K. Shimoike, 6 Oct. 2009. KS-AMK1928, Gakenoshita, depth 14.0 m, coll. K. Shimoike, 11 Oct. 2019. YFK2082 191011-12, Satsuki, depth 7.9 m, coll. Y. Kitano, 11 Oct. 2019.

Sub order Vacatina Okubo, 2016
Family Astrocoeniidae Koby, 1890
Genus ***Stylocoeniella*** Yabe & Sugiyama, 1935
Stylocoeniella guentheri (Bassett-Smith, 1890)
Japanese name: Mukashisango
(Figs. 10G-I)

Stylophora guentheri Bassett-Smith, 1890: 362 [Macclesfield Bank, South China Sea].
Stylocoeniella guentheri: Veron & Pichon, 1976: 38, figs. 45-49; Veron, 2000: vol. 2, 6, figs. 1-8; Nishihira & Veron, 1995: 32, 2 unnumbered figs.; Nomura, 2016b: 1, figs. A-F.
Specimens. AMBL-JSCT 29, Kuwashima, coll. S. Nojima & K. Nomura, 12 Nov. 1993. CMNH-ZG 05577, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. HY-HC19-040, Oshima, depth 7.0 m, coll. H. Yokochi, 10 Oct. 2019. KS-AMA09-10, Katashima, depth 14 m, coll. K. Shimoike, 5 Oct. 2009. KS-AMA09-28, Haruhae, depth 4 m, coll. K. Shimoike, 6 Oct. 2009.

Family Coscinaraeidae Benzoni, Arrigoni, Stefani & Stolarski, 2012
Genus ***Coscinaraea*** Milne Edwards & Haime, 1848
Coscinaraea columna (Dana, 1846)
Japanese name: Yasurisango
(Figs. 10J-L)

Psammocora columna Dana, 1846: 347; 1849: pl. 25, fig. 1 [Fiji].
Coscinaraea columna: Veron & Pichon, 1980: 92, figs. 151-156; Nishihira & Veron, 1995: 205 (part), upper 3 and bottom left figs.; Veron, 2000: vol. 2, 160, figs. 1-6; Sugihara *et al*., 2015: 79, 3 unnumbered figs.; Nomura, 2016b: 5, figs. A-F.
Specimen. AMBL-JSCT 100, Tsurusaki, depth 8 m, coll. K. Nomura, 10 Oct. 2019.

Coscinaraea monile (Forskål, 1775)
(Japanese name: Noma-yasurisango)
(Figs. 10M-O)

Madrepora monile Forskål, 1775: 133 [not recorded].
Coscinaraea monile: Nishihira & Veron, 1995: 32, 2 unnumbered figs.; Veron, 2000: vol. 2, 158, figs. 1-3;

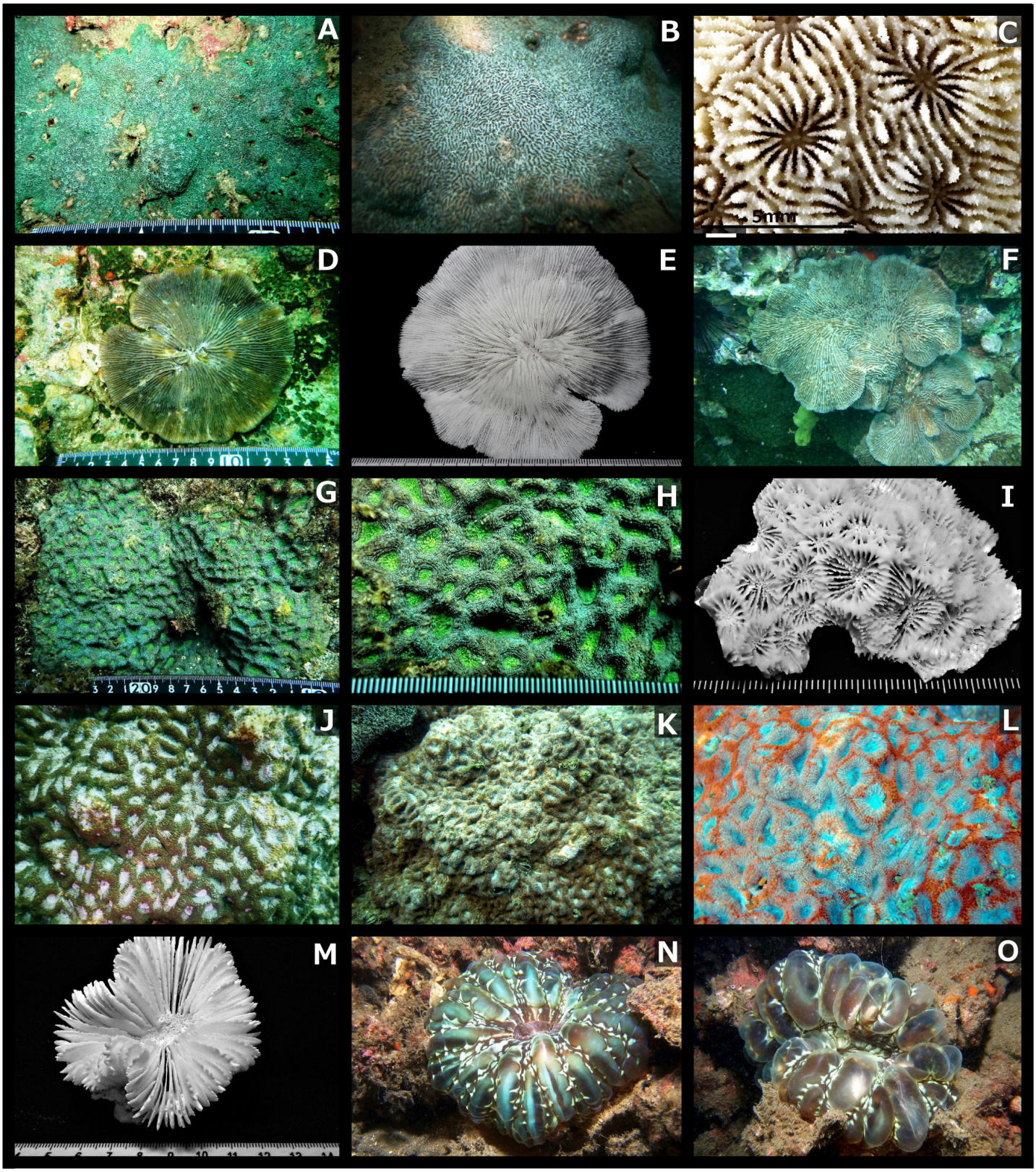

Fig. 11 A-C, *Cycloseris explanulata* (van der Horst, 1922): A, AMBL-JSCT 104, Gakenoshita, depth 20 m; B, CMNH-ZG 05569, Haruhae, depth 5-7 m; C, MIY-HM2019-011, Maruse, depth 9.3 m. D-F, *Lithophyllon undulatum* Rehberg, 1892: D, E, AMBL-JSCT 115, Satsuki, depth 7 m; F, no specimen, Satsuki. G-L, *Acanthastrea hemprichii* (Ehrenberg, 1834): G-I, AMBL-JSCT 96, Tsutsumase, depth 5.0 m; J, KCA19D0061, Satsuki, depth 7.2 m; K, CMNH-ZG 05562, Satsuki, depth 5-10 m; L, no specimen, Satsuki, depth 5 m. M-O, *Cynarina lacrymalis* (Milne Edwards & Haime, 1849): M, AMBL-JSCT 136, Gakenoshita, depth 13 m; N, CMNH-ZG 05561, Satsuki, depth 7 m; O, IORD-HC09-23, Haruhae, depth 2 m. Scale marks: 1 mm.

Sugihara *et al*., 2015: 206, 1 unnumbered fig.; Nomura, 2016b: 6, figs. A-F.

Coscinaraea columna: Nishihira & Veron, 1995: 205 (part), bottom right fig.

Specimens. AMBL-JSCT 146, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. CMNH-ZG 05559, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. CMNH-ZG 05568, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. KI-AMK2019-53, Satsuki, depth 6.8 m, coll. K. Ito, 11 Oct. 2019. MIY-HM2019-022, Tsurusaki, depth 7.8 m, coll. H. Matsumoto, 10 Oct. 2019. MIY-HM2019-023•2019-027, Haruhae, depth 8.8-9.5 m, coll. H. Matsumoto, 10 Oct. 2019. MIY-HM2019-038, Satsuki depth 8.3 m, coll. H. Matsumoto, 11 Oct. 2019.

Family Fungiidae Dana, 1846

Genus ***Cycloseris*** Milne Edwards & Haime, 1849

Cycloseris explanulata (van der Horst, 1922)

(Japanese name: Amime-manjuuishi)

(Figs. 11A-C)

Psammocora explanulata van der Horst, 1922: 426 (part), pl. 32, figs. 7, 8 [Providence, Seychelles]; Wells, 1954: 410, pl. 157, figs. 9, 10; Veron & Pichon, 1976: 28, figs. 27-32; Veron, 2000: vol. 2, 156, figs. 1, 2.

Cycloseris explanulata: Benzoni *et al*., 2012a: 140, figs. 1A-D, 6A-H; Sugihara *et al*., 2015: 91, 4 unnumbered figs.; Nomura, 2016b: 10, figs. A-F.

Specimens. AMBL-JSCT 104, Gakenoshita, depth 20 m, coll. K. Nomura, 11 Oct. 2019. CMNH-ZG 05569, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. MIY-HM2019-011, Maruse, depth 9.3 m, coll. H. Matsumoto, 9 Oct. 2019.

Genus ***Lithophyllon*** Rehberg, 1892

Lithophyllon undulatum Rehberg, 1892

(Japanese name: Kawarasango)

(Figs. 11D-F)

Lithophyllon undulatum Rehberg, 1892: [not recorded].

Lithophyllon undulatum: Nishihira & Veron, 1995: 261, 5 unnumbered figs.; Veron, 2000, vol. 2, 308, figs. 1-5; Nomura, 2016b: 13, figs. A-F.

Lithophyllon lobata: Nishihira & Veron, 1995: 262, 4 figs.; Veron, 2000: vol. 2, 307, figs. 1-6.

Specimens. AMBL-JSCT 115, Satsuki, depth 7 m, coll. K. Nomura, 11 Oct. 2019. CMNH-ZG 05574, Haruhae, depth 10 m, coll. H. Tachikawa, 6 Oct. 2009.

Family Lobophylliidae Dai & Horng, 2009

Genus ***Acanthastrea*** Milne Edwards & Haime, 1848

Acanthastrea hemprichii (Ehrenberg, 1834)

(Japanese name: Hirata-ootogekikumeishi)

(Figs. 11G-L)

Astrea hemprichii Ehrenberg, 1834: 96 [not recorded].

Acanthastrea hemprichii: Nishihira & Veron, 1995: 295, 4 unnumbered figs.; Veron, 2000: vol. 3, 22, figs. 1-5; Wallace *et al*., 2009: 88, figs. 7B, 55; Sugihara *et al*., 2015: 99, 3 unnumbered figs.; Nomura, 2016b: 52, figs. A-F.

Acanthastrea echinata: Nishihira & Veron, 1995: 291 (part), 2nd from top figs.

Specimens. AMBL-JSCT 21, Ushibuka, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 96, Tsutsumase, depth 5 m, coll. K. Nomura, 9 Oct. 2019. CMNH-ZG 05562•05563, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. GSH-AMK001, Tsutsumase, depth 7.9 m, coll. G. Shimada, 9 Oct. 2019. KCA19D0048, Tsutsumase, depth 7.8 m, coll. N. Dewa, 9 Oct. 2019. KCA19D0061, Satsuki, depth 7.2 m, coll. N. Dewa, 11 Oct. 2019. KI-AMK2019-27, Tsurusaki, depth 5.2 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-37, Haruhae, depth 2.0 m, coll. K. Ito, 10 Oct. 2019. MIY-KK2009-5, Satsuki, depth 6 m, coll. K. Kajiwara, 6 Oct. 2009. MIY-KK2009-6, Haruhae, depth 5 m, coll. K. Kajiwara, 7 Oct. 2009. SMBL Cni11034•11039•11047•11050•11052•11053•11054•11056•11061•11065•11066•11067, Satsuki, depth 3-7 m, coll. Y Zayasu, 6-7 Oct. 2009. SMBL Cni-11043•11062, Haruhae, depth 2 m, coll. H. Fukami & Y Zayasu, 6-7 Oct. 2009.11034•11039•11047•11050•11052•11053•11054•11056•11061•11065•11066•11067, Satsuki, depth 3-7 m, coll. Y Zayasu, 6-7 Oct. 2009. SMBL Cni-11043•11062, Haruhae, depth 2 m, coll. H. Fukami & Y Zayasu, 6-7 Oct. 2009.

Genus ***Cynarina*** Brüggemann, 1877

Cynarina lacrymalis (Milne Edwards & Haime, 1849)

Japanese name: Ko-hanagatasango

(Figs. 11M-O)

Caryophyllia lacrymalis Milne Edwards & Haime, 1849a: 238, pl. 8, figs. 4, 4a [Philippines].

Cynarina lacrymalis: Veron & Pichon, 1980: 238, figs. 396-404; Nishihira & Veron, 1995: 288, 4 unnumbered figs.: Veron, 2000: vol. 3, 82, figs. 1-6; Nomura, 2016b: 53, figs. A-F.

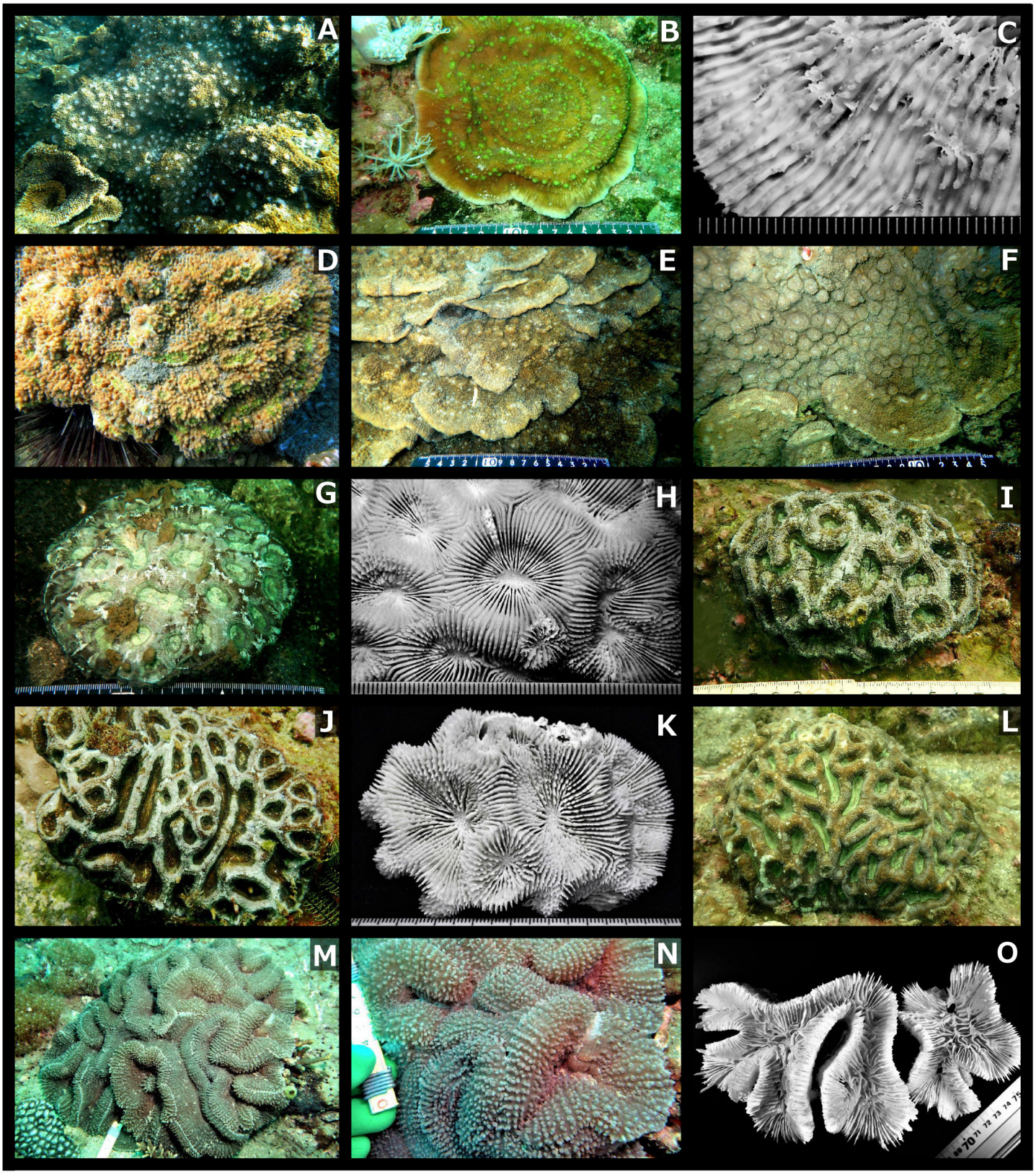

Fig. 12 A-F, *Echinophyllia aspera* (Ellis & Solander, 1786): A, AMBL-JSCT 102, Haruhae, depth 2.0 m; B, C, AMBL-JSCT 108, Satsuki, depth 8.0 m; D, AMBL-JSCT 90, Haruhae, depth 2 m; E, no specimen, Haruhae, depth 3 m; F, no specimen, Haruhae, depth 3 m. G-L, *Homophyllia bowerbanki* (Milne Edwards & Haime, 1857): G, H, AMBL-JSCT 111, Satsuki, depth 6.2 m; I, MIY-HM2019-029, Haruhae, depth 5.9 m; J, K, AMBL-JSCT 137, Gakenoshita, depth 7.6 m; L, KI-AMK2019-51, Satsuki, depth 7.0 m. M-O, *Lobophyllia hemprichii* (Ehrenberg, 1834), BIK-C-308, Satsuki, depth 10 m. Scale marks: 1 mm.

Specimens. AMBL-JSCT 136, Gakenoshita, depth 13 m, coll. Y. Kitano, 11 Oct. 2019. BIK-C-306, Satsuki, depth 9 m, coll. T. Mezaki, 6 Oct. 2009. CMNH-ZG 05561, Satsuki, depth 7 m, coll. H. Tachikawa, 6 Oct. 2009. IORD-HC09-23, Haruhae, depth 2 m, coll. H. Yokochi, 7 Oct. 2009. KCA19D0058, Gakenoshita, depth 10.2 m, coll. N. Dewa, 11 Oct. 2019. KI-AMK2019-50, Satsuki, depth 7.9 m, coll. K. Ito, 11 Oct. 2019. MIY-HM2019-021, Tsurusaki, depth 6.0 m, coll. H. Matsumoto, 10 Oct. 2019.

Genus ***Echinophyllia*** Klunzinger, 1879
Echinophyllia aspera (Ellis & Solander, 1786)
Japanese name: Kikkasango
(Figs. 12A-F)

Madrepora aspera Ellis & Solander, 1786: 156, pl. 39 [eastern Indian Ocean].
Echinophyllia aspera: Veron & Pichon, 1980: 298, figs. 515-520; Nishihira & Veron, 1995: 270, 5 unnumbered figs.: Veron, 2000: vol. 2, 324, figs. 1-8; Nomura, 2016b: 54, figs. A-F, 55, figs. A-F.
Specimens. AMBL-JSCT 60, Katashima, depth 6 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 88•90, Haruhae, depth 2 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 102, Haruhae, depth 2 m, coll. K. Nomura, 10 Oct. 2019. AMBL-JSCT 108, Satsuki, depth 8 m, coll. K. Nomura, 11 Oct. 2019. KCA19D0055, Haruhae, depth 9.6 m, coll. N. Dewa, 10 Oct. 2019. KI-AMK2019-30, Haruhae, depth 1.7 m, coll. K. Ito, 10 Oct. 2019.

Genus ***Homophyllia*** Brüggemann, 1877
Homophyllia bowerbanki (Milne Edwards & Haime, 1857)
Japanese name: Ootoge-kikumeishi
(Figs. 12G-L)

Acanthastrea bowerbanki Milne Edwards & Haime, 1857, 503, pl. D6, fig. 1 [Australia]: 503; Nishihira & Veron, 1995: 294, 1 unnumbered fig.; Veron, 2000: vol. 3, 26, figs. 1-3.
Acanthastrea hillae Wells, 1955: 15, pl. 2, figs. 2, 3 [Moreton Bay, eastern Australia (subfossil)]; Veron & Pichon, 1980: 260, figs. 449-454; Nishihira & Veron, 1995: 293, 5 unnumbered figs.; Veron, 2000: vol. 3, 26, figs. 1-3; Wallace *et al*., 2009: 90, figs. 7E, 57; Sugihara *et al*., 2015: 100, 3 unnumbered figs.

Acanthastrea cf. *bowerbanki*: Veron & Pichon, 1980: 17, figs. 26-34.
Homophyllia bowerbanki: Arrigoni *et al*., 2016: 421, figs. 1G-H, 2G-H, 14L-M, Q-R); Nomura, 2016b: 56, figs. A-F.
Specimens. AMBL-JSCT 32, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 111, Satsuki, 6m deep, coll. K. Nomura, 11 Oct. 2019. AMBL-JSCT 137, Gakenoshita, depth 8 m, coll. Y. Kitano, 11 Oct. 2019. CMNH-ZG 05563, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. IORD-HC09-22, Haruhae, depth 2 m, coll. H. Yokochi, 7 Oct. 2009. KCA19D0056, Gakenoshita, depth 13.6 m, coll. N. Dewa, 11 Oct. 2019. KCA19D0059, Satsuki, depth 6.7 m, coll. N. Dewa, 11 Oct. 2019. KI-AMK2019-51, Satsuki, depth 7.0 m, coll. K. Ito, 11 Oct. 2019. MIY-HM2019-029, Haruhae, depth 5.9 m, coll. H. Matsumoto, 10 Oct. 2019. SMBL Cni-11035•11036•11037•11038•11040•11041•11042•11064, Satsuki, depth 2-7 m, coll. Y. Zayasu, 6-7 Oct. 2009.

Genus ***Lobophyllia*** de Blainville, 1830
Lobophyllia hemprichii (Ehrenberg, 1834)
(Japanese name: Oo-hanagatasango)
(Figs. 12M-O)

Manicina hemprichii Ehrenberg, 1834: 325 [Red Sea].
Lobophyllia hemprichii: Veron & Pichon, 1980: 266, figs. 457-471; Nishihira & Veron, 1995: 299, 4 unnumbered figs.; Veron, 2000: vol. 3, 44, figs. 1-8; Sugihara *et al*., 2015: 107, 3 unnumbered figs.; Nomura, 2016b: 59, figs. A-F.
Lobophyllia robusta: Nishihira & Veron, 1995: 32, 2 figs.; Veron, 2000: vol. 3, 50, figs. 1-4.
Specimens. BIK-C-308, Satsuki, depth 10 m, coll. T. Mezaki, 6 Oct. 2009. CMNH-ZG 05564, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009.

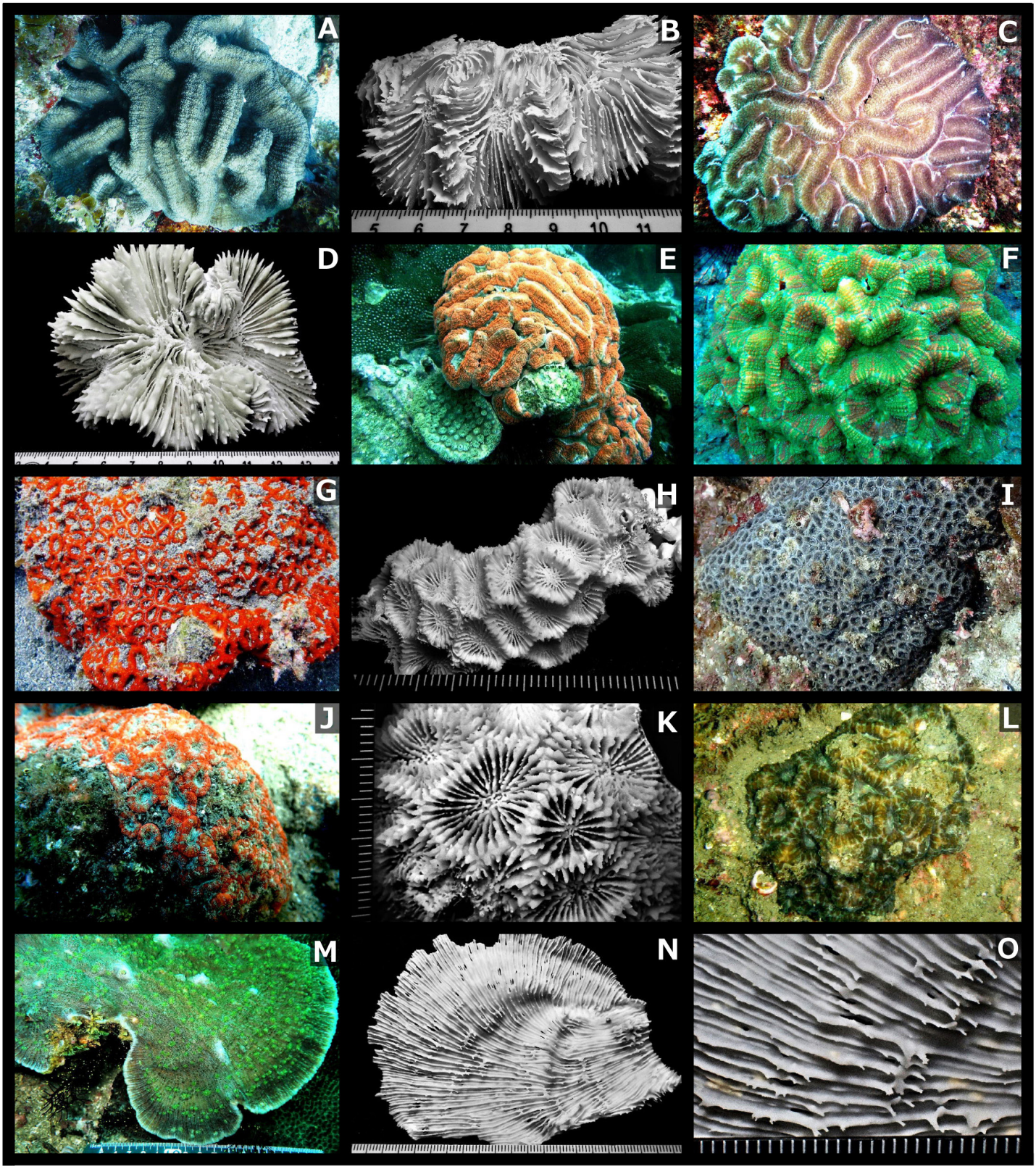

Fig. 13 A-C, *Lobophyllia radians* (Milne Edwards & Haime, 1849): A, B, AMBL-JSCT 143, Oshima, depth 7.2 m; C, no specimen, Katashima, depth 5 m. D-F, *Lobophyllia robusta* Yabe & Sugiyama, 1936; D, AMBL-JSCT 138, Gakenoshita, depth 8.0 m; E, no specimen, Satsuki; F, Satsuki, depth 5 m, no specimen. G-I, *Micromussa amakusensis* (Veron, 1990); G, H, AMBL-JSCT 87, Haruhae, depth 2 m; I, KI-AMK2019-19, Oshima. J-L, *Micromussa lordhowensis* complex: J, K, KI-AMK2019-37, Haruhae, depth 2.0 m; L, SMBL Cni-11059, Satsuki, depth 4 m. M-O, *Oxypora lacera* (Verrill, 1864), AMBL-JSCT 105, Gakenoshita, depth 13 m. Scale marks: 1 mm.

Lobophyllia radians (Milne Edwards & Haime, 1849)
(Japanese name: Dainousango)
(Figs. 13A-C)

Symphyllia radians Milne Edwards & Haime, 1849a: 255 [East Indies]; Veron & Pichon, 1980: 289, figs. 499-502; Nishihira & Veron, 1995: 305, 4 unnumbered figs.; Veron, 2000: vol. 3, 58, figs. 1-6; Sugihara *et al*., 2015: 113, 4 unnumbered figs.
Lobophyllia radians: Huang *et al*., 2016: 453; Nomura, 2016b: 60, figs. A-F.
Specimens. KCA19D0054, Oshima, depth 7.2 m, coll. N. Dewa, 10 Oct. 2019. KI-AMK2019-31•2019-38, Haruhae, depth 1.6-5.0 m, coll. K. Ito, 10 Oct. 2019.

Lobophyllia robusta Yabe & Sugiyama, 1936
(Japanese name: Hanagatasango)
(Figs. 13D-F)

Lobophyllia robusta Yabe & Sugiyama in Yabe, Sugiyama & Eguchi, 1936: 44, pl. 32, figs. 2-4 [Misaki, Kochi, Japan]; Sugihara *et al*., 2015: 108, 4 unnumbered figs.; Nomura, 2016b: 61, figs. A-F.
Symphyllia valenciennesii: Nishihira & Veron, 1995: 307, 4 unnumbered figs.
Specimens. AMBL-JSCT 138, Gakenoshita, depth 8 m, coll. Y. Kitano, 11 Oct. 2019. KCA19D0053, Oshima, depth 7.2 m, coll. N. Dewa, 10 Oct. 2019. KCA19D0057, Gakenoshita, depth 13.4 m, coll. N. Dewa, 11 Oct. 2019.

Genus ***Micromussa*** Veron, 2000
Micromussa amakusensis (Veron, 1990)
(Japanese name: Amakusa-ootogekikumeishi)
(Figs. 13G-I)

Acanthastrea amakusensis Veron, 1990: 137, figs. 42-44 [Amakusa Is., Japan]; Nishihira & Veron, 1995: 297, 2 unnumbered figs.
Micromussa amakusensis: Veron, 2000: vol. 3, 10, figs. 1-5; Sugihara *et al*., 2015: 109, 4 unnumbered figs.; Arrigoni *et al*., 2016: 417, figs. 1A, 2A, 7A-C,14A, F; Nomura, 2016b: 62, figs. A-F.
Not *Micromussa amakusensis*: Wallace *et al*., 2009: 94, figs. 7F, 59 (= *M. lordhowensis* complex).
Specimens. AMBL-JSCT 87, Haruhae, depth 2 m, coll. K. Nomura, 6 Oct. 2009. GSH-AMK008, Maruse, depth 3.0 m, coll. G. Shimada, 9 Oct. 2019. KCA19D0050, Tsutsumase, depth 4.4 m, coll. N. Dewa, 9 Oct. 2019. KI-AMK2019-19, Oshima, depth 8.4 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-36, Haruhae, depth 1.8 m, coll. K. Ito, 10 Oct. 2019. MIY-KK2009-7•8, Haruhae, depth 5 m, coll. K. Kajiwara, 7 Oct. 2009. MIY-KK2009-9, Satsuki, depth 2-5 m, coll. Y. Zayasu, 7 Oct. 2009. SMBL Cni-11046•11051•11055•11060, Satsuki, depth 2-5 m, coll. Y. Zayasu, 7 Oct. 2009.
Specimens. KI-AMK2019-37, Haruhae, depth 2.0 m, coll. K. Ito, 10 Oct. 2019. SMBL Cni-11044, Haruhae, depth 2 m, coll. Y. Zayasu, 6 Oct. 2009. SMBL Cni-11048•11058•11059, Satsuki, depth 4-5 m, coll. Y. Zayasu, 7 Oct. 2009.
Remarks. Specimens of Amakusa identified as *Micromussa lordhowensis* may contain several species.

Micromussa lordhowensis complex
(Japanese name: Kaku-ootogekikumeishi)
(Figs. 13J-L)

Acanthastrea sp.: Veron & Pichon, 1980: 264, figs. 455, 456.
Acanthastrea lordhowensis Veron & Pichon, 1982: 138 [Lordhow I., eastern Australia]; Nishihira & Veron, 1995: 296, 4 unnumbered figs.; Veron, 2000: vol. 3, 14, figs. 1-6; Arrigoni *et al*., 2016: 417, figs. 1C, 2C, 14C, H.
Micromussa amakusensis: Wallace *et al*., 2009: 94, figs. 7F, 59.
Micromussa lordhowensis: Nomura, 2016b: 63, figs. A-F; Arrigoni *et al*., 2016: 417,figs. 1C, 2C, 14C, H.

Genus ***Oxypora*** Saville-Kent, 1871
Oxypora lacera (Verrill, 1864)
Japanese name: Ana-kikkasango
(Figs. 13M-O)

Trachypora lacera Verrill, 1864: 53 [Singapore].
Oxypora lacera: Veron & Pichon, 1980: 314, figs. 546-558; Nishihira & Veron, 1995: 276, 5 unnumbered figs.; Veron, 2000: vol. 2, 336, figs. 1-8; Nomura, 2016b: 64, figs. A-F.
Specimen. AMBL-JSCT 105, Gakenoshita, depth 13 m, coll. K. Nomura, 11 Oct. 2019.

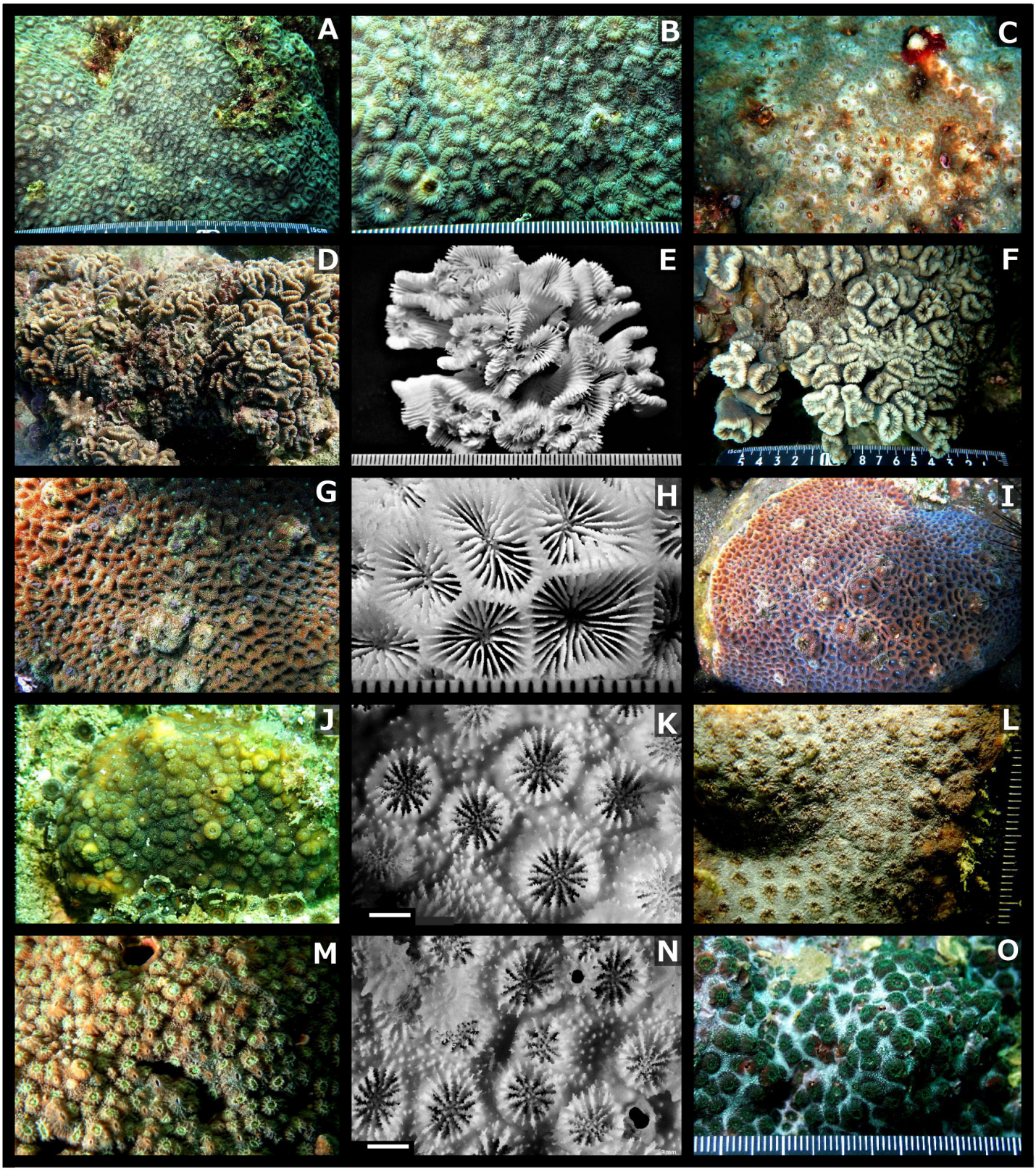

Fig. 14 A-C, *Astrea curta* Dana, 1846: A, B, no specimen, Oshima, depth 5 m; C, no specimen, Katashima, depth 4m. D-F, *Caulastraea tumida* Matthai, 1928: D, E, AMBL-JSCT 135, Haruhae, depth 6.0 m; F, no specimen, Haruhae, depth 5 m. G-I, *Coelastrea aspera* (Verrill, 1866); G, H, AMBL-JSCT 86, Haruhae, depth 2 m; I, no specimen, Haruhae, depth 2 m. J-O, *Cyphastrea japonica* Yabe & Sugiyama, 1932: J, K, MIY-HM2019-045, Satsuki, depth 6.9 m; L, MIY-HM2019-026, Haruhae, depth 9.5 m; M, N, MIY-HM2019-001, Tsutsumase, depth 7.0 m; O, MIY-HM2019-014, Yatagasone, depth 13.3 m. Scale marks and bars: 1 mm.

Family Merulinidae Verrill, 1865
Genus ***Astrea*** Lamarck, 1801
Astrea curta Dana, 1846
(Japanese name: Maru-kikumeishi)
(Figs. 14A-C)

Astrea curta Dana, 1846: 209; 1849: pl. 10, fig. 3a-c [Fiji]; Huang *et al*., 2014b: 297, figs. 4B-F; Sugihara *et al*., 2015: 114, 4 unnumbered figs.; Nomura, 2016b: 14, figs. A-F.

Montastrea curta: Veron, Pichon & Wijsman-Best, 1977: 137, figs. 257-263; Nishihira & Veron, 1995: 362, 4 unnumbered figs.; Veron, 2000: vol. 3, 216, figs. 1-8.

Specimens. Observation only.

Genus ***Caulastraea*** Dana, 1846
Caulastraea tumida Matthai, 1928
(Japanese name: Tabanesango)
(Figs. 14D-F)

Caulastraea tumida Matthai, 1928: 275, pl. 72, figs. 5, 6 [western Australia]; Huang *et al*., 2014b: 302, figs. G-I; Sugihara *et al*., 2015: 115, 4 unnumbered figs.

Caulastrea tumida: Veron, Pichon & Wijsman-Best, 1977: 18, figs. 13-15; Nishihira & Veron, 1995: 322, 2 unnumbered figs.; Veron, 2000: vol. 3, 94, figs. 1-4; Nomura, 2016b: 15, figs. A-F.

Specimens. AMBL-JSCT 135, Haruhae, depth 6.0 m, coll. G. Suzuki, 10 Oct. 2019. CMNH-ZG 05577, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. KI-AMK2019-34, Haruhae, depth 2.3 m, coll. K. Ito, 10 Oct. 2019. MIY-HM2019-025, Haruhae, depth 9.3 m, coll. H. Matsumoto, 10 Oct. 2019.

Genus ***Coelastrea*** Verrill, 1866
Coelastrea aspera (Verrill, 1866)
(Japanese name: Parikamenoko-kikumeishi)
(Figs. 14G-I)

Goniastrea aspera Verrill, 1866: 32 [Hong Kong]; Veron, Pichon & Wijsman-Best, 1977: 83, figs. 157-163; Nishihira & Veron, 1995: 346, 4 unnumbered figs.; Veron, 2000: vol. 3, 168, figs. 1-5; Wallace *et al*., 2009: 70, figs. 6B, D, 43.

Coelastrea aspera: Huang *et al*., 2014b: 304, figs. 8B-F; Nomura, 2016b: 16, figs. A-F.

Coelastrea sp. 1: Sugihara *et al*., 2015: 116, 4 unnumbered figs.

Specimens. AMBL-JSCT 36, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 68, Oshima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 86, Haruhae, depth 2 m, coll. K. Nomura, 6 Oct. 2009. KI-AMK2019-09, Tsutsumase, depth 8.2 m, coll. K. Ito, 9 Oct. 2019. KS-AMA09-14, Oshima, depth 6 m, coll. K. Shimoike, 5 Oct. 2009. KS-AMA2009-23, Satsuki, depth 8 m, coll. K. Shimoike, 6 Oct. 2009. SMBL Cni-11045, Haruhae, depth 2 m, coll. Y. Zayasu, 6 Oct. 2009.

Genus ***Cyphastrea*** Milne Edwards & Haime, 1848
Cyphastrea japonica Yabe & Sugiyama, 1932
Japanese name: Nihon-togekikumeishi
(Figs. 14J-O)

Cyphastrea japonica Yabe & Sugiyama, 1932: 161 [Misaki, Kochi, Japan]; Yabe & Sugiyama, 1936: 25, pl. 12, figs. 4-6; Sugihara *et al*., 2015: 119, 4 unnumbered figs.; Nomura, 2016b: 8, figs. A-F.

? *Cyphastrea japonica*: Nishihira & Veron, 1995: 377, 3 unnumbered figs.; Veron, 2000: vol. 3, 240, figs. 1-5.

Not *Cyphastrea japonica*: Veron, Pichon & Wijsman-Best, 1977: 179, figs. 357-365 (C. decadia).

Specimens. AMBL-JSCT 97, Yatagasone, depth 12 m, coll. K. Nomura, 9 Oct. 2019. AMBL-JSCT 147, Tsutsumase, depth 7.0 m, coll. H. Matsumoto, 9 Oct. 2019. KI-AMK2019-46, Gakenoshita, depth 16.8 m, coll. K. Ito, 11 Oct. 2019. MIY-HM2019-014, Yatagasone, depth 13.3 m, coll. H. Matsumoto, 9 Oct. 2019. MIY-HM2019-015•2019-018, Oshima, depth 7.8-8.1 m, coll. H. Matsumoto, 10 Oct. 2019. MIY-HM2019-026, Haruhae, depth 9.5 m, coll. H. Matsumoto, 10 Oct. 2019. MIY-HM2019-034, Gakenoshita, depth 13.6 m, coll. H. Matsumoto, 11 Oct. 2019. MIY-HM2019-039•2019-041•2019-045, Satsuki, depth 6.9-8.3 m, coll. H. Matsumoto, 11 Oct. 2019.

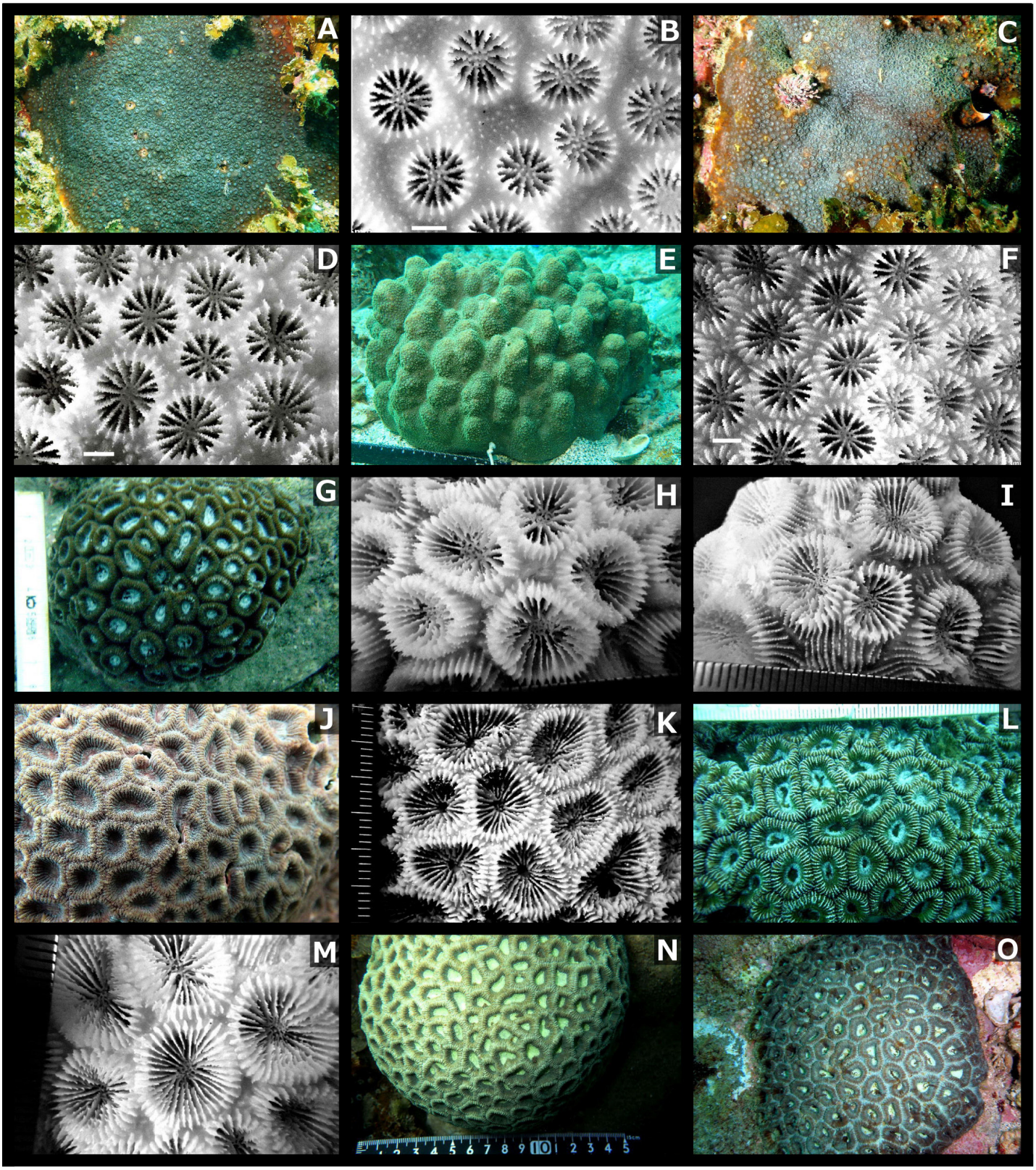

Fig. 15 A-F, *Cyphastrea serailia* (Forskål, 1775): A, B, KI-AMK2019-02, Tsutsumase, depth 7.8 m; C, D, MIY-HM2019-003, Tsutsumase, depth 7.3 m; E, F, MIY-HM2019-016, Oshima, depth 7.6 m. G-I, *Dipsastraea pallida* (Dana, 1846): G, H, AMBL-JSCT 7, Kuwashima, depth 6 m; I, KI-AMK2019-21, Oshima, depth 8.1 m. J-O, *Dipsastraea speciosa* (Dana, 1846): J, K, KI-AMK2019-06, Tsutsumase, depth 8.0 m; L, M, MUFS C2, Satsuki, depth 4 m; N, no specimen, Haruhae, depth 5 m; O, Oshima, depth 5 m, no specimen. Scale marks and bars: 1 mm.

Cyphastrea serailia (Forskål, 1775)
(Japanese name: Fukatoge-kikumeishi)
(Figs. 15A-F)

Madrepora serailia Forskål, 1775: 135 [not recorded].
Cyphastrea serailia: Veron, Pichon & Wijsman-Best, 1977: 169, figs. 327-341; Veron, 2000: vol. 3, 242, figs. 1-6; Huang et al., 2014b: 304, figs. G-I; Nomura, 2016b: 19, figs. A-F.
? *Cyphastrea serailia*: Nishihira & Veron, 1995: 375, 3 unnumbered figs.
Specimens. AMBL-JSCT 148, Tsutsumase, depth 7.3 m, coll. H. Matsumoto, 9 Oct. 2019. KI-AMK2019-02, Tsutsumase, depth 7.8 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-46, Gakenoshita, depth 16.8 m, coll. K. Ito, 11 Oct. 2019. MIY-HM2019-002•2019-004, Tsutsumase, depth 6.8-7.9 m, coll. H. Matsumoto, 9 Oct. 2019. MIY-HM2019-016•2019-017, Oshima, depth 7.6-7.8 m, coll. H. Matsumoto, 10 Oct. 2019. MIY-HM2019-031•2019-035•2019-036•2019-037, Gakenoshita, depth 5.7-22.3 m, coll. H. Matsumoto, 11 Oct. 2019. MIY-HM2019-040•2019-042•2019-043•2019-044, Satsuki, depth 7.2-8.3 m, coll. H. Matsumoto, 11 Oct. 2019.

Genus ***Dipsastraea*** Blainville, 1830
Dipsastraea pallida (Dana, 1846)
(Japanese name: Usucha-kikumeishi)
(Figs. 15G-I)

Astraea pallida Dana, 1846: 224; 1849: pl. 10, fig. 13 [Fiji].
Favia pallida: Veron, Pichon & Wijsman-Best, 1977: 33, figs. 46-55; Nishihira & Veron, 1995: 325, 3 unnumbered figs.; Veron, 2000, vol. 3, 114, figs. 1-6.
Dipsastraea pallida: Budd et al., 2012: 518; Huang *et al*., 2014b: 308, fig. J; Sugihara *et al*., 2015: 126, 3 unnumbered figs.; Nomura, 2016b: 20, figs. A-F, 21, figs. A-F.
Specimens. AMBL-JSCT 7•8, Kuwashima, depth 6 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. KI-AMK2019-21, Oshima, depth 8.1 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-35, Haruhae, depth 1.7 m, coll. K. Ito, 10 Oct. 2019. MUFS C17•18, Satsuki, depth 4 m, coll. H. Fukami, 7 Oct. 2009.
Remarks. Specimens identified as *Dipsastraea pallida* from mainland Japan possibility include several species.

Dipsastraea speciosa (Dana, 1846)
(Japanese name: Kikumeishi)
(Figs. 15J-O)

Astraea speciosa Dana, 1846: 220; 1849: pl. 11, fig. 1 [East Indies].
Favia speciosa: Veron, Pichon & Wijsman-Best, 1977: 33, fig.45; Nishihira & Veron, 1995: 326, 3 unnumbered figs.; Veron, 2000: vol. 3, 108, figs. 1-5; Wallace et al., 2009: 61, figs. 5E, 35.
Dipsastraea speciosa: Budd et al., 2012: 518; Sugihara et al., 2015: 128, 4 unnumbered figs.; Nomura, 2016b: 22, figs. A-F, 23, figs. A-F, 24, figs. A-F, 25, figs. A-F, 26.
Specimens. AMBL-JSCT 2, Kuwashima, depth 10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 34•35•43•48•52•53, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. KCA19D0049, Tsutsumase, depth 8.6 m, coll. N. Dewa, 9 Oct. 2019. KI-AMK2019-06, Tsutsumase, depth 8.0 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-25, Tsurusaki, depth 6.9 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-44, Gakenoshita, depth 16.7 m, coll. K. Ito, 11 Oct. 2019. KS-AMA09-11, Oshima, depth 7 m, coll. K. Shimoike, 5 Oct. 2009. KS-AMA09-20•21•, Satsuki, depth 6-8 m, coll. K. Shimoike, 6 Oct. 2009. MUFS C1•2•3•15, Satsuki, depth 4-8 m, coll. H. Fukami, 6-7 Oct. 2009. MUFS C6, Haruhae, depth 6 m, coll. H. Fukami, 6 Oct. 2009.
Remarks. Specimens from mainland Japan including the Amakusa Islands possibility contain several species.

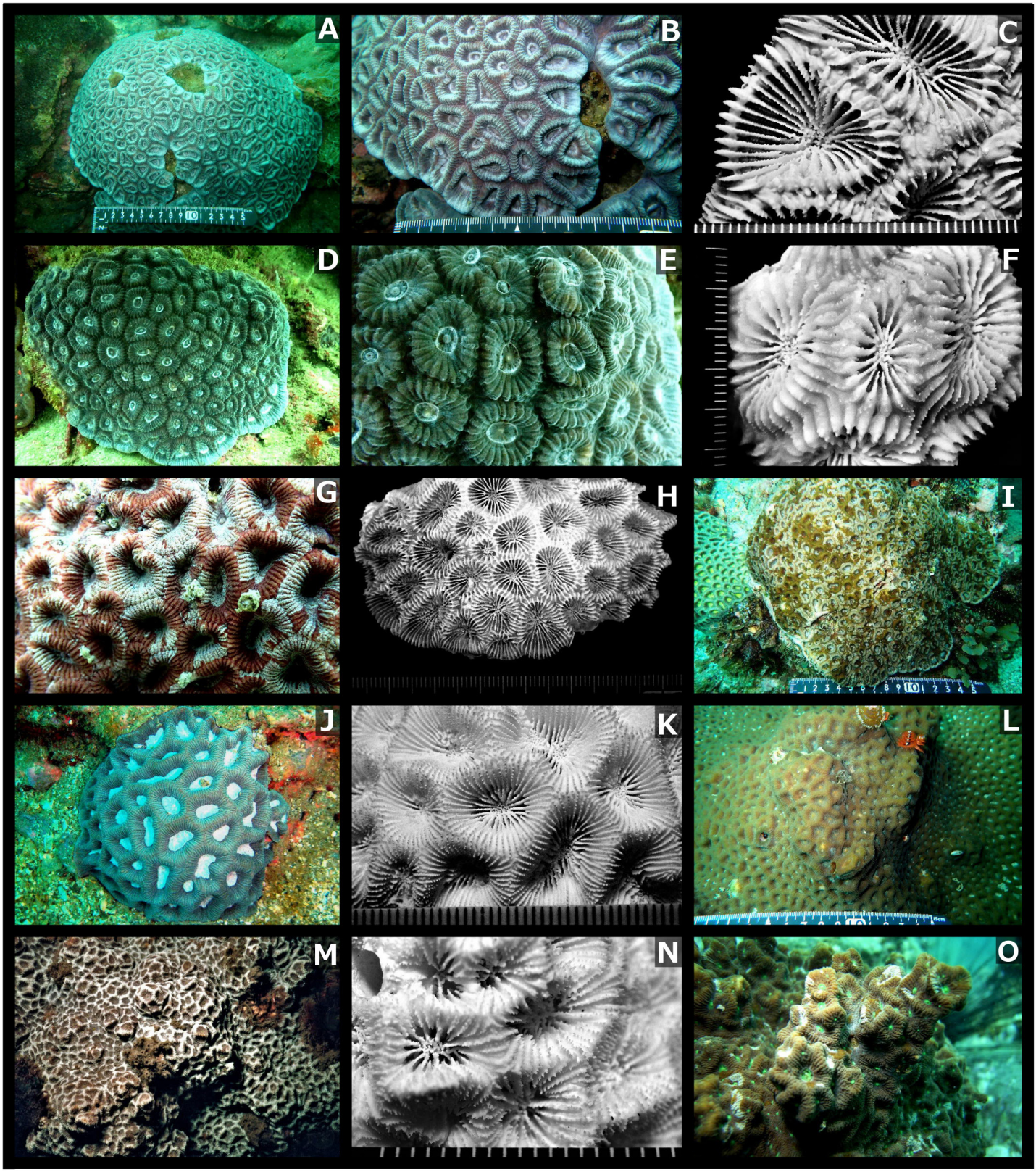

Fig. 16 A-F, *Dipsastraea* sp. HONDOABARE: A-C, AMBL-JSCT 118, Satsuki, depth 8 m; D-F, KI-AMK2019-48, Gakenoshita, depth 14.0 m. G-I, *Dipsastraea* sp. TSUKIGATA: G, H, KI-AMK2019-01, Tsutsumase, depth 8.5 m; I, no specimen, Oshima, depth 5 m. J-L, *Favites halicora* (Ehrenberg, 1834): J, K, AMBL-JSCT 81, Satsuki, depth 5 m; L, no specimen, Oshima, depth 5 m. M-O, *Favites pentagona* (Esper, 1795): M, N, AMBL-JSCT 45, Katashima; O, no specimen, Satsuki, depth 3 m. Scale marks: 1 mm.

Dipsastraea sp. HONDOABARE
(Japanese name: Hondoabare-kikumeishi)
(Figs. 16A-F)

Dipsastraea aff. *veroni*: Sugihara *et al*., 2015, 129, 4 unnumbered figs.
Dipsastraea sp. HONDOABARE: Nomura *et al*., 2016: 10; Nomura, 2016b: 27, figs. A-F.
Specimens. AMBL-JSCT 51, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 118, Satsuki, depth 8.1 m, coll. K. Nomura, 11 Oct. 2019. BIK-C-309, Satsuki, 12m deep, coll. T. Mezaki, 6 Oct. 2009. KS-AMA2009-17, Satsuki, depth 6 m, coll. K. Shimoike, 6 Oct. 2009. GSH-AMK014, Gakenoshita, depth 12.9 m, coll. G. Shimada, 11 Oct. 2019. KI-AMK2019-48, Gakenoshita, depth 14.0 m, coll. K. Ito, 11 Oct. 2019.
Remarks. This species may be an undescribed which is closely related to *Dipsastraea veroni* Moll & Borel-Best, 1984.

Dipsastraea sp. TSUKIGATA
(Japanese name: Tsukigata-kikumeishi)
(Figs. 16G-I)

Dipsastraea aff. *lizardensis*: Sugihara *et al*., 2015: 123, 3 unnumbered figs.
Dipsastraea sp. TSUKIGATA: Nomura *et al*., 2016: 10; Nomura, 2016b: 28, figs. A-F.
Specimen. KI-AMK2019-01, Tsutsumase, depth 8.5 m, coll. K. Ito, 9 Oct. 2019.
Remarks. This species may be undescribed but is closely related to *Dipsastraea lizardensis* (Veron, Pichon & Wijsman-Best, 1977).

Genus ***Favites*** Link, 1807
Favites halicora (Ehrenberg, 1834)
(Japanese name: Maru-kamenokokikumeishi)
(Figs. 16J-L)

Astrea halicora Ehrenberg, 1834: 321 [Red Sea].
Goniastrea halicora: Klunzinger, 1879: pl. 4, fig. 1.
Favites halicora: Veron, Pichon & Wijsman-Best, 1977: 59, figs. 58-101; Nishihira & Veron, 1995: 338, 3 unnumbered figs.; Veron, 2000: vol. 3, 144, figs. 1-4; Wallace *et al*., 2009: 69, figs. 5H, 41; Sugihara *et al*., 2015: 131, 3 unnumbered figs.; Nomura, 2016b: 30, figs. A-F.
Specimens. AMBL-JSCT 81, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. MUFS C7, Haruhae, depth 6 m, coll. H. Fukami, 6 Oct. 2009. KI-AMK2019-42, Gakenoshita, depth 6.1 m, coll. K. Ito, 11 Oct. 2019.

Favites pentagona (Esper, 1795)
(Japanese name: Gokaku-kikumeishi)
(Figs. 16M-O, 17A-C)

Madrepora pentagona Esper, 1795: [East Indies].
Favites pentagona: Veron, Pichon & Wijsman-Best, 1977: 68, figs. 122-128; Nishihira & Veron, 1995: 341, 4 unnumbered figs.; Veron, 2000: vol. 3, 138, figs. 1-6; Sugihara *et al*., 2015: 132, 4 unnumbered figs.; Nomura, 2016b: 31, figs. A-F.
Specimens. AMBL-JSCT 45, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. KI-AMK2019-08, Tsutsumase, depth 7.9 m, coll. K. Ito, 9 Oct. 2019. KS-AMA2009-23, Satsuki, depth 6-8 m, coll. K. Shimoike, 6 Oct. 2009.

Favites rotundata complex
(Japanese name: Atsu-kikumeishi)
(Figs. 18A-F)

Favites rotundata Veron, Pichon & Wijsman-Best, 1977: 64, figs. 110-117 [Great Barrier Reef; Huang *et al*., 2014b: 316, figs. 13G-I; Sugihara *et al*., 2015: 134, 3 unnumbered figs.; Nomura, 2016b: 32, figs. A-F, 33, figs. A-F.
Favia rotundata: Nishihira & Veron, 1995: 331, 3 unnumbered figs.; Veron, 2000: vol. 3, 124, figs. 1-5.
Favites cf. *rotundata*: Sugihara *et al*., 2015: 135, 3 unnumbered figs.
Favites aff. *rotundata*: Sugihara *et al*., 2015: 136, 4 unnumbered figs.
Specimens. AMBL-JSCT 10, Kuwashima, depth 10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 16,

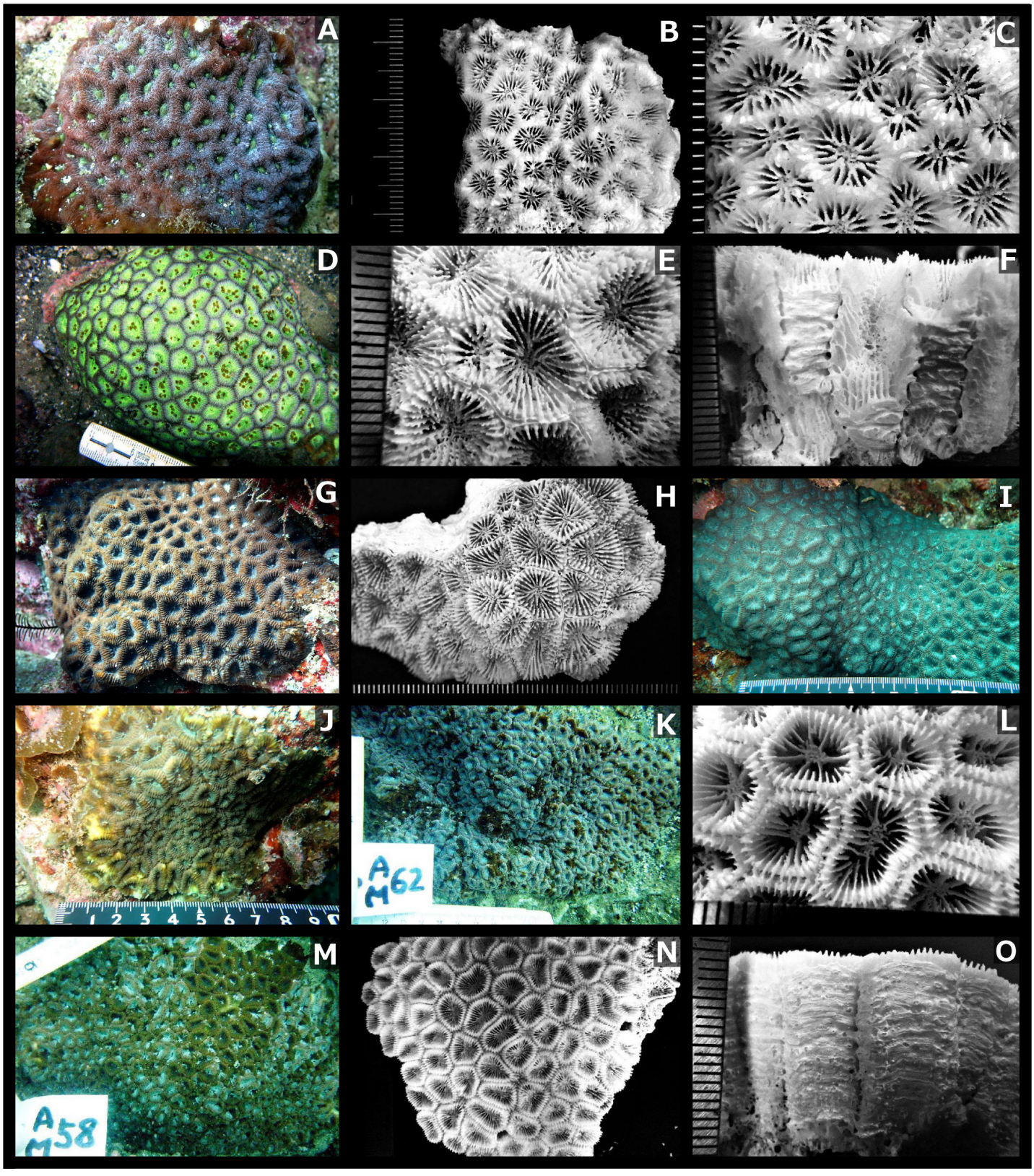

Fig. 17 A-C, *Favites pentagona* (Esper, 1795), KI-AMK2019-08, Tsutsumase, depth 7.9 m. D-I, *Favites valenciennesii* (Milne Edwards & Haime, 1849): D-F, MUFS C 13, Satsuki, depth 3m; G, H, KI-AMK2019-18, Oshima, depth 7.9 m; I, no specimen, Oshima, depth 5 m. J-O, *Favites* sp. NISETAKAKU: J, no specimen, Oshima, depth 5 m; K, L, MUFS C16, Satsuki, depth 4 m; M-O, MUFS C16-19, Satsuki, depth 4-5m. Scale marks: 1 mm.

Chikushima, depth 10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 38•42, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. KI-AMK2019-28•2019-40, Tsurusaki, depth 4.0-5.5 m, coll. K. Ito, 10 Oct. 2019. KS-AMA09-12, Oshima, depth 7 m, coll. K. Shimoike, 5 Oct. 2009.

Remarks. *Favites rotundata* sensu lato may have several cryptic species (Sugihara *et al*., 2015; Nomura, 2016b).

Favites valenciennesii (Milne Edwards & Haime, 1849)
(Japanese name: Takaku-kikumeishi)
(Figs. 17D-I)

Phymastrea valenciennesii Milne Edwards & Haime, 1849b: 124, pl. 9, figs. 3, 3a [not recorded].

Montastrea valenciennesi: Veron, Pichon & Wijsman-Best, 1977: 144, figs. 274-283; Nishihira & Veron, 1995: 366, 5 unnumbered figs.; Veron, 2000: vol. 3, 224, figs. 1-4.

Favites valenciennesi: Huang *et al*., 2014b: 316, figs. 13J-L; Sugihara *et al*., 2015: 137, 3 unnumbered figs.; Nomura, 2016b: 34, figs. A-F.

Specimens. AMBL-JSCT 65, Katashima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. GSH-AMK003, Tsutsumase, depth 6.4 m, coll. G. Shimada, 9 Oct. 2019. KI-AMK2019-04, Tsutsumase, depth 8.2 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-18, Oshima, depth 7.9 m, coll. K. Ito, 10 Oct. 2019. MIY-HM2019-005, Tsutsumase, depth 7.1 m, coll. H. Matsumoto, 9 Oct. 2019. MUFS C9•10•11•13•14, Satsuki, 3m deep, coll. H. Fukami, 7 Oct. 2009. MUFS C5, Haruhae, depth 6 m, coll. H. Fukami, 6 Oct. 2009.

Favites virens (Dana, 1846)
(Japanese name: Oo-kamenokokikumeishi)
(Figs. 19A-C)

Astraea virens Dana, 1846: 228; 1849: pl. 11, fig. 8 [Fiji].

Favites virens: Sugihara et al., 2015: 139, 3 unnumbered figs.; Nomura, 2016b: 35, figs. A-F.

Specimens. AMBL-JSCT 58, Katashima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. IORD-HC09-21, Haruhae, depth 2 m, coll. H. Yokochi, 7 Oct. 2009. KI-AMK2019-23, Tsurusaki, depth 7.0 m, coll. K. Ito, 10 Oct. 2019. MUFS C12, Satsuki, depth 3 m, coll. H. Fukami, 7 Oct. 2009.

Favites sp. NISETAKAKU
Japanese name: Nisetakaku-kikumeishi
(Figs. 17J-O)

Favites aff. *valensiennesi*: Sugihara *et al*., 2015: 138, 4 unnumbered figs.

Favites sp. NISETAKAKU: Nomura *et al*., 2016: 10; Nomura, 2016b: 36, figs. A-F.

Specimens. AMBL-JSCT 39, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 62, Katashima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 67, Katashima, depth 6 m, coll. K. Nomura, 5 Oct. 2009. KS-AMA09-34, Satsuki, depth 4 m, coll. K. Shimoike, 7 Oct. 2009. MUFS C8, Haruhae, depth 6 m, coll. H. Fukami, 67 Oct. 2009. MUFS C16•19, Satsuki, depth 4-5 m, coll. H. Fukami, 7 Oct. 2009.

Remarks. This species may be undescribed, but is closely related to *Favites valenciennesi* (Milne Edwards & Haime, 1849). Both are easily distinguished by the following characters: *Favites* sp. NISETAKAKU is easily broken at the thecae (Fig. 17O), while *F. valenciennesi* is not (Fig. 17F).

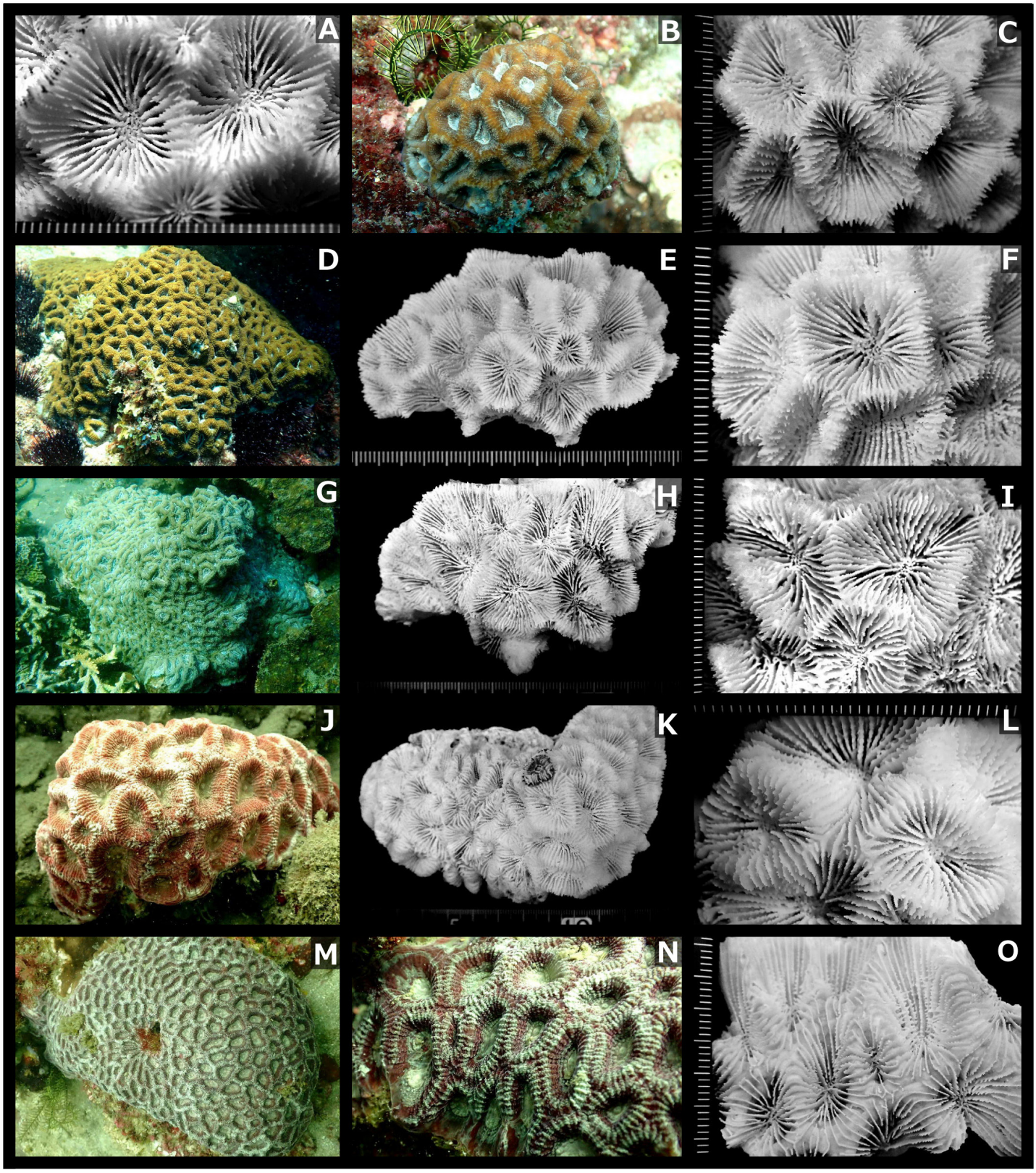

Fig. 18 A-F, *Favites rotundata* complex: A, AMBL-JSCT 10, Kuwashima, depth 10 m; B, C, KI-AMK2019-28, Tsurusaki, depth 5.5 m; D-F, KI-AMK2019-40, Tsurusaki, depth 4.0 m. G-I, *Favites* sp., KI-AMK2019-31, Haruhae, depth 1.6 m. J-L, *Favites* sp., KI-AMK2019-38, Haruhae, depth 5.0 m. M-O, *Favites* sp., KI-AMK2019-49, Gakenoshita, depth 13.1 m. Scale marks: 1 mm.

Favites spp.
(Figs. 18G-O)

Specimens. KI-AMK2019-31•2019-38, Haruhae, depth 1.6-5.0 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-49, Gakenoshita, depth 13.1 m, coll. K. Ito, 11 Oct. 2019.

Remarks. The exact taxonomic status cannot be determined for these specimens.

Genus ***Hydnophora*** Fischer von Waldheim, 1807
Hydnophora exesa (Pallas, 1766)
(Japanese name: Toge-ibosango)
(Figs. 19D-F)

Madrepora exesa Pallas, 1766: 290 [Indian Ocean].

Hydnophora exesa: Veron, Pichon & Wijsman-Best, 1977: 129, figs. 247-254; Nishihira & Veron, 1995: 312, 3 unnumbered figs.; Veron, 2000: vol. 2, 370, figs. 1-7; Wallace *et al*., 2009: 83, figs. 8E, 52; Huang *et al*., 2014b: 322, figs. 14A-C; Nomura, 2016b: 38, figs. A-F.

Specimens. AMBL-JSCT 41, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 55, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 56, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. MIY-HM2019-006, Tsutsumase, depth 7.8 m, coll. H. Matsumoto, 9 Oct. 2019. MIY-HM2019-028, Haruhae, depth 2.2 m, coll. H. Matsumoto, 10 Oct. 2019.

Genus ***Mycedium*** Milne Edwards & Haime, 1851
Mycedium elephantotus (Pallas, 1766)
(Japanese name: Usukamisango)
(Figs. 19G-I)

Madrepora elephantotus Pallas, 1766: 290 [Indian Ocean].

Mycedium elephantotus: Veron & Pichon, 1980: 320, figs. 564-582; Nishihira & Veron, 1995: 278, 4 unnumbered figs.; Huang et al., 2014b: 325, figs. 17A-C; Nomura, 2016b: 40, figs. A-F.

Specimens. AMBL-JSCT 107, Satsuki, depth 8 m, coll. K. Nomura, 11 Oct. 2019. BIK-C-305, Satsuki, depth 8 m, coll. T. Mezaki, 6 Oct. 2009. CMNH-ZG 05576, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009.

Genus ***Oulophyllia*** Milne Edwards & Haime, 1848
Oulophyllia crispa (Lamarck, 1816)
(Japanese name: Oonagaresango)
(Figs. 19J-L)

Meandrina crispa Lamarck, 1816: 290 [Indian Ocean].

Oulophyllia crispa: Veron, Pichon & Wijsman-Best, 1977: 118, figs. 227-237; Nishihira & Veron, 1995: 360, 2 unnumbered figs.; Veron, 2000: vol. 3, 196, figs. 1-6; Wallace *et al*., 2009: 77, figs. 6F, 47; Huang *et al*., 2014b: 329, figs. A-C; Sugihara *et al*., 2015: 149, 4 unnumbered figs.; Nomura, 2016b: 41, figs. A-F.

Specimen. AMBL-JSCT 119, Gakenoshita, depth 9.4 m, coll. K. Ito, 11 Oct. 2019.

Genus ***Paragoniastrea*** Huang, Benzoni & Budd, 2014
Paragoniastrea australensis (Milne Edwards & Haime, 1857)
(Japanese name: Une-kamenoko-kikumeishi)
(Figs. 19M-O)

Prionastraea australensis Milne Edwards & Haime, 1857: 520 [Australia].

Goniastrea australensis: Veron, Pichon & Wijsman-Best, 1977: 92, figs. 176-182; Nishihira & Veron,1995: 349, 4 unnumbered figs.; Veron, 2000: vol. 3, 170, figs. 1-7; Wallace et al., 2009: 72, figs. 6C, 44.

Paragoniastrea australensis: Huang *et al*., 2014a: 13, figs. 6A-C; Sugihara *et al*., 2015: 151, 4 figs.; Nomura, 2016b: 42, figs. A-F.

Specimens. AMBL-JSCT 82, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. KI-AMK2019-32, Haruhae, depth 1.9 m, coll. K. Ito, 10 Oct. 2019. MIY-HM2019-020, Tsurusaki, depth 6.6 m, coll. H. Matsumoto, 10 Oct. 2019.

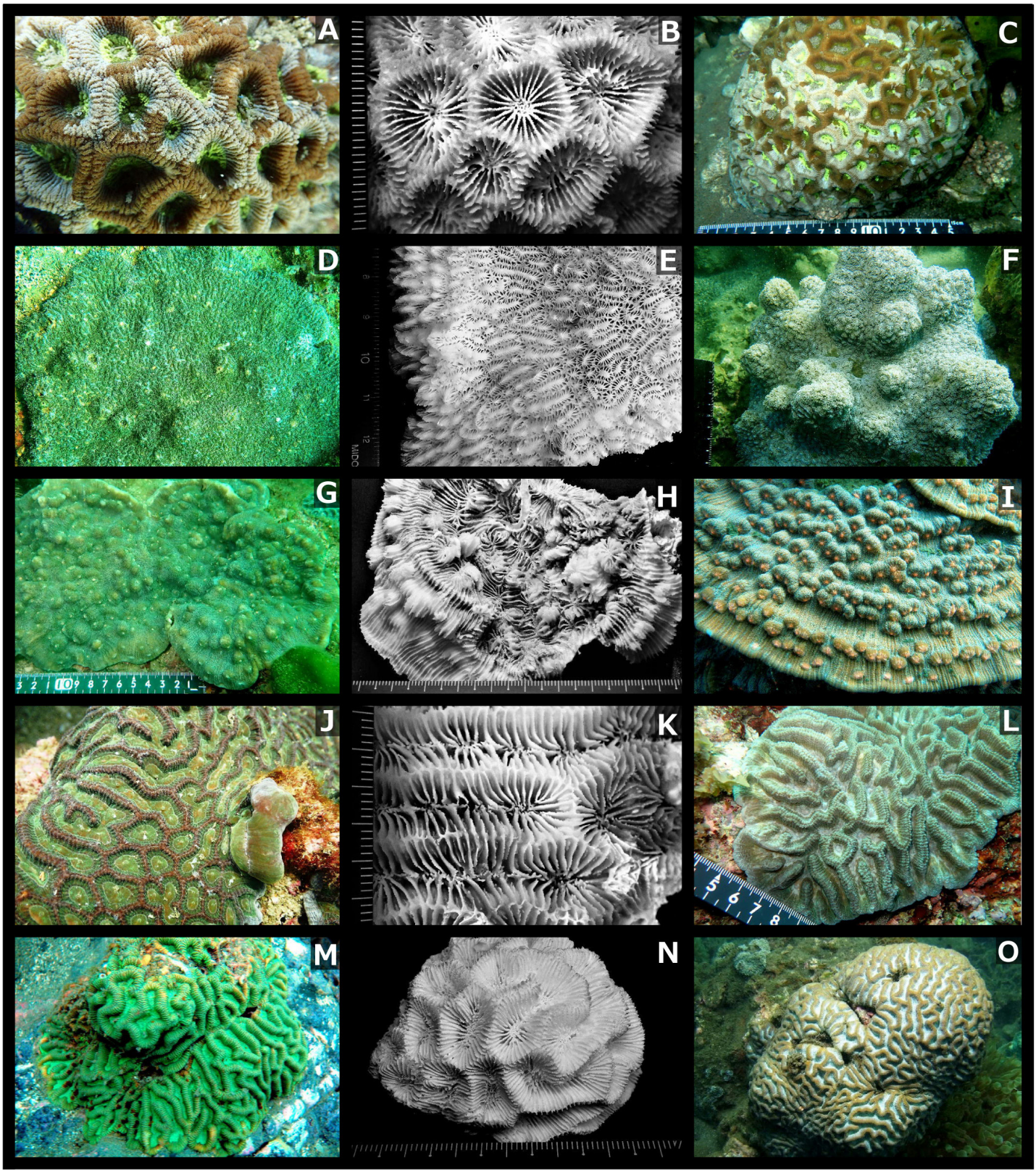

Fig. 19 A-C, *Favites virens* (Dana, 1846): A, B, KI-AMK2019-23, Tsurusaki, depth 7.0 m; C, no specimen, Haruhae, depth 3 m. D-F, *Hydnophora exesa* (Pallas, 1766): D, E, MIY-HM2019-006, Tsutsumase, depth 7.8 m; F, MIY-HM2019-028, Haruhae, depth 2.2 m. G-I, *Mycedium elephantotus* (Pallas, 1766): G, H, AMBL-JSCT 107, Satsuki, depth 8 m; I, no specimen, Haruhae, depth 5 m. J-L, *Oulophyllia crispa* (Lamarck, 1816): J, K, AMBL-JSCT 119, Gakenoshita, depth 9.4 m; L, no specimen, Oshima, depth 5 m. M-O, *Paragoniastrea australensis* (Milne Edwards & Haime, 1857): M, N, AMBL-JSCT 82, Satsuki, depth 5 m; O, no specimen, Haruhae, depth 3 m. Scale marks: 1 mm.

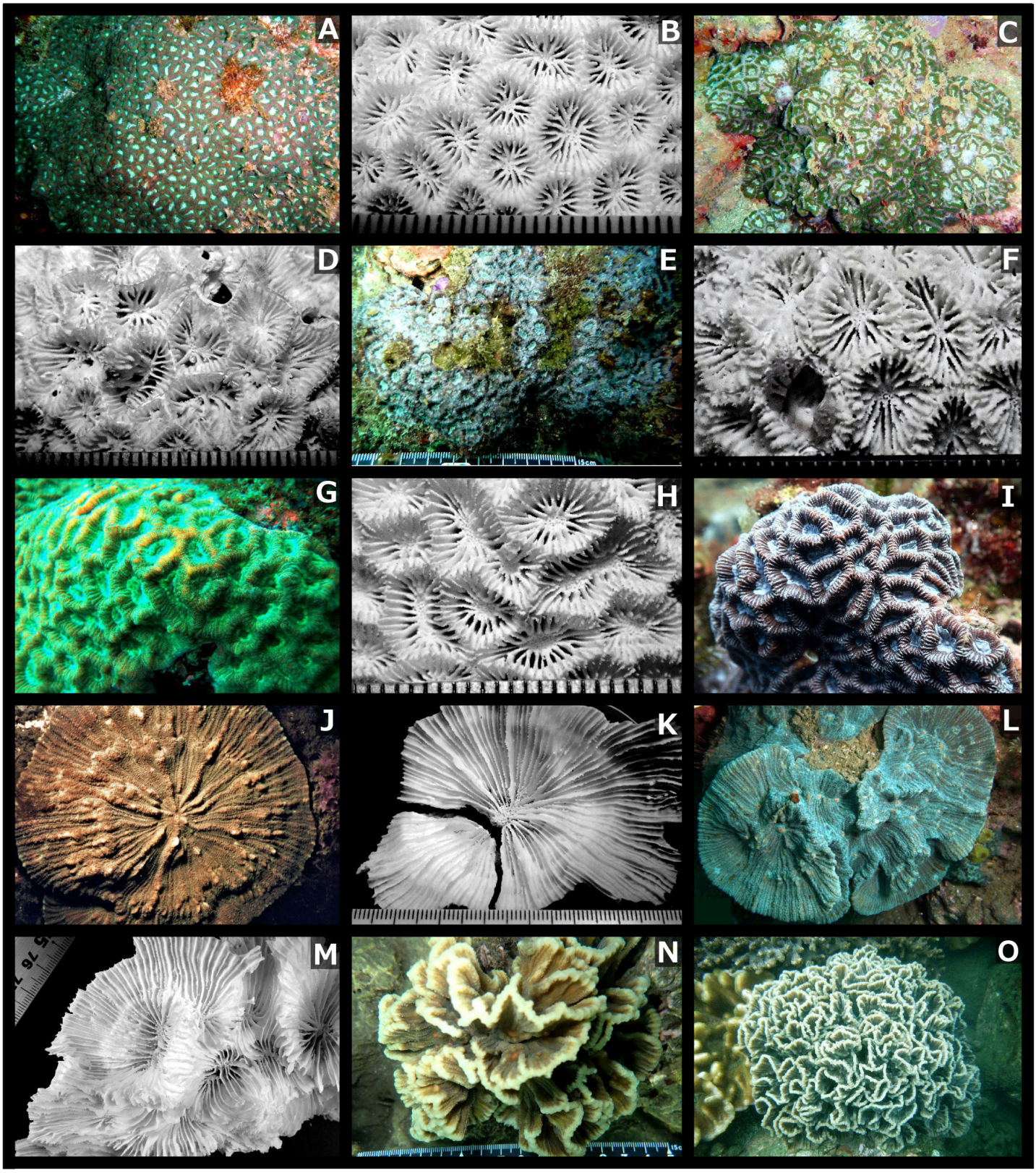

Fig. 20 A-F, *Paragoniastrea deformis* (Veron, 1990): A, B, AMBL-JSCT 72, Oshima, depth 4 m; C, D, AMBL-JSCT 80, Satsuki, depth 5 m; E, F, AMBL-JSCT 98, Oshima, depth 5 m. G-I, *Paragoniastrea* sp. HENGE: G, H, AMBL-JSCT 61, Katashima, depth 6 m; I, KI-AMK2019-41, Tsurusaki, depth 6.0 m. J-O, *Physophyllia ayleni* Wells, 1935: J, K, AMBL-JSCT 44, Katashima, depth 10 m; L, M, BIK-C-307, Satsuki, depth 10 m; N, no specimen, Haruhae, depth 5 m; O, no specimen, Haruhae, depth 5 m. Scale marks: 1 mm.

Paragoniastrea deformis (Veron, 1990)
(Japanese name: Midare-kamenokokikumeishi)
(Figs. 20A-F)

Goniastrea deformis Veron, 1990: 142, figs. 48-50 [Japan (may be Kushimoto)]; Nishihira & Veron, 1995: 345 (part), left fig.; Veron, 2000: vol. 3, 167 (part), fig. 5.

Paragoniastrea deformis: Huang *et al*., 2014a: 13, figs. 6D-F; Sugihara *et al*., 2015: 152, 3 unnumbered figs.; Nomura, 2016b: 43, figs. A-F.

Specimens. AMBL-JSCT 66, Katashima, depth 6 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 72, Oshima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 80, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 98, Oshima, depth 5 m, coll. K. Nomura, 10 Oct. 2019. BIK-C-300, Oshima, depth 7 m, coll. T. Mezaki, 5 Oct. 2009. BIK-C-317, Haruhae, depth 7 m, coll. T. Mezaki, 6 Oct. 2009. GSH-AMK004, Tsutsumase, depth 5.2 m, coll. G. Shimada, 9 Oct. 2019. KI-AMK2019-24, Tsurusaki, depth 7.0 m, coll. K. Ito, 10 Oct. 2019. MIY-HM2019-010, Maruse, depth 8.7 m, coll. H. Matsumoto, 9 Oct. 2019.

Paragoniastrea sp. HENGE
(Japanese name: Henge-kamenokokikumeishi)
(Figs. 20G-I)

Goniastrea deformis: Nishihira & Veron, 1995: 345 (part), all right figs.; Veron, 2000: vol. 3, 167 (part), fig. 6.

Goniastrea favulus: Nishihira & Veron, 1995: 347, 2 unnumbered figs.

Paragoniastrea sp.: Huang *et al*., 2014a: 13, fig. 6I.

Paragoniastrea sp. HENGE: Nomura *et al*., 2016: 11; Nomura, 2016b: 44, figs. A-F, 45, figs. A-F.

Specimens. AMBL-JSCT 27•74, Oshima, depth 4 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 28, Kuwashima, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 61, Katashima, depth 6 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 83•84•85, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. AMBL-JSCT 89, Haruhae, depth 2 m, coll. K. Nomura, 6 Oct. 2009. BIK-C-318, Haruhae, depth 4 m, coll. T. Mezaki, 6 Oct. 2009. KS-AMA09-13, Oshima, depth 7 m, coll. K. Shimoike, 5 Oct. 2009. KI-AMK2019-03, Tsutsumase, depth 8.2 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-11•2019-15, Maruse, depth 6.0 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-16, Oshima, depth 8.0 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-26•2019-41, Tsurusaki, depth 6.0-6.8 m, coll. K. Ito, 10 Oct. 2019. KS-AMK1910, Maruse, depth 9.0 m, coll. H. Yokochi, 9 Oct. 2019.

Remarks. This species may be undescribed, being closely related to *Paragoniastrea deformis*.

Genus ***Physophyllia*** Duncan, 1884
Physophyllia ayleni Wells, 1935
Japanese name: Umibara
(Figs. 20J-O)

Physophyllia ayleni Wells, 1935: 342, pl. 14, figs. 1-3 [Nagasaki, Japan]; Nishihira & Veron, 1995: 280, 2 unnumbered figs.; Huang *et al*., 2014b: 336, fig. 23; Sugihara *et al*., 2015: 155, 3 figs.; Nomura, 2016b: 46, figs. A-F, 47, figs. A-F.

Pectinia ayleni: Veron, 2000: vol. 2, 352, figs. 1-6.

Specimens. AMBL-JSCT 44, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. BIK-C-307, Satsuki, depth 10 m, coll. T. Mezaki, 6 Oct. 2009. CMNH-ZG 05560, Satsuki, depth 5-10 m, coll. H. Tachikawa, 6 Oct. 2009. CMNH-ZG 05575, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009.

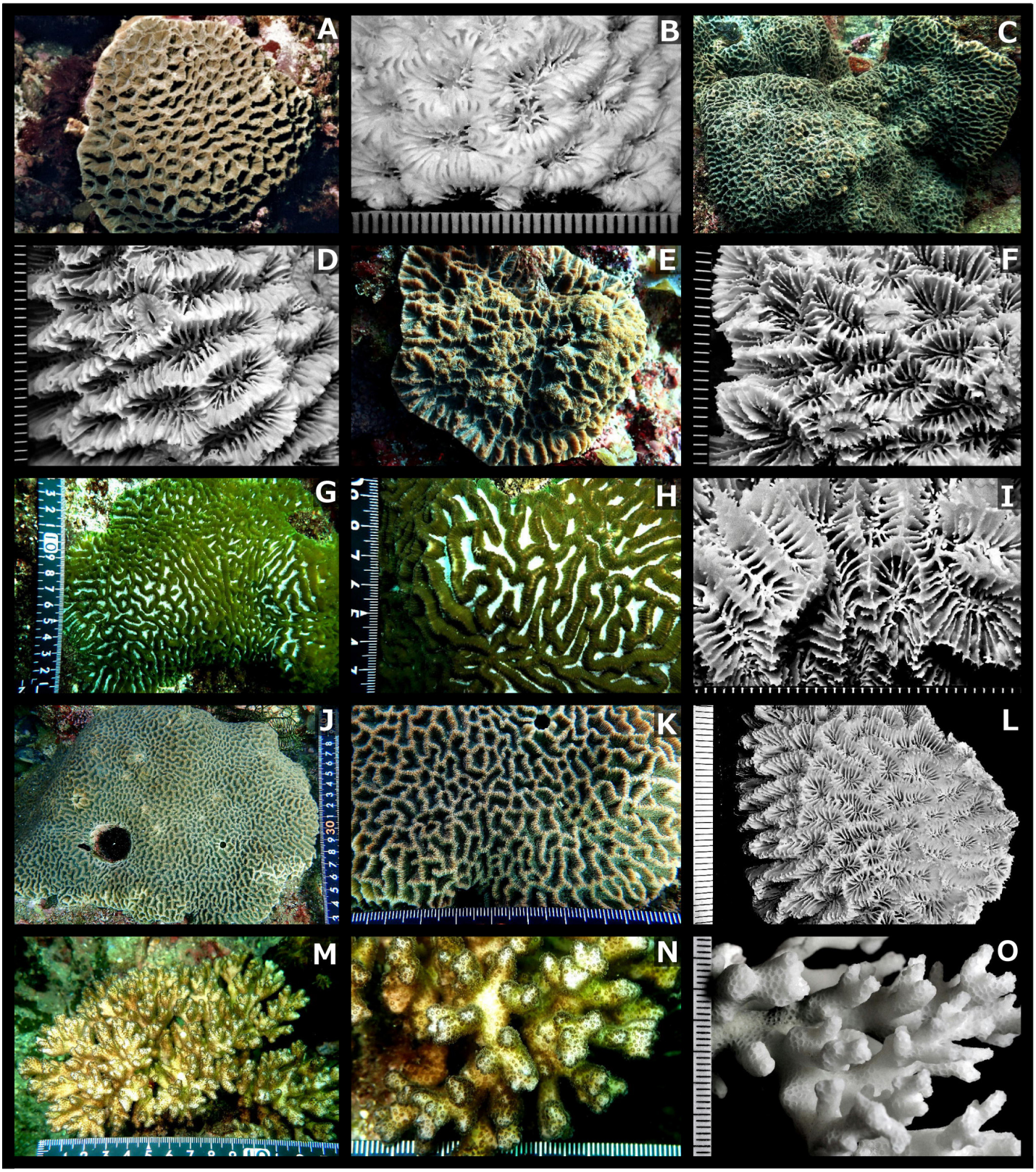

Fig. 21 A-F, *Platygyra contorta* Veron, 1990: A, B, AMBL-JSCT 40, Katashima, depth 5 m, C, D, KI-AMK2019-10, Maruse, depth 6.0 m; E, F, KI-AMK2019-17, Oshima, depth 8.1 m. G-I, *Platygyra daedalea* (Ellis & Solander, 1786), AMBL-JSCT 73, Oshima, depth 4 m. J-L, *Platygyra sinensis* (Milne Edwards & Haime, 1849), GSH-AMK005, Tsutsumase, depth 5.2 m. M-O, *Pocillopora damicornis* (Linnaeus, 1758), AMBL-JSCT 112, Satsuki, depth 6.0 m. Scale marks: 1 mm.

Genus ***Platygyra*** Ehrenberg, 1834
Platygyra contorta Veron, 1990
Japanese name: Chijimi-nousango
(Figs. 21A-F)

Platygyra contorta Veron, 1990: 145, figs. 51, 52 [not described]; Nishihira & Veron, 1995: 355, 4 unnumbered figs.; Veron, 2000: vol. 3, 188 (part), fig. 6; Nomura, 2016b: 48, figs. A-F.

Specimens. AMBL-JSCT 40, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. KS-AMA09-22, Satsuki, depth 8 m, coll. K. Shimoike, 6 Oct. 2009. KI-AMK2019-10, Maruse, depth 6.0 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-17•2019-20, Oshima, depth 8.1-8.5 m, coll. K. Ito, 10 Oct. 2019.

Platygyra daedalea (Ellis & Solander, 1786)
Japanese name: Hira-nousango
(Figs. 21G-I)

Madrepora daedalea Ellis & Solander, 1789: 163, pl. 46, fig. 1 [Fiji].

Platygyra daedalea: Veron, Pichon & Wijsman-Best, 1977: 98, figs. 190-196; Nishihira & Veron, 1995: 350, 4 unnumbered figs.; Veron, 2000: vol. 3, 191, figs. 5-8; Huang *et al*., 2014b: 338, figs. 24D-F; Nomura, 2016b: 49, figs. A-F.

Specimen. AMBL-JSCT 73, Oshima, depth 4 m, coll. K. Nomura, 10 Oct. 2019.

Platygyra sinensis (Milne Edwards & Haime, 1849)
Japanese name: Shina-nousango
(Figs. 21J-L)

Astoria sinensis Milne Edwards & Haime, 1849a: 298 [China Sea].

Platygyra sinensis: Veron, Pichon & Wijsman-Best, 1977: 105, figs. 201-206; Nishihira & Veron, 1995: 352, 2 unnumbered figs.; Veron, 2000: vol. 3, 186, figs. 1-5; Huang *et al*., 2014b: 338, figs. 24G-I.

Specimen. GSH-AMK005, Tsutsumase, depth 5.2 m, coll. G. Shimada, 9 Oct. 2019.

Family Pocilloporidae Gray, 1840
Genus ***Pocillopora*** Lamarck, 1816
Pocillopora damicornis (Linnaeus, 1758)
Japanese name: Hanayasaisango
(Figs. 21M-O)

Millepora damicornis Linnaeus, 1758: 791 [Oceanus Asiatico (probably Indonesia)].

Pocillopora damicornis: Veron & Pichon, 1976: 45, figs. 52-68; Veron, 2000: vol. 2, 26, figs. 1-9; Nishihira & Veron, 1995: 34, 3 unnumbered figs.; Wallace et al., 2009: 24, figs. 4H, 9; Nomura, 2016b: 3, figs. A-F.

Specimens. AMBL-JSCT 112, Satsuki, depth 6 m, coll. K. Nomura, 11 Oct. 2019. GSH-AMK009, Oshima, depth 7.0 m, coll. G. Shimada, 10 Oct. 2019. KI-AMK2019-22, Oshima, depth 4.0 m, coll. K. Ito, 10 Oct. 2019.

Genus ***Stylophora*** Schweigger, 1820
Stylophora pistillata (Esper, 1797)
(Japanese name: Shougasango)
(Figs. 22A-C)

Madrepora pistillata Esper, 1797: 73, pl. 60, figs. 1, 2 [not recorded].

Stylophora pistillata: Veron & Pichon, 1976: 66, figs. 133-150; Veron, 2000: vol. 2, 58, figs. 1-10; Nishihira & Veron, 1995: 42, 4 unnumbered figs.; Nomura, 2016b: 4, figs. A-F.

Stylophora aff. *pistillata*: Sugihara et al., 2015: 163, 3 unnumbered figs.

Specimens. AMBL-JSCT 139, Tsurusaki, depth 5 m, coll. G. Shimada, 10 Oct. 2019. GSH-AMK015, Gakenoshita, depth 9.2 m, coll. G. Shimada, 11 Oct. 2019.

Family Psammocoridae Chevalier & Beauvais, 1987
Genus ***Psammocora*** Dana, 1846
Psammocora albopicta Benzoni, 2006
(Japanese name: Berubettosango)
(Figs. 22D-I)

Psammocora superficialis: Veron & Pichon, 1976: 27, figs. 25, 26; Nishihira & Veron, 1995: 199, 4 unnumbered figs.

Psammocora albopicta Benzoni, 2006: 51, figs. 1-5 [Kuwait]; Wallace *et al*., 2009: 43, figs. 22C, D; Nomura, 2016b: 7, figs. A-F.

Specimens. AMBL-JSCT 5, Kuwashima, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 47, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. AMBL-JSCT 59, Katashima, depth 6 m, coll. K. Nomura, 5 Oct. 2009. AMBL-JSCT 78, Satsuki, depth 5 m, coll. K. Nomura, 6 Oct. 2009. HY-HC19-031, Maruse, depth 9.0 m, coll. H. Yokochi, 9 Oct. 2019. KI-AMK2019-14, Maruse, depth

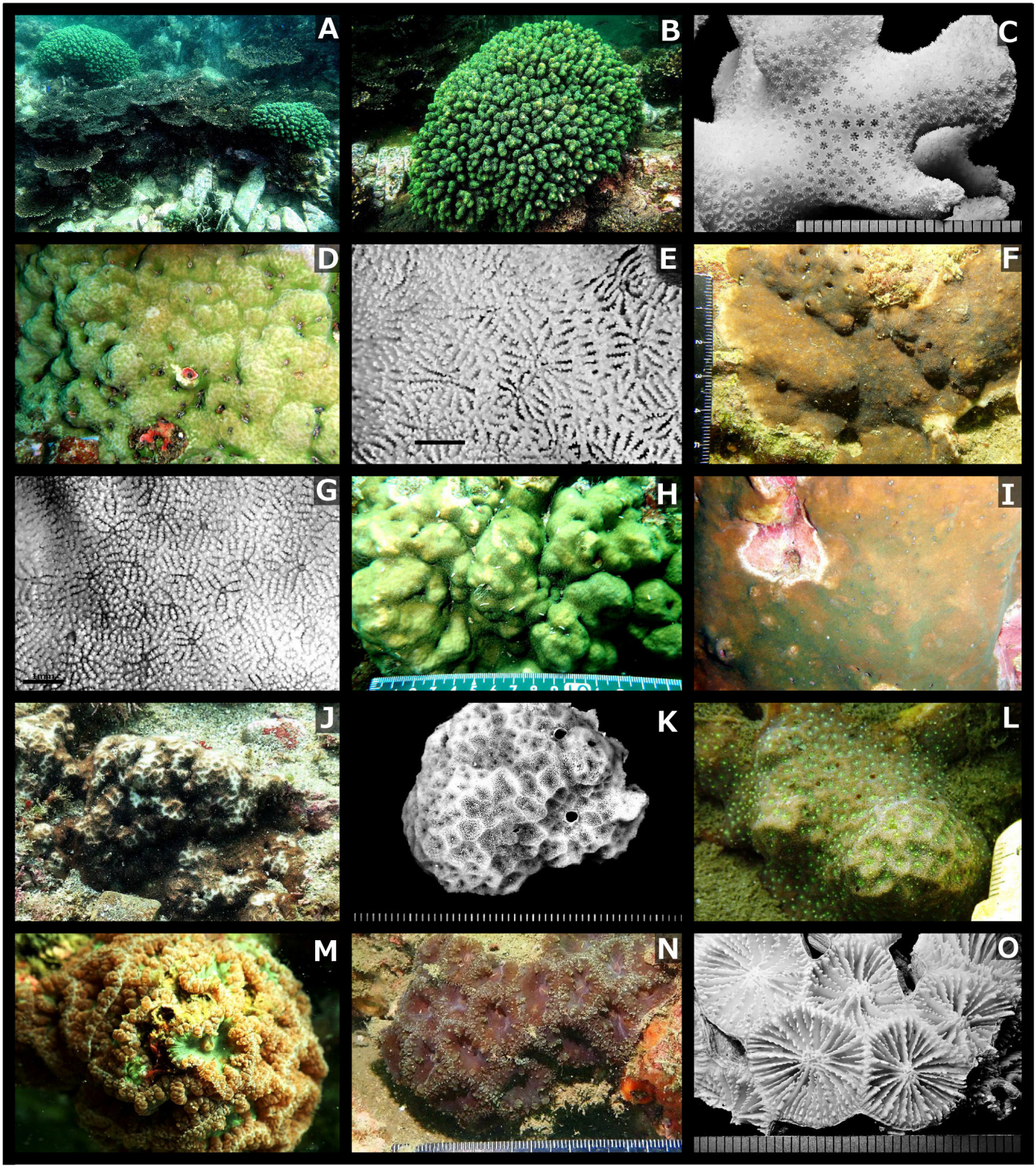

Fig. 22 A-C, *Stylophora pistillata* (Esper, 1797), AMBL-JSCT 139, Tsurusaki, depth 5 m. D-I, *Psammocora albopicta* Benzoni, 2006: D, E, AMBL-JSCT 59, Katashima, depth 6 m; F, G, MIY-HM2019-030, Gakenoshita, depth 16.5 m; H, no specimen, Tsutsumase, depth 6 m; I, no specimen, Oshima, depth 8 m. J-L, *Psammocora profundacella* Gardiner, 1898: J, K, KI-AMK2019-05, Tsutsumase, depth 8.2 m; L, YFK2070 191010-12, Haruhae, depth 9.4 m. M-O, *Blastomussa vivida* Benzoni, Arrigoni & Hoeksema, 2014: M, AMBL-JSCT 120, Satsuki, depth 7.5 m; N, O, GSH-AMK013, Haruhae, depth 11.8 m. Scale marks and bars: 1 mm.

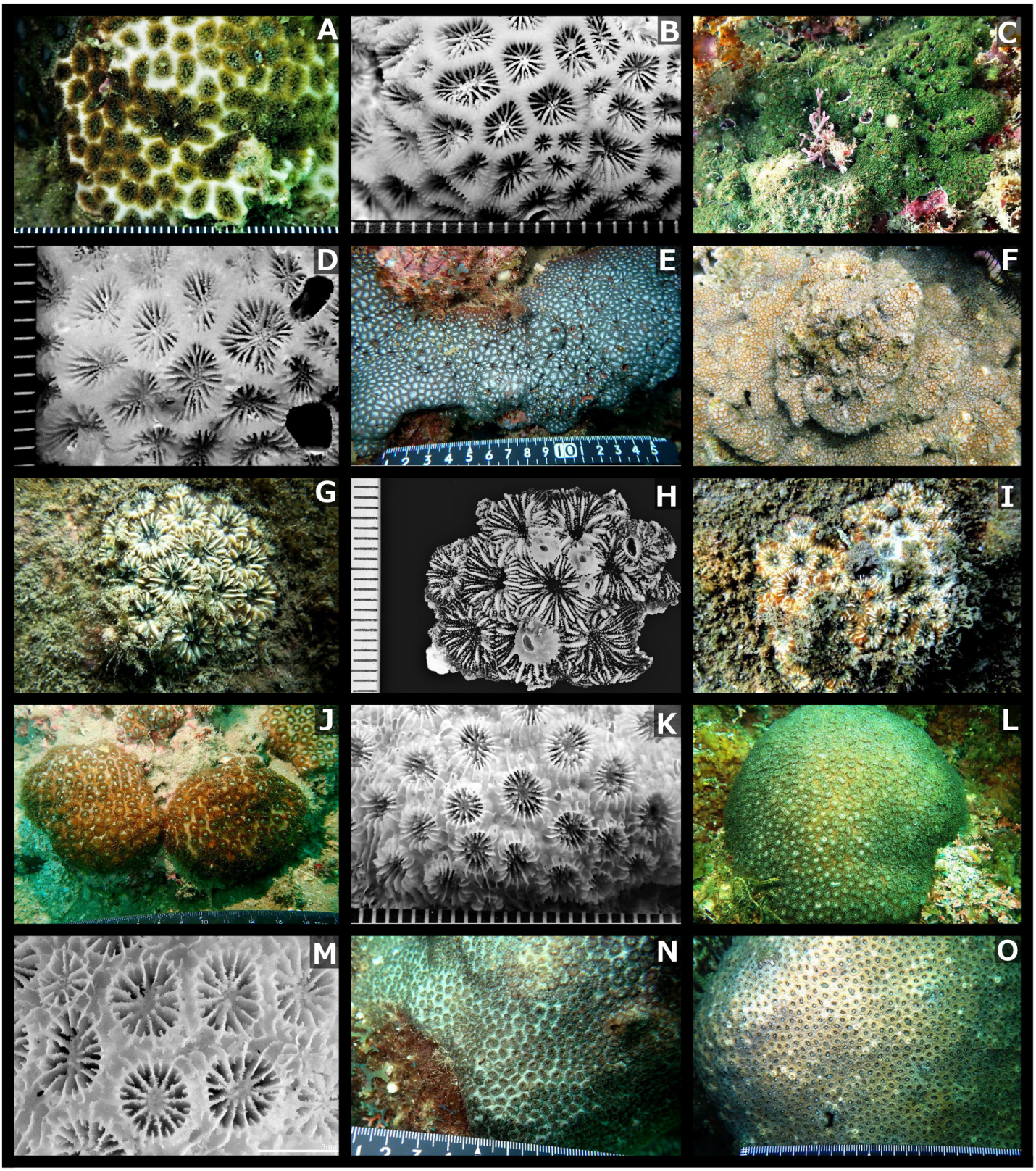

Fig. 23 A-F, *Leptastrea* sp. ATSUGI: A, B, AMBL-JSCT 113, Satsuki, depth 5.0 m; C, D, KI-AMK2019-12, Tsutsumase, depth 5.9 m; E, no specimen, Oshima, depth 5 m; F, no specimen, Haruhae, depth 5 m. G-I, *Oulastrea crispata* (Lamarck, 1816); G, H, CMNH-ZG 05578, Haruhae, depth 2 m; I, no specimen, Haruhae, depth 1 m. J-O, *Plesiastrea versipora* (Lamarck, 1816): J, K, KS-AMK1912, Yatagasone, depth 12.5 m; L, M, MIY-HM2019-008, Tsutsumase, depth 7.4 m; N, no specimen, Oshima, depth 10 m; O, no specimen, Haruhae, depth 6 m. Scale marks: 1 mm.

6.4 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-45•2019-47, Gakenoshita, depth 16.3-16.8 m, coll. K. Ito, 11 Oct. 2019. MIY-HM2019-009•2019-012, Maruse, depth 7.5-9.1 m, coll. H. Matsumoto, 9 Oct. 2019. MIY-HM2019-030, Gakenoshita, depth 16.5 m, coll. H. Matsumoto, 11 Oct. 2019.

Psammocora profundacella Gardiner, 1898
(Japanese name: Amimesango)
(Figs. 22J-L)

Psammocora profundacella Gardiner, 1898: 557, pl. 45, fig. 3 [Funafuti, Tuvalu]; Veron & Pichon, 1976: 35, figs. 41-44; Nishihira & Veron, 1995: 202, 3 unnumbered figs.; Veron, 2000: vol. 2, 149, figs. 1-2; Wallace *et al*., 2009: 43, figs. 4B, 23A, B; Nomura, 2016b: 8, figs. A-F.

Specimens. AMBL-JSCT 11, Kuwashima, coll. S. Nojima & K. Nomura, 12 Nov. 1993. CMNH-ZG 05570, Haruhae, depth 5-7 m, coll. H. Tachikawa, 6 Oct. 2009. KI-AMK2019-05, Tsutsumase, depth 8.2 m, coll. K. Ito, 9 Oct. 2019. YFK2070 191010-12, Haruhae, depth 9.4 m, coll. Y. Kitano, 10 Oct. 2019.

Vacatina Incertae Sedis
Genus ***Blastomussa*** Wells, 1968
Blastomussa vivida Benzoni, Arrigoni & Hoeksema, 2014
Japanese name: Oo-tabasango
(Figs. 22M-O)

Blastomussa wellsi: Veron & Pichon, 1980: 236, fig. 394; Nishihira & Veron, 1995: 287, 4 unnumbered figs.; Wallace *et al*., 2009: 94, fig. 60.

Blastomussa vivida Benzoni, Arrigoni & Hoeksema, 2014: 364, figs. 1M-O, 2, 3, 7E, 8E, 9E [New Caledonia]; Sugihara *et al*., 2015: 180, 3 unnumbered figs.; Nomura, 2016b: 65, figs. A-F.

Specimens. AMBL-JSCT 120, Satsuki, depth 7.5 m, coll. K. Ito, 11 Oct. 2019. GSH-AMK013, Haruhae, depth 11.8 m, coll. G. Shimada, 10 Oct. 2019. KCA19D0060, Haruhae, depth 11.7 m, coll. N. Dewa, 11 Oct. 2019.

Genus ***Leptastrea*** Milne Edwards & Haime, 1849
Leptastrea sp. ATSUGI
(Japanese name: Atsugi-rurisango)
(Figs. 23A-F)

Leptastrea pruinosa: Nishihira & Veron, 1995: 372 (part), lower fig. in p. 371.

Leptastrea aff. *pruinosa*: Sugihara *et al*., 2015: 182, 3 unnumbered figs.

Leptastrea sp. ATSUGI: Nomura et al., 2016: 12; Nomura, 2016b: 67, figs. A-F.

Specimens. AMBL-JSCT 113, Satsuki, depth 5 m, coll. K. Nomura, 11 Oct. 2019. GSH-AMK006, Tsutsumase, depth 5.4 m, coll. G. Shimada, 9 Oct. 2019. KI-AMK2019-07•2019-12, Tsutsumase, depth 5.9-7.1 m, coll. K. Ito, 9 Oct. 2019. KI-AMK2019-29, Tsurusaki, depth 3.1 m, coll. K. Ito, 10 Oct. 2019. KI-AMK2019-33, Haruhae, depth 1.9 m, coll. K. Ito, 10 Oct. 2019. KS-AMA09-39, Satsuki, depth 3 m, coll. K. Shimoike, 7 Oct. 2009. MIY-KK2009-4, Haruhae, depth 4 m, coll. K. Kajiwara, 6 Oct. 2009.

Remarks. This species may be undescribed which is closely related to *Leptastrea pruinosa* Crossland, 1952.

Genus ***Oulastrea*** Milne Edwards & Haime, 1848
Oulastrea crispata (Lamarck, 1816)
(Japanese name: Kikumeishimodoki)
(Figs. 23G-I)

Astrea crispata Lamarck, 1816: 265 [Indian Ocean].

Oulastrea crispata: Nishihira & Veron, 1995: 367, 3 unnumbered figs.; Veron, 2000: vol. 3, 229, figs. 3-5; Nomura, 2016b: 68, figs. A-F.

Specimens. CMNH-ZG 05565, Satsuki, depth 10 m, coll. H. Tachikawa, 6 Oct. 2009. CMNH-ZG 05578, Haruhae, depth 2 m, coll. H. Tachikawa, 6 Oct. 2009.

Genus ***Plesiastrea*** Milne Edwards & Haime, 1848
Plesiastrea versipora (Lamarck, 1816)
(Japanese name: Komarukikumeishi)
(Figs. 23J-O)

Astraea versipora Lamarck, 1816: 264 [Indian Ocean].

Plesiastrea versipora: Veron, Pichon & Wijsman-Best, 1977: 149, figs. 284-294; Nishihira & Veron, 1995: 368, 4 unnumbered figs.; Veron, 2000: vol. 3, 226, figs. 1-7; Wallace *et al*., 2009: 80, figs. 6A, 50; Nomura, 2016b: 69, figs. A-F.

Specimens. AMBL-JSCT 6, Kuwashima, depth 10 m, coll. S. Nojima & K. Nomura, 12 Nov. 1993. AMBL-JSCT 33, Katashima, coll. S. Nojima & K. Nomura, 2 Mar. 1994. IORD-HC09-2, Satsuki, depth 9 m, coll. H. Yokochi, 6 Oct.

Table 1. List of zooxanthellate scleractinian corals collected from the northern (Tomioka, site 1-3) and the southern (Ushibuka, site 4-10) areas of Amakusa. Sites: 1-Tsutsumase; 2-Maruse; 3-Yatagasone; 4-Tsurusaki; 5-Haruhae; 6-Satsuki; 7-Gakenoshita; 8-Ooshoma; 9-Kuwashima; 10-Katashima. +*, observation only.

	Tomioka sites			Ushibuka sites							
	1	2	3	4	5	6	7	8	9	10	Total
REFERTINA											
ACROPORIDAE											
Acropora glauca	+				+	+		+			+
Acropora hyacinthus	+				+	+	+	+		+	+
Acropora japonica	+				+	+		+		+	+
Acropora muricata				+	+	+					+
Acropora nasuta								+			+
Acropora pruinosa comlex			+	+	+	+	+	+			+
Acropora solitaryensis	+				+	+				+	+
Acropora sp. ENTAKU	+				+	+					+
Acropora sp. aff. *willisae*	+	+				+	+	+	+		+
Alveopora japonica complex	+	+				+	+	+			+
Montipora millepora							+				+
Montipora mollis						+	+	+	+	+	+
Montipora peltiformis							+		+	+	+
Montipora sp. ARAME											+
Montipora sp. HONDOTOGE					+			+	+		+
Montipora sp. KOMON							+	+		+	+
AGARICIIDAE											
Leptoseris mycetoseroides	+		+			+	+	+			+
Pavona cactus							+		+*		+
Pavona decussata					+	+		+			+
Pavona explanulata					+						+
DENDROPHYLLIDAE											
Turbinaria frondens				+		+		+			+
Turbinaria mesenterina					+	+					+
Turbinaria peltata	+				+	+					+
EUPHYLLIDAE											
Catalaphyllia jardinei						+					+
Fimbriaphyllia ancora				+	+	+	+				+
PORITIDAE											
Goniopora djiboutiensis complex	+	+		+	+	+	+	+	+		+
Goniopora pendulus						+					+
Porites heronensis complex	+	+	+	+	+	+	+	+			+
Porites lobata							+				+
Porites lutea	+				+	+	+	+		+	+
Porites sp.						+					+
VACATINA											
ASTEROCOENIIDAE											
Stylocoeniella guentheri						+		+	+		+
COSCINARAEA											
Coscinaraea columna				+							+
Coscinaraea monile				+	+	+				+	+
FUNGIIDAE											
Cycloseris explanulata		+			+		+				+
Lithophyllon undulatum					+	+					+
LOBOPHYLLIIDAE											
Acanthastrea hemprichii	+			+	+	+			+		+
Cynarina lacrymalis				+	+	+	+				+
Echinophyllia aspera					+	+			+		+
Homophyllia bowerbanki					+	+	+			+	+
Lobophyllia hemprichii						+					+
Lobophyllia radians								+		+*	+
Lobophyllia robusta							+	+			+
Micromussa amakusensis	+	+			+	+		+			+
Micromussa lordhowensis complex					+	+					+
Oxypora lacera							+				+

Table 1 continued.

	Tomioka sites			Ushibuka sites							
	1	2	3	4	5	6	7	8	9	10	Total
REFERTINA											
MERULINIDAE											
Astrea curta								+*		+*	+*
Caulastraea tumida					+						+
Coelastrea aspera	+				+	+		+		+	+
Cyphastrea japonica	+		+		+	+	+	+			+
Cyphastrea serailia	+		+			+	+	+			+
Dipsastraea pallida					+	+		+	+		+
Dipsastraea speciosa	+			+	+	+	+	+	+	+*	+
Dipsastraea sp. HONDOABARE						+	+			+	+
Dipsastraea sp. TSUKIGATA	+							+*		+*	+
Favites halicora					+	+	+				+
Favites pentagona	+									+	+
Favites rotundata complex				+					+		+
Favites valenciennesi	+				+	+		+		+	+
Favites virens				+	+	+				+	+
Favites sp. NISETAKAKU					+	+				+	+
Favites spp.					+		+				+
Hydnophora exesa	+				+					+	+
Mycedium elephantotus					+	+					+
Oulophyllia crispa							+				+
Paragoniastrea australensis				+	+	+					+
Paragoniastrea deformis	+	+		+	+	+		+		+	+
Paragoniastrea sp. HENGE	+	+		+	+	+		+		+	+
Physophyllia ayleni					+	+			+		+
Platygyra contorta		+				+		+		+	+
Platygyra daedalea								+			+
Platygyra sinensis	+										+
POCILLOPORIDAE											
Pocillopora damicornis						+		+			+
Stylophora pistillata				+							+
PSAMMOCORIDAE											
Psammocora albopicta	+	+				+	+		+	+	+
Psammocora profundacella	+				+				+		+
VACATINA *Incertae Sedis*											
Blastomussa vivida					+	+					+
Leptastrea sp. ATSUGI	+			+	+	+					+
Oulastrea crispata					+	+					+
Plesiastrea versipora	+		+			+			+	+	+
total	29	10	6	18	47	54	26	32	16	25	80

2009. KS-AMK1912, Yatagasone, depth 12.5 m, coll. K. Shimoike, 9 Oct. 2019. MIY-HM2019-008, Tsutsumase, depth 7.4 m, coll. H. Matsumoto, 9 Oct. 2019. YFK2058 191009-10, Yatagasone, depth 12.0 m, coll. Y. Kitano, 9 Oct. 2019.

DISCUSSION

Zooxanthellate scleractinian coral fauna of Amakusa

Zooxanthellate scleractinian corals collected from Amakusa consisted of 80 species representing 12 families and 40 genera (Tab. 1). Dominant families were Merulinidae (33% of all, 26 species), Acroporidae (21%, 16 species) and Lobophylliidae (13%, 10 species). Twelve species remained unidentified, as they did not match any previously reported descriptions and could represent Japanese endemic species. Many of the identified species also had taxonomic difficulties. These taxonomic problems as well as the existence of unidentified species highlight the need for reviewing and updating coral taxonomy in Japan.

Comparing the coral fauna between the two sampling areas (north: Tomioka, south: Ushibuka) of Amakusa, almost all species were collected from Ushibuka, but less than half from Tomioka (Table 1). Apparently, species diversity in Ushibuka was considerably higher than in Tomioka. In addition, Haruhae and Satsuki in Ushibuka area had the highest species diversity among the sites. Nojima (2004) also found higher coral diversity in Ushibuka than in Tomioka. The difference between the two areas could be due to unequal sampling sites as well as varying temperature conditions and/or geographical complexity.

While Nishihira & Veron (1995) recorded 98 species of zooxanthellate scleractinian corals from Amakusa, 24 of those were not recorded in the current study. Also, combining our study with Nishihira & Veron (1995), the total species amounted to 123, but only 49 species (40%) turned out to be common. The low faunal similarity between the two studies could arise from differences in taxonomic nomenclature and recognition of the species identification. For example, Nishihira & Veron (1995) listed *Acanthastrea bowerbanki* Milne Edwards & Haime, 1857 and *A. hillae* Wells, 1955, but Huang et al. (2016) synonymized the later under the former and transferred the genus to *Homophyllia* Brüggemann, 1877. In addition, we listed 5 species complexes (e.g. *Acropora hyacinthus* complex; Suzuki, *et al*. 2016) and suspected undescribed species. A reliable comparison between this study and the previous ones is therefore quite difficult, and further examination is needed to update the taxonomic status of coral fauna of the Amakusa area.

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