

A REVISED CATALOGUE OF SCLERACTINIAN CORALS FROM THE
SOUTHWEST COAST OF SIKOKU IN THE COLLECTIONS OF
THE EHIME UNIVERSITY AND THE EHIME
PREFECTURAL MUSEUM, MATUYAMA¹⁾

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With 1 Text-figure

This paper presents a revised catalogue of Scleractinian corals collected from the southwest coast of Sikoku and are deposited in the Biological Institute, Ehime University and the Ehime Prefectural Museum, Matuyama City.

The coral collection in the Biological Institute, Ehime University, together with other anthozoans and remarkable shallow-water invertebrates, was made as a main part of marine biological projects carried out by personnel of the same University in July 1951, July 1961 and August 1964 around the so-called "Uwa Sea" and "Inan Coast" of Ehime Prefecture, facing the Bungo Channel.

Details on the distribution of reef corals and their abundance at respective localities in the southernmost area of the same coast observed during the underwater survey of 1964 have been given by Dr. Ito (1965) with ecological notes.

The majority of the coral collection in the Ehime Prefectural Museum was made mainly by Mr. Kazuo KUROHARA of Tosa-simizu City around the southernmost coast of Kōti Prefecture near the cape Asizuri-saki, and also contains some non-reef-building, ahermatypic corals dredged from the coral grounds off Asizuri-saki or Tosa Bay.

Among the Scleractinian corals contained in these collections most of very large specimens which were not made available to me for study were identified basing solely on photographs. In cataloguing these collections, as to the systematic nomenclature, the system used by VAUGHAN and WELLS (1943)

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and WELLS (1956) is here essentially followed. Most of the species involved, which are common in Japanese seas, were well illustrated in the serial monographs of Japanese corals written by YABE, SUGIYAMA and EGUCHI (1936, 1941 and 1942b) as cited in the references at the end. In addition, those in the collection of the Ehime Prefectural Museum have been illustrated by OCHI and OTA (1962~1964) under the title "stony corals I-IV" in a regional

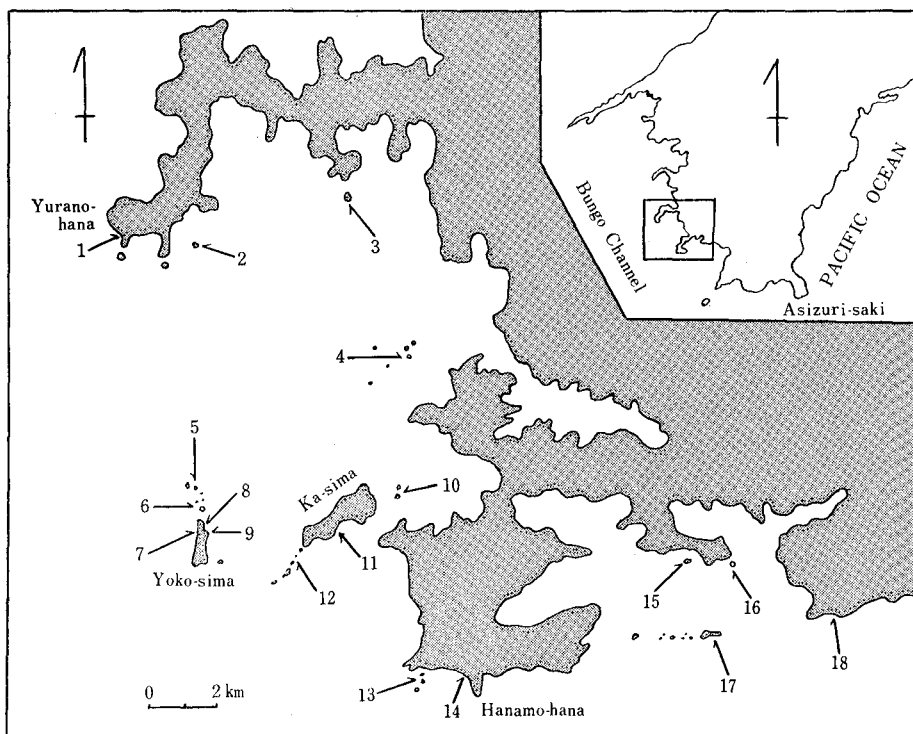


Fig. 1. Map of the Inan Coast (Ehime Prefecture), showing the location of places where corals were collected or observed by the party of the Ehime University.

1, Wave-cut cave (Ebino-udo) at Yurano-hana ; 2, Iwasi-bae ; 3, Sioko-zima ; 4, Mituhatanda-zima ; 5, Itino-bae ; 6, Utidome-bae ; 7, Wave-cut cave (Hukinuke-dô) at Yoko-sima ; 8, Wave-cut cave (Nakazaki-dô) at Yokosima ; 9, Naka-zaki at Yoko-sima ; 10, Kuro-bae ; 11, Wave-cut cave (Kasimano-ana) at Ka-sima ; 12, Naga-bae ; 13, Suzuki-bae ; 14, Wave-cut cave (Hanamo-dô) at Hanamo hana ; 15, Seno-hama ; 16, Tengi-bana ; 17, Ategi-sima ; 18, Wave-cut cave (Kurosaki-dô) at Kuro-saki.

natural history magazine "Nature of Ehime", Vol. IV (nos. 11 and 12), Vol. V (no. 1) and Vol. VI (nos. 4 and 6) without descriptive notes.

The depositories of specimens involved are abbreviated as follows :

E. P. M.—Ehime Prefectural Museum, Matuyama.

E. U.—Biological Institute, Ehime University.

S. M. B. L.—Seto Marine Biological Laboratory, Sirahama.

Order SCLERACTINIA

Suborder ASTROCOENIINA

Family Pocilloporidae GRAY 1842

Genus *Pocillopora* LAMARCK 1816

Pocillopora damicornis (LINNAEUS) 1758

(Jap. name: *Hanayasai-sango*)

VAUGHAN, 1918, p. 75, pl. figs. 1-1a (*Pocillopora bulbosa*); VAUGHAN, 1918, p. 76, pl. 21, fig. 2 (*P. damicornis*); HOFFMEISTER, 1925, p. 15, pl. 1, fig. 1; FAUSTINO, 1927, p. 102; YABE, SUGIYAMA and EGUCHI, 1936, p. 12, pl. 4, figs. 3-5; YABE, SUGIYAMA and EGUCHI, 1936, p. 13, pl. 5, fig. 4, pl. 7, fig. 1 (*P. d. bulbosa*); CROSSLAND, 1952, p. 110; WELLS, 1954, p. 412, pl. 99, fig. 2; STEPHENSON and WELLS, 1956, p. 11; NEMENZO, 1964, p. 212, pl. 8, fig. 2.

Occurrence : E. P. M.—Asizuri-saki, 5 m.

E. U.—Suzuki-bae, 8 m (one specimen, 11/VIII 1964); Seno-hama, 5 m (one specimen, 11/VIII 1964).

Distribution : Widespread throughout tropical Indo-Pacific; eastward to Hawaii, northward to Honsyu.

Genus *Stylophora* SCHWEIGER 1819

Stylophora pistillata (ESPER) 1797

(Jap. name: *Syôga-sango*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 15, pl. 3, fig. 1; CROSSLAND, 1952, p. 107, pl. 2, fig. 5; WELLS, 1954, p. 411; NEMENZO, 1964, p. 204, pl. 4, fig. 1.

Occurrence : E. P. M.—Asizuri-saki, 19 m.

E. U.—Oitukami-zima (one specimen, 21/VII 1951).

Distribution : Widespread from Red Sea eastward to Samoa Islands, northward to Sikoku.

Family Acroporidae VERRILL 1902

Genus *Acropora* OKEN 1815

Acropora sp. [*A. cf. leptocyathus* (BROOK) 1891]

(Jap. name: *Table sango*; *Entaku-midoriisi*)

BROOK, 1891, p. 463 (*Madrepora leptocyathus*); BROOK, 1893, p. 159, pl. 16, fig. C (*Madrepora leptocyathus*); HOFFMEISTER, 1925, p. 67, pl. 17, figs. 1a-1d (*Acropora leptocyathus*).

Occurrence : E. P. M.—Tosa-simizu, 10-50 m.

E. U.—Ka-sima (one specimen, VII 1951); Sioko-zima, 8 m (one specimen, 10/VIII 1964); Mituhatanda-zima, 6 m (one specimen, 10/VIII 1964); Naga-bae, 7 m (one specimen, 10/VIII 1964); Tengi-bana, 5 m (one specimen, 12/VIII 1964).

Remarks: *Acropora leptocyathus* (BROOK) has been known only from Samoa. Recently WELLS (1954, p. 425) synonymized this species to *A. humilis* (DANA), 1846 with BROOK's *gemmifera*, *fruticosa*, *guppyi*, etc. and BRUEGGEMANN's *schzeriana* and REHBERG's *pelewensis*. If this is to be generally admitted, the so-called table-like acroporid with a central short stalk and fused round disc bearing a number of short erect branches on the upper surface only may probably represent a new species. Such acroporid is very common in shallow waters of Japan and on coral reefs of Ryukyu Islands.

Acropora pectinata (BROOK) 1892

(Jap. name: *Kusihada-midoriisi*; *Kusihada-edasango*)

BROOK, 1892, p. 460 (*Madrepora pectinata*); BROOK, 1893, p. 95, pl. 27, figs. D-E; VAUGHAN, 1918, p. 172, pl. 71, figs. 1-2 (*Acropora pectinata*); UTINOMI, 1956, p. 341, pl. 32, figs. 4-5 (*A. pectinata*).

Occurrence: E. U.—Ka-sima (4 specimens and fragments, VII 1953); Mituhatanda-zima, 5 m (one very large specimen, 10/VIII 1964); Hatanda-zima, 5 m (one very large specimen, 10/VIII 1964); Kuro-bae, 8 m (2 large specimens, 19/VIII 1964); Naga-bae, 8 m (one large specimen, 10/VIII 1964); Seno-hama, 5-10 m (one large specimen, 11/VIII 1964).

Remarks: WELLS (1954, p. 420) synonymized this species to *A. corymbosa* (LAMARCK) 1816.

Acropora squarrosa (EHRENBERG) 1834

(Jap. name: *Eda-midoriisi*; *Siba-midoriisi*)

EHRENBERG, 1834, p. 112 (*Heteropora squarrosa*); BROOK, 1893, p. 65 (*Madrepora squarrosa*); VAUGHAN, 1918, p. 184, pl. 83, figs. 2-2b (*Acropora squarrosa*); WELLS, 1954, p. 427, pl. 129, figs. 1-2.

Occurrence: E. P. M.—Tosa-simizu, 10-50 m.

E. U.—Ka-sima, 5 m (one large specimen and several fragments, VII 1953); Oitukami-zima (one fragment, 21/VII 1951); Ka-sima, 5 m (one specimen, 5/VIII 1964); Seno-hama, 10 m (one specimen, 11/VIII 1964); Kuro-saki, 5 m (one specimen, 11/VIII 1964).

Distribution: Red Sea northward to Honsyu, eastward to Marshall Islands.

Acropora humilis (DANA) 1846

(Jap. name: *Oyayubi-midoriisi*)

DANA, 1846, p. 483, pl. 31, fig. 4; pl. 41, fig. 4 (*Madrepora humilis*); WELLS, 1954, p. 425, pl. 100, fig. 1; pl. 126, figs. 1-6; pl. 127, figs. 3-4; pl. 128, figs. 3-5 (*Acropora humilis*—Synonymy); UTINOMI, 1956, p. 342, pl. 31, fig. 1 (*A. gemmifera*).

Occurrence : E. P. M.—Tosa-simizu, 10-50 m.

E. U.—Seno-hama, 5 m (2 specimens, 11/VIII 1964).

Distribution : Widespread from Red Sea, eastward to Tuamotu Archipelago, and northward to Sikoku.

Acropora surculosa (DANA) 1846

BROOK, 1893, p. 104 (*Madrepora surculosa*—Synonymy); CROSSLAND, 1952, p. 214, pl. 38, figs. 2-5 (*Acropora surculosa*); WELLS, p. 421, pl. 118, figs. 1-2; pl. 119, figs. 1-3 (*A. surculosa*).

Occurrence : E. P. M.—Tosa-simizu.

Distribution : West Pacific and Indian Oceans, eastward to Marshall Islands and Fiji Islands and northward to Sikoku.

Acropora syringodes (BROOK) 1892

BROOK, 1893, p. 177, pl. 33, fig. E (*Madrepora syringodes*); VAUGHAN, 1918, p. 185, pl. 83, figs. 1a-1d (*Acropora syringodes*); WELLS, 1954, p. 428, pl. 120, figs. 3-4; pl. 130, figs. 5-6 (*A. syringodes*).

Occurrence : E. P. M.—Tosa-simizu.

Distribution : Marshal Islands, Great Barrier Reef, Torres Strait.

Acropora formosa (DANA) 1846

BROOK, 1893, p. 43 (*Madrepora formosa*); HOFFMEISTER, 1925, p. 55, pl. 8, figs. 1-3b (*Acropora formosa*—Synonymy); FAUSTINO, 1927, p. 259, pl. 84, figs. 1-4; WELLS, 1954, p. 415, pl. 102, figs. 1-9; pl. 103, figs. 1-5; pl. 104, fig. 4 (*A. formosa*—Synonymy).

Occurrence : E. P. M.—Tosa-simizu.

Distribution : Tropical West Pacific. westward to Ceylon.

Genus *Astreopora* DE BLAINVILLE 1830

Astreopora myriophthalma (LAMARCK) 1816

(Jap. name : *Ana-sango*)

BERNARD, 1896, p. 87, pls. 25-26, pl. 33, fig. 9 (*Astreopora myriophthalma*—Synonymy); VAUGHAN, 1918, p. 146, pl. 60, figs. 5-5a; YABE and SUGIYAMA, 1941, p. 83, pl. 89, figs. 2-2c, pl. 92, figs. 1-2a (Synonymy); WELLS, 1954, p. 431, pl. 141, figs. 3-6 (Synonymy).

Occurrence : E. P. M.—Tosa-simizu.

Distribution: Red Sea, eastward to Fanning Island, northward to Japan.

Genus **Montipora** DE BLAINVILLE 1830

Montipora sp. [*M. cf. ramosa* BERNARD 1897]

BERNARD, 1897, p. 49, pl. 5, figs. 1-3; pl. 32, fig. 3 (*Montipora ramosa*); VAUGHAN, 1918, p. 150, pl. 62, figs. 1-3 (*M. ramosa*—Synonymy); STEPHENSON and WELLS, 1956, p. 20 (*M. divaricata*—Synonymy).

Occurrence: E. P. M.—Tosa-simizu.

Distribution: Indo-West-Pacific.

Suborder **FUNGIINA**

Family Agariciidae GRAY 1847

Genus **Pavona** LAMARCK 1816

Pavona decussata DANA 1847

(Jap. name: *Sikoro-sango*)

VAUGHAN, 1918, p. 136, pl. 56, figs. 1-1a (*Pavona cactus*); YABE, SUGIYAMA and EGUCHI, 1936, p. 56, pl. 39, figs. 4-6 (*P. decussata*); STEPHENSON and WELLS, 1956, p. 24 (Synonymy).

Occurrence: E. P. M.—Tosa-simizu, 10-30 m.

E. U.—Kasima (one specimen, VII 1951); Seno-hama, 6 m (one specimen and one fragment, 11/VIII 1964).

Distribution: Red Sea eastward to Fiji Islands and northward to Honsyu.

Pavona frondifera LAMARCK 1816

(Jap. name: *Konoha-sikoro-sango*)

HOFFMEISTER, 1925, p. 40, pl. 3, figs. 1a-1e (Synonymy); YABE, SUGIYAMA and EGUCHI, 1936, p. 57, pl. 40, figs. 1-3; WELLS, 1954, p. 441.

Occurrence: S. M. B. L.—Tosa-simizu.

Distribution: Indian Ocean, eastward to Fiji Islands and northward to Sikoku.

Family Fungiidae DANA 1848

Genus **Fungiacyathus** SARS 1872

Fungiacyathus symmetricus (POURTALÈS) 1871

(Jap. name: *Oki-kusabiraisi*)

ALCOCK, 1902, p. 37 (*Bathyactis symmetrica*); FAUSTINO, 1927, p. 213 (*B. symmetrica*); YABE and EGUCHI, 1942b, p. 137, pl. 12, fig. 5 (*B. symmetrica* and *B. palifera*); VAUGHAN and WELLS, 1943, p. 144, pl. 34, figs. 1, 1a and 4, 4a (*Fungiacyathus symmetricus*).

Occurrence : E. P. M.—Off Asizuri-saki, 120–300 m.

Distribution : All oceans, from 32 to 2900 fathoms (FAUSTINO).

Genus *Lithophylon* REHBERG 1892

Lithophylon lobata (VAN DER HORST) 1921

(Jap. name : *Kawara-sango*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 65, pl. 48, figs. 1-2; pl. 50, fig. 1; pl. 53, figs. 1-2; pl. 55, figs. 1-2 (*Podabacia elegans lobata* and formae—Synonymy); VAUGHAN and WELLS, 1943, p. 140, pl. 17, fig. 10 (*Lithophylon lobata*).

Occurrence : E. P. M.—Asizuri-saki.

Distribution : Indian Ocean, Japan (fairly common).

Family Micrabaciidae VAUGHAN 1905

Genus *Stephanophyllia* MICHELIN 1841

Stephanophyllia formosissima MOSELEY 1881

(Jap. name : *Hurui-sango*)

MOSELEY, 1881, p. 201, pl. 4, fig. 11; pl. 13, figs. 6-7; pl. 16, figs. 8-9; ALCOCK, 1902, p. 39; VAUGHAN, 1907, p. 146, pl. 44, figs. 2-2a; FAUSTINO, 1927, p. 244, pl. 77, figs. 7-8; YABE and EGUCHI, 1942b, p. 138 (Synonymy).

Occurrence : E. P. M.—Off Asizuri-saki, 120–300 m.

Distribution : East Indies, Philippines, Japan, Hawaiian Islands, 132–2900 m (Eguchi).

Family Poritidae GRAY 1842

Genus *Goniopora* DE BLAINVILLE 1830

Goniopora tenuidens (QUELCH) 1886

(Jap. name : *Oo-hanagasa-sango*)

QUELCH, p. 188, pl. 8, figs. 7-7b (*Rhodaraea tenuidens*); VAUGHAN, 1918, p. 186, pl. 84, figs. 1-2 (*Goniopora tenuidens*); FAUSTINO, 1927, p. 285, pl. 95, figs. 5-7 (*G. tenuidens*).

Occurrence : E. P. M.—Tosa-simizu, 0–10 m.

Distribution : Great Barrier Reef, Amboina, Southern Philippines.

Goniopora planulata (EHRENBERG) 1834(Jap. name: *Hanagasa-sango*)

EHRENBERG, 1834, p. 95 (*Astraea planulata*); KLUNZINGER, 1879, p. 45, pl. 8, fig. 23; pl. 5, fig. 24 (*Goniopora planulata*); BERNARD, 1903, p. 100, pl. 8, figs. 1-2; pl. 13, fig. 12 (*Goniopora* Red Sea 1—Synonymy); BEDOT, 1907, p. 267, pls. 43-44 (*G. lobata*); CROSSLAND, 1948, p. 200, pl. 12, upper fig. and pl. 13, lower fig. (*G. lobata*); CROSSLAND, 1952, p. 232, pl. 47, figs. 1-3 (*G. lobata*); STEPHENSON and WELLS, 1956, p. 27 (*G. lobata*).

Occurrence : E. P. M.—Asizuri-saki, 0-10 m.

Distribution : South Africa, Red Sea, eastward to Great Barrier Reef and northward to Honsyu.

Genus *Porites* LINK 1807*Porites tenuis* VERRILL 1866(Jap. name: *Hama-sango*)

VERRILL, Proc. Essex Inst., V, p. 25; VAUGHAN, 1907, p. 212, pl. 90, figs. 1-1a; FAUSTINO, 1927, p. 297, pl. 99, figs. 1-2.

Occurrence : E. P. M.—Tosa-simizu.

E. U.—Hiburi-zima (one specimen, VIII 1951).

Distribution : Japan, Ryukyu (Loo Choo) Islands, China Sea, Philippines and Hawaiian Islands.

Suborder *FAVIINA*

Family Faviidae GREGORY 1900

Genus *Caulastraea* DANA 1848*Caulastraea tumida* MATTHAI 1928(Jap. name: *Tabane-sango*)

MATTHAI, 1928, p. 275, pl. 72, figs. 5-6; YABE, SUGIYAMA and EGUCHI, 1936, p. 19, pl. 10, figs. 6-7; pl. 13, figs. 1-2 (Synonymy).

Occurrence : E. P. M.—Tosa-simizu, 15-30 m.

Distribution : Kings Sound (Australia), Kyushu to Honsyu (Japan).

Genus *Favia* OKEN 1815*Favia speciosa* (DANA) 1846(Jap. name: *Kikumeisi*)

VAUGHAN, 1918, p. 103, pl. 36, figs. 1-4a; pl. 37, figs. 1-4a (Synonymy); YABE, SUGIYAMA and EGUCHI, 1936, p. 28, pl. 20, fig. 7; pl. 23, fig. 1 (Synonymy).

Occurrence : E. P. M.—Tosa-simizu, 0-15 m.

E. U.—Kohama off Uwazima-wan, 10 m (one specimen, 8/VII 1951); Sioko-zima, 5-10 m (2 specimens, 10/VIII 1964).

Distribution : Red Sea, eastward to Hawaiian Islands and northward to Honsyu.

Favia valenciennesi (M. EDWARDS and HAIME) 1850

(Jap. name : *Takaku-kikumeisi*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 31, pl. 23, figs. 3-5; pl. 24, fig. 5 (*Phymastrea valenciennesi*—Synonymy); WELLS, 1954, p. 458 (*Favia valenciennesii*—Synonymy).

Occurrence : E. P. M.—Tosa-simizu, 0-15 m.

Distribution : Red Sea, eastward to Marshall Islands and northward to Honsyu.

Genus *Favites* LINK 1807

Favites abdita (ELLIS and SOLANDER) 1786

(Jap. name : *Kamenoko-kikumeisi*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 31, pl. 22, figs. 3-4 (Synonymy).

Occurrence : E. P. M.—Tosa-simizu, 0-15 m.

Distribution : Red Sea, eastward to Fiji Islands and northward to Honsyu.

Genus *Goniastrea* M. EDWARDS and HAIME 1848

Goniastrea pectinata (EHRENBERG) 1834

(Jap. name : *Ko-kamenoko-kikumeisi*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 34, pl. 23, fig. 2; pl. 24, fig. 4 (Synonymy); CROSSLAND, 1952, p. 135 (Synonymy).

Occurrence : E. P. M.—Tosa-simizu, 0-15 m.

Distribution : Red Sea, eastward to Samoa Islands and northward to Honsyu.

Genus *Platygyra* EHRENBERG 1834

Platygyra lamellina (EHRENBERG) 1834

(Jap. name : *Nô-sango*)

MATTHAI, 1928, p. 37, pl. 6, figs. 2-6 and others (*Coeloria lamellina*-Synonymy); VAUGHAN, 1918, p. 19, pl. 45, figs. 2-3a (*Maeandra lamellina*-Synonymy); YABE, SUGIYAMA and EGUCHI, 1936, pp. 36-37, pl. 21, figs. 4-10; pl. 16, fig. 1; pl. 25, figs. 4-5; pl. 58, fig. 2 (*Coeloria rustica*, *C. lamellina* and *C. astreiformis*); STEPHENSON and WELLS, 1956, p. 35 (*Platygyra lamellina*-Synonymy).

Occurrence : E. P. M.—Asizuri-saki, 0-10 m.

E. U.—Sioko-zima, 5 m (2 specimens, 10/VIII 1964); Seno-hama, 5 m (one specimen, 11/VIII 1964).

Distribution : Red Sea, eastward to Samoa Islands and northward to Honsyu.

Genus *Hydnophora* FISCHER DE WALDHEIM 1807

Hydnophora exesa (PALLAS) 1766

(Jap. name : *Ibo-sango*)

MATTHAI, 1928, p. 140, pl. 14, fig. 5; pl. 15, figs. 1-2; pl. 16, figs. 1-4; pl. 17, fig. 3 (Synonymy).

Occurrence : E. P. M.—Asizuri-saki.

E. U.—Suzuki-bae, 5-10 m (2 specimens, 11/VIII 1964).

Distribution : Red Sea, eastward to Tonga Island and northward to Honsyu.

Genus *Trachyphyllia* M. EDWARDS and HAIME 1848

Trachyphyllia geoffroyi (AUDOUIN) 1826

(Jap. name : *Oobana-sango*; *Hiyu-sango*)

FAUSTINO, 1927, p. 147, pl. 38, figs. 1-2 (*Trachyphyllia amaranthus*); FAUSTINO, 1927, p. 152, pl. 37, figs. 2-3 (*Antillia constricta*); MATTHAI, 1928, p. 97, pl. 22, figs. 1-11; pl. 23, figs. 1-2, 5; pl. 26, fig. 1, pl. 60, fig. 1; pl. 62, figs. 1-3, 7, 8, 11 (*Trachyphyllia geoffroyi*-Synonymy); YABE, SUGIYAMA and EGUCHI, 1936, p. 22, pl. 12, figs. 1-12 (*Trachyphyllia amarantum*-Synonymy); VAUGHAN and WELLS, 1943, p. 170, pl. 28, fig. 7 and pl. 29, fig. 1 (*Trachyphyllia geoffroyi*). Monotypic.

Occurrence : E. P. M.—Asizuri-saki, 150 m.

E. U.—Kohama off Uwazima-wan (2 specimens, 8/VII 1951).

Distribution : Red Sea eastward to Honsyu.

Genus *Cyphastrea* M. EDWARDS and HAIME 1848

Cyphastrea chalcidicum (FORSKÅL) 1775

(Jap. name : *Togekikumeisi*)

MATTHAI, 1914, p. 41, pl. 7, fig. 1. 5; pl. 12, fig. 1-3, pl. 14, fig. 1; FAUSTINO, 1927, p. 117, pl. 18, figs. 1-4; YABE, SUGIYAMA and EGUCHI, 1936, p. 24, pl. 18, fig. 1; pl. 49, fig. 5 (Synonymy); WELLS, 1954, p. 464 (Synonymy).

Occurrence : E. U.—Oitukami-zima (11 denuded fragments, 21/VII 1951); Sioko-zima, 5–8 m (25 specimens, 10/VIII 1964).

Distribution : Red Sea, eastward to Marshall Islands and northward to Honsyu.

Family Mussidae ORTMANN 1890

Genus **Lobophyllia** DE BLAINVILLE 1830

Lobophyllia robusta YABE and SUGIYAMA 1936

(Jap. name : *Hanagata-sango*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 44, pl. 32, figs. 2–4 (*Lobophyllia robusta*—Synonymy).

Occurrence : E. P. M.—Tosa-simizu, 30–100 m (2 large specimens).
E. U.—Sioko-zima, 10 m (one large specimen, 10/VIII 1964); Utidome-bae, 8–10 m (2 specimens, 9/VIII 1964); Tengi-bana, 10 m (one specimen, 12/VIII 1964).

Distribution : Japan only, from Enoura Bay southward to Kita-Daito-zima. Misaki (Tosa-simizu) is the type locality.

Family Pectiniidae VAUGHAN and WELLS 1943

Genus **Echinophyllia** KLUNZINGER 1879

Echinophyllia aspera (ELLIS and SOLANDER) 1786

(Jap. name : *Kikka-sango*)

YABE, SUGIYAMA and EGUCHI, 1936, p. 50, pl. 36, figs. 1–4 (*Oxyphyllia aspera*—Synonymy);
WELLS, 1954, p. 467, pl. 176, fig. 1–5 (*Echinophyllia aspera*—Synonymy); NEMENZO, 1958–59, p. 119, pl. 17, fig. 1 (*Echinophyllia aspera*).

Occurrence : E. P. M.—Asizuri-saki.

Distribution : Red Sea, eastward to Tahiti and northward to Honsyu.

Genus **Pectinia** OKEN 1815

Pectinia lactuca (PALLAS) 1766

(Jap. name : *Umibara*)

FAUSTINO, 1927, p. 160–161, pl. 41 and pl. 42, fig. 2 (*Pectinia lactuca* and *laciniata*); YABE, SUGIYAMA and EGUCHI, 1936, p. 51, pl. 31, fig. 2, pl. 34, fig. 7; pl. 35, fig. 3 (*Tridacophyllia lactuca*—Synonymy); VAUGHAN and WELLS, 1943, p. 198, pl. 40, fig. 7; NEMENZO, 1958–59, p. 125, pl. 20, fig. 1 (*Pectinia laciniata*).

Occurrence : E. P. M.—Tosa-simizu, 15–60 m.

Distribution : Indian Ocean, eastward to Fiji Islands and northward to Honsyu.

Suborder *CARYOPHYLLIINA*

Family Caryophylliidae GRAY 1847

Genus *Caryophyllia* LAMARCK 1801

Caryophyllia scobinosa ALCOCK 1902

(Jap. name : *Tuno-tyôzigai*)

ALCOCK, 1902, p. 8, pl. 1, figs. 2–2a (*Caryophyllia scobinosa*); FAUSTINO, 1927, p. 89, pl. 8, figs. 10–11; YABE and EGUCHI, 1942b, p. 119, pl. 10, figs. 4–5.

Occurrence : E. P. M.—Off Asizuri-saki, 250–600 m.

Distribution : East Indies and Japan, in deep waters.

Genus *Deltocyathus* M. EDWARDS and HAIME 1848

Deltocyathus magnificus MOSELEY 1876

(Jap. name : *Ginka-sango*)

MOSELEY, 1881, p. 147, pl. 4, fig. 10; pl. 13, figs. 1–2; ALCOCK, 1902, p. 20; FAUSTINO, 1927, p. 76, pl. 6, figs. 3–5; YABE and EGUCHI, 1937, p. 138, pl. 20, figs. 13–14; YABE and EGUCHI, 1942b, p. 126.

Occurrence : E. P. M.—Off Asizuri-saki, 250–600 m.

Distribution : East Indies, Philippines and Japan, in deep waters.

Genus *Stephanocyathus* SEGUENZA 1864

Stephanocyathus (Odontocyathus) spiniger

VON MARENZELLER 1888

(Jap. name : *Asinaga-sango*)

ALCOCK, 1902, p. 24, pl. 3, figs. 21–21b (*Odontocyathus stella*); YABE and EGUCHI, 1952b, p. 124, pl. 10, figs. 26–28a (*Odontocyathus spiniger*—Synonymy).

Occurrence : E. P. M.—Off Asizuri-saki, 250–600 m.

Distribution : East Indies and Japan, in deep waters.

Sagami Bay off Eno-sima is the type locality.

Genus **Euphyllia** DANA 1848

Euphyllia fimbriata (SPENGLER) 1799

(Jap. name: *Nagare-hanasango*)

VAUGHAN, 1918, p. 83, pl. 27, figs. 1-2 (*Euphyllia fimbriata*—Synonymy); MATTHAI, 1928, p. 179, pl. 40, fig. 1; pl. 41, figs. 1-2; pl. 52, fig. 1; pl. 59, fig. 1 (Synonymy); YABE, SUGIYAMA and EGUCHI, 1936, p. 17, pl. 8, fig. 1-4; NEMENZO, 1960, p. 210, pl. 1, fig. 2.

Occurrence : E. P. M.—Off Asizuri-saki, 300-700 m.

Diitribution : Indian Ocean (Maldives), East Indies, northward to Honsyu (Tanabe Bay).

Family Flabellidae BOURNE 1905

Genus **Flabellum** LESSON 1831

Flabellum pavoninum paripavoninum ALCOCK 1894

(Jap. name: *Utiwa-sango*)

VAUGHAN, 1907, p. 59, pl. 3, figs. 1-4b (*Flabellum pavoninum* var. *paripavoninum*); YABE and EGUCHI, 1942a, p. 91, pl. 5, figs. 7a-8c (*F. pavoninum paripavoninum*); YABE and EGUCHI, 1942b, p. 129, pl. 11, fig. 9 (*F. p. p.*).

Occurrence : E. P. M.—Off Asizuri-saki, 300-600 m.

Distribution : Indian Ocean, eastward to Hawaiian Islands and northward to Japan, in deep waters.

Flabellum magnificum VON MARENZELLER 1904

(Jap. name: *Oo-utiwa-sango*)

VON MARENZELLER, 1904, p. 270, pl. 17, fig. 13; YABE and EGUCHI, 1942a, p. 89, pl. 5, figs. 1a-1c; YABE and EGUCHI, 1942b, p. 129, pl. 11, figs. 8a-8c.

Occurrence : E. P. M.—Off Asizuri-saki, 700 m.

Distribution : East Indies and Japan, in deep waters.

Flabellum distinctum M. EDWARDS and HAIME 1848

(Jap. name: *Sensugai*)

YBE and EGUCHI, 1942a, p. 93, pl. 5, figs. 3a-6c; pl. 6, figs. 3-10; pl. 7, fig. 7 (Synonymy); YABE and EGUCHI, 1942b, p. 130, pl. 11, figs. 10-12 (Synonymy).

Occurrence : Off Asizuri-saki, 250-600 m.

Distribution : Widespread in all warm seas of Atlantic, Pacific and Indian Oceans.

Flabellum rubrum (QUOY and GAIMARD) 1833(Jap. name : *Hire-sensugai*)

YABE and EGUCHI, 1942a, p. 96, pl. 8, figs. 6a-30c (Synonymy); YABE and EGUCHI, 1942b, p. 135, pl. 12, fig. 1 (Synonymy).

Occurrence ; E. P. M.—Off Asizuri-saki, 250 m.*Distribution*: New Zealand, Indian Ocean, northward to Japan, in deep waters.*Flabellum deludens* VON MARENZELLER 1904(Jap. name : *Kinsi-sango*)

YABE and EGUCHI, 1942a, p. 101, pl. 5, figs. 9a-11c (Synonymy); YABE and EGUCHI, 1942b, p. 135, pl. 12, fig. 1 (Synonymy).

Occurrence : E. P. M.—Off Asizuri-saki, 250-600 m.*Distribution*: Cosmopolitan in all deep seas.Suborder *DENDROPHYLLIINA*

Family Dendrophylliidae GRAY 1847

[=Eupsammiidae M. EDWARDS and HAIME 1848]

Genus *Balanophyllia* WOOD 1844*Balanophyllia gigas* (BRÜGGEMANN, MS.) MOSELEY 1881(Jap. name : *Imo-sango*)

MOSELEY, 1881, p. 190; VAN DER HORST, 1922, p. 58, pl. 8, fig. 22; YABE and EGUCHI, 1942b, p. 139 (Synonymy).

Occurrence : E. P. M.—Off Asizuri-saki, 250-600 m.*Distribution*: Japan (off E. of Bōsō Peninsula to S. of Kagosima Bay, about 100-300 m), East Indies (near Kei Islands, 90 m).Genus *Dendrophyllia* DE BLAINVILLE 1830*Dendrophyllia micranthus* (EHRENBERG) 1834(Jap. name : *Nan'yō-kisango*; *Kurokawa-kisango*)VAUGHAN, 1918, p. 143, pl. 60, figs. 1-1a (*Dendrophyllia nigrescens*); VAN DER HORST, 1922, p. 101 (*D. micranthus*—Synonymy); VAN DER HORST, 1926, p. 43, pl. 2, figs. 6-7 (*D. micranthus*); FAUSTINO, 1927, p. 218, pl. 72, figs. 1-2 (*D. micranthus*—Synonymy); EGUCHI, 1934, p. 367; CROSSLAND, 1952, p. 171-173, pl. 55, fig. 1 and pl. 56, fig. 1 (*D. micranthus* and var. *grandis*); NEMENZO, 1960, pp. 16-17, pl. 8, fig. 2 and pl. 9, fig. 1 (*D. micranthus* and var. *fruticosa*).

Occurrence : E. P. M.—Off Asizuri-saki, 250 m.

Distributien : Red Sea, northward to Honsyu and eastward to Fiji Islands.

Dendrophyllia minuscula BOURNE 1905

(Jap. name : *Hosoeda-kisango*)

VAN DER HORST, 1922, p. 51, pl. 8, fig. 30; EGUCHI, 1934, p. 367 (listed only).

Occurrence : E. P. M.—Off Asizuri-saki, 250 m.

E. U.—Suzuki-bae, 10 m (one specimen, 11/VIII 1964).

Distribution : East Indies, Ceylon, Japan.

Dendrophyllia fistula (ALCOCK) 1902

(Jap. name : *Hoso-kisango*)

ALCOCK, 1902, p. 42, pl. 5, figs. 36-36a (*Balanophyllia* (*Thecopsammia*) *fistula*); VAN DER HORST, 1922, p. 59; FAUSTINO, 1927, p. 222, pl. 72, figs. 5-6); EGUCHI, 1934, p. 368 (listed only); YABE and EGUCHI, 1942b, p. 141, pl. 12, fig. 14-16 (*B. fistula*); WELLS, 1954, p. 472, pl. 180, figs. 1-3 (*Dendrophyllia fistula*—Synonymy).

Occurrence : E. P. M.—Off Asizuri-saki, 250 m.

Distribution : Red Sea, northward to Honsyu and eastward to Bikini Atoll (Marshall Islands), 17-450 fms.

Dendrophyllia coccinea (EHRENBERG) 1834

(Jap. name : *Oo-iboyagi*)

VAN DER HORST, 1922, p. 55, pl. 7, figs. 3-4 (*Dendrophyllia ehrenbergiana*—Synonymy); VAN DER HORST, 1926, p. 45, pl. 3, figs. 1-3 (*Dendrophyllia coccinea*—Synonymy); UTINOMI, 1954, p. 106 (*Tubastraea coccinea*); NEMENZO, 1960, p. 19, pl. 10, fig. 2 (*Dendrophyllia sphaerica*??).

Occurrence : E. U.—Wave-cut cave "Ebino-udo" at Yurano-hana (2 specimens, 15/VII 1951); Yoko-sima, 5 m (one specimen, 9/VIII 1964); Ategi-sima, 13 m (one specimen, 11/VIII 1964).

Distribution : Red Sea, Maldive Arch., East Indies, Japan, Marshall Islands, on shaded rock in shallow waters.

Genus *Tubastraea* LESSON 1834

Tubastraea aurea (QUOY and GAIMARD) 1833

(Jap. name : *Iboyagi*)

VAN DER HORST, 1926, p. 46, pl. 2, figs. 1-4, 8-9 (*Dendrophyllia aurea*—Synonymy); WELLS, 1950, p. 50 (*Tubastraea willeyi*); UTINOMI, 1954, p. 106 (*Tubastraea aurea*); SQUIRES, 1959, p. 427 (*Tubastrea aurea*—Synonymy); SQUIRES, 1960, p. 200, pl. 35, fig. 12 (*T. aurea*).

Occurrence : Wave-cut cave "Ebino-udo" at Yurano-hana, 0.5 m (4 specimens, 19/VII 1951); wave-cut cave "Ebino-udo" at Yurano-hana, 0.5 m (one specimen, 10/VIII 1964); wave-cut cave "Hukinuke-dō" at Yoko-sima, 0 m (2 specimens, 9/VIII 1964); wave-cut cave "Kasimano-ana" at Ka-sima, 1 m (4 specimens, 9/VIII 1964); wave-cut cave "Kurosaki-dō" at Kuro-saki, 0-1 m (4 specimens, 11/VIII 1964).

Distribution : Recorded so far from Red Sea, Indian Ocean, East Indies, New Zealand, Japan, Hawaiian Islands, Baja California, Galapagos and Panama. Thus it is probably circumtropical, usually on shaded rock in shallow waters.

Genus *Turbinaria* OKEN 1815

Turbinaria peltata (ESPER) 1797

(Jap. name : *Oosuribati-sango*)

BERNARD, 1896, p. 38, pls. 6-8 and pl. 31, fig. 15 (*Turbinaria peltata*—Synonymy); FAUSTINO, 1927, p. 247, pl. 78, figs. 1-2; YABE and SUGIYAMA, 1941, p. 87, pl. 93, pl. 94, figs. 1-2; CROSSLAND, 1952, p. 174, pl. 16, fig. 4; pl. 17, fig. 1; pl. 18, fig. 2; pl. 19, fig. 2; NEMENZO, 1960, p. 4, pl. 1, fig. 1.

Occurrence : E. P. M.—Tosa-simizu, 15-60 m.

Distribution : Indian Ocean (Mauritius), Australia, East Indies, eastward to Palau Islands and northward to Honsyu.

Turbinaria brüggemanni BERNARD 1896

(Jap. name : *Yokomizo-suribatisango*)

BERNARD, 1896, p. 60, pl. 15; pl. 32, fig. 13; YABE and SUGIYAMA, 1941, p. 85, pl. 99, figs. 3-4.

Occurrence : E. P. M.—Tosa-simizu, 10 m.

Distribution : Taiwan, Japan.

Turbinaria bifrons BRÜGGEMANN 1877

(Jap. name : *Hidaberi-suribatisango*)

BERNARD, 1896, p. 69, pl. 21; pl. 33, fig. 1; YABE and SUGIYAMA, 1941, p. 85, pl. 69, figs. 1-1b; CROSSLAND, 1959, p. 176, pl. 21, figs. 1-2.

Occurrence : E. P. M.—Tosa-simizu, 15-30 m.

Distribution : West Australia, Great Barrier Reef, Japan (Sikoku).

Turbinaria undata BERNARD 1896(Jap. name : *Suribatisango*)

BERNARD, 1896, p. 31, pl. 4; pl. 31, fig. 7; YABE and SUGIYAMA, 1941, p. 89, pl. 96, figs. 2-3.

Occurrence : E. P. M.—Tosa-simizu, 15-30 m.*Distribution* : West Australia, Japan (Tanabe Bay).*Turbinaria* sp. [*T. cf. contorta* BERNARD 1896](Jap. name : *Koibo-suribatisango*; *Nezire-iboitasango*)

BERNARD, 1896, p. 74, pl. 24, pl. 33, fig. 5; YABE and SUGIYAMA, 1941, p. 85, pl. 96, figs. 5-5a; pl. 102, figs. 3-4.

Occurrence : E. P. M.—Tosa-simizu, 10-30 m.*Distribution* : South China Seas, Taiwan, Japan.**Acknowledgments**

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