

東京大学総合研究博物館動物部門所蔵ウミエラ類標本

Catalogue of pennatulacean specimens preserved in the Department of Zoology, the University Museum, the University of Tokyo

今原幸光

Yukimitsu Imahara

(財) 黒潮生物研究財団 黒潮生物研究所 和歌山研究室; Wakayama Laboratory, Biological Institute on Kuroshio (Kuroshio Biological Research Foundation), 300-11 Kire, Wakayama, 640-0351 Japan

緒言

本文は、東京大学総合研究博物館動物部門が所蔵する刺胞動物のウミエラ類標本についてまとめたものである。動物部門に保管されている刺胞動物門の他の分類群と比較すると、ウミエラ類の標本は点数が少なく、またタイプ標本も含まれていない。これは、ウミエラ目が比較的小さな動物群であることと共に、標本が採集された当時の東京大学動物学教室には、ウミエラ類の分類学を専門とする研究者がいなかったためであると思われる。しかし、保存標本の中には、後述のように第4代教授飯島魁の依頼を受けた英国アバディーン大学のトムソンとレネットが、東京大学理科紀要の記念すべき第1巻に発表した標本が含まれていた(Thomson & Rennet, 1927)。本文では、総合研究博物館所蔵のウミエラ類標本の概要と、日本におけるウミエラ類の研究史について述べた後に、全標本のリストとラベル情報を最新の分類体系に沿って示す。

コレクションの概要

今回の調査では、保存されていた62本の標本瓶について、まず最初に保存液の種類を確かめ、ホルマリンが使われていた場合はエタノールに置き換えた。次いで、標本の写真撮影並びにラベルの読み取り作業を行った。ウミエラ類の種の同定は、ごく一部の特徴的な種を除くと、顕微鏡下での解剖学的な検討を行う必要があるが、今回は、原則として肉眼で判別可能な範囲での同定に止めた。また、一つの瓶の中に明らかに複数種や産地の異なる標本が混在していた場合は、それらを種類ごと及び産地ごとの瓶に取り分けた。その結果、最終的な標本瓶の数は69本になった。このような作業の過程で、当コレクションには、トムソンとレネットの研究材料(Thomson & Rennet, 1927)が多数含まれていることが明らかになった。これらの標本については、できる限り記載標本の特定を行うとともに、ラベルの産地

情報等が読み取り不可能であった標本については、彼らの論文に記述されている情報を付け加えてリストを作成した。

今回の調査を通して、28 種 69 ロットのウミエラ類標本が確認された。これらの中には、トムソンとレネットが報告したウミエラ類 24 種 1 変種中の 21 種 39 ロットが含まれていたが、彼らが新変種として記載した *Pennatula phosphorea* var. *constricta* Thomson & Rennet (Merase, South of Prov. Awa, 400 fath, 7th Apr., 1896, Coll. Aoki) のタイプ標本と下記 4 種の標本は見つからなかった。

トゲウミサボテン *Echinoptilum mackintoshi* Hubrecht

アンソプティラム属の一種 *Anthoptilum thomsoni* Kölliker

ヤナギウミエラ属の一種 *Virgularia kuekenthali* (= *V. brochii* Kükenthal)

トゲウミエラ属の一種 *Pteroeides tenerum* Kölliker

ラベルから確認された標本の収集期間は、1890 年 (明治 23 年) から 1926 年 (大正 15 年) であった。採集範囲は、相模湾が多かったが、宮城県石巻湾、駿河湾、沖縄県西表島の標本も含まれていた。今回同時に調査を行ったウミトサカ類標本では、小笠原諸島や高知及び九州産の標本も含まれていたが、当コレクションにはそれらの地域は含まれていなかった。なお、ビューフォート (米ノースカロライナ) 沖産のウミシイタケ属 *Renilla reniformis* Lamarck と、マーサス・ヴィネヤード島 (マサチューセッツ) 沖産のウミエラ属の一種 *Pennatula aculeata* Danielssen 及びアルバトロス号がベーリング海で採集したフサウミエラ属の一種 *Umbellula* sp. が含まれていた。標本の中には、種名の記されたラベルの入っている場合が多かった。トムソンとレネットの論文にも種名ラベルの存在を示す記述のあることから、彼らの研究以前に誰かが同定を行ったものと考えられるが、それらの同定者名は特定できなかった。採集者の中には、ウミトサカ類標本と同様に、東京大学動物学教室第 3 代教授の箕作佳吉 (三崎臨海実験所初代所長)、第 4 代教授の飯島魁 (同臨海実験所第 2 代所長) 及び三崎臨海実験所の名物採集人青木熊吉の名前がたびたび出てきていて、これらの標本の多くが三崎臨海実験所を中心に収集されたことが伺える。相模湾産の標本には、イギリス人商人で標本商を手がけていたアラン・オーストン (Alan Owston) の名前もしばしば登場した。

下記の目録は、原則としてカリフォルニアアカデミーの G. C. Williams とスミソニアン自然史博物館の S. D. Cairns が WEB で公開している最新の分類体系に基づいて配列した。

<<http://research.calacademy.org.research/izg/OCTOCLASS.htm>>

標本情報は、次の順に要約して記述したが、該当事項のない場合あるいは不明な場合は項目自体を省略した。①標本番号、②標本の数量、③Type status: タイプ標本である場合はその位置、④Locality: 一枚あるいは複数枚のラベルから読み取った産地、⑤Date: 採集日、⑥Collector(s): 採集者名、⑦Label data: 元ラベルの記載内容、⑧Reference: 論文発表に使われた場合はその文献情報、⑨Remarks: その他の情報。産地については、ラベルに記載されていた地名だけでは具体的な場所 (海域) を特定しにくい場合もあったので、県名または海域名を最初に記述したが、その中には筆者の責任において判断を下した場合も含まれる。採集者名についても、同様に筆者の推測も含めてできる限りフルネームを記述した。⑦の元ラベルの記載内容は、ラベル中には文字の消えかけているラベルも散見されたことから、ラベル

情報の保全を目的とすると共に、筆者の推定した産地名等に誤りがある場合に備えて記述した。

日本産ウミエラ類の分類学的研究略史

日本産ウミエラ類(刺胞動物門・花虫綱・八放サンゴ亜綱)を近代的な分類学に基づいて最初に報告したのは、オランダ国立自然史博物館のハークロット (Jan A. Herklots) である。ハークロットは、江戸時代末(1823-1828)に来日したシーボルト (Philipp Franz von Siebold) がオランダに持ち帰った標本の中から、フトウミエラ *Leiopitilus fimbriatus* など4種のウミエラ類を新種記載した (Herklots, 1858)。次いで、ヴュルツブルグ大学の著名な解剖学者であったケリカー^{*1}が、チャレンジャー号のコレクションの中から、9新種を含む11種のウミエラ類を報告した (Kölliker, 1880)。1885年には、オランダのユトレヒト大学教授であったフブレクトが、日本海産のトゲウミサボテン *Echinoptilum macintoshii* を新種記載した (Hubrecht, 1885)。1897年になって、東京大学動物学教室の学生であった宮嶋幹之助^{*2}が、アカサボテン属 *Veretillum* の生態についての論文を発表し (宮嶋, 1897)、その後も2度にわたりウミサボテン *Cavernularia obesa* の分類や生態についての論文を発表したが (宮嶋, 1900a, b)、宮嶋のウミエラに関する研究はそれで終わった。

その後、日本産ウミエラ類の研究は再び外国人の手にゆだねられ、1910年にはドイツ人海洋動物学者ドフライン (Franz Doflein) の収集標本から、ミュンヘン動物学博物館のバルス^{*3}が、2新種を含む22種を発表した (Balss, 1910)。また、1906年に日本周海調査航海を行った米水産局調査船アルバトロス号のコレクションを調べたナッチング (Charles C. Nutting) は、11新種を含む30種を報告した (Nutting, 1912)。1927年になり、英国アバディーン大学教授のトムソン^{*4}と、彼の学生であったレネットが、1新亜種を含む日本産ウミエラ類24種

*¹ ケリカー (Albert Rudolph von Kölliker) がヴュルツブルグ大学で指導した学生の1人にヘッケル (Ernst Heinrich Philipp A. Haeckel) がいる。ヘッケルはその後イエーナ大学の教授になったが、その学生の1人にキュケンタール (Willy Georg Kükenthal) がいた。キュケンタールは、ウミエラ類を含む八放サンゴの現代的分類学を確立した人物であって、1898年から1917年までプレスラウ大学教授・動物学博物館長 (現ポーランドのプロツワフ) を勤めた。キュケンタールが「動物界—現生動物の分類と整理」第43巻で著した「ウミエラ類」は (Kükenthal, 1915)、当時記録されていたウミエラ類全種を再検討していて、日本産ウミエラの分類学にとっても最も重要な文献の一つである。

*² 宮嶋幹之助は、1899年に東京大学動物学教室を卒業したが、卒業後京都大学で寄生虫学を専攻し、北里研究所副所長や慶応大学医学部教授などを歴任した (磯野, 1988)。東京大学在学中は、九州と沖縄方面への調査旅行をしきりに行った。また、日本初の蝶類図譜の刊行や民俗学などにも業績を残した。

*³ ミュンヘン動物学博物館主任標本管理官であったバルス (Heinrich Balss) は、甲殻類の分類学で大きな業績を残したが、ウミエラについての論文も残している。

*⁴ トムソン (Arthur John Thomson) は、“Outline of Science”の著者として著名な科学者であるが、1905年から1931年にかけて八放サンゴの論文を発表した。特に英国統治下のインド博物館が行ったインド洋調査の報告では多数の新種を発表した (Thomson & Henderson, 1906; Thomson & Simpson, 1909) が、それらの標本は行方不明である。またレネット (Nita J. Renet) は、オーストラリアが行った南極調査の八放サンゴもトムソンと共に報告している (Thomson & Renet, 1931)。

1 亜種 (そのうちの 1 種は、日本産かどうか産地不明) をまとめて発表した。彼らの研究材料は、論文の緒言に記されているように、東京帝国大学 (当時) 動物学教室教授であった飯島魁らが集めた東京大学動物学教室のコレクションであった ”This is a report on a collection of pennatulids made in Japanese waters by Prof. Ijima and others, and housed in Tokyo University”。その後は、東京文理大学の熊野正雄^{*5}が、陸奥湾産ウミエラ類 3 種を第 28 回日本動物学会で紹介した (熊野, 1936)。熊野は、博物学雑誌において日本産ウミエラ類 50 種を紹介すると共に (熊野, 1937)、翌年にはその内容を第 30 回日本動物学会上でも改めて紹介している (熊野, 1938)。この時期には、高知県立高岡高等学校教諭であった植田穂が、ヤナギウミエラとトゲウミエラ類の解剖学的研究を行っているが (植田, 1939, 1941)、その後日本産ウミエラの種類学的研究は途絶えていた。1958 年になり、京都大学の内海富士夫と原田英司が、紀伊半島沖の底曳網漁獲生物についてのリストを公表したが、その中でウミエラ類 3 種が報告された (Utinomi & Harada, 1958)。内海は同年の四国沖八放サンゴ類リスト中でもウミエラ類 3 種を報告し (Utinomi, 1958)、1961 年には紀伊半島沿岸の八放サンゴ類の報告の中で既知種 7 種の記載を行い (Utinomi, 1961)、その翌年には昭和天皇御採集標本のリスト中で 8 種のウミエラ類を報告した (Utinomi, 1962)。その後今原が、沖縄諸島産八放サンゴ類の報告中で 4 種のウミエラ類を記載し (Imahara, 1991)、さらに 2006 年には沖縄のマングローブ干潟に生息するマヒルノヤナギウミエラの記載 (Imahara, 2006a) と相模灘産八放サンゴ類のリスト中でウミエラ類 16 種をリストアップして (Imahara, 2006b) 現在に至っている。このほか、飯島が「動物学提要」でウミエラ類 4 種を記述し (飯島, 1918)、熊野 (1960)、内海 (1964) からも各種図鑑の中でウミエラ類の記述を行っているが、これらの記述が標本に基づく記載なのか文献からの引用なのかは定かでない。

謝辞

東京大学大学院理学系研究科の上島勲准教授には、今回の標本調査を行う上で多大な便宜を図っていただいた。また、(財) 黒潮生物研究所の岩瀬文人所長には難解なラベル解説についてアドバイスをいただき、国立科学博物館の並川洋主任研究官には、相模湾における漁場の呼称に関する飯島の文献 (Ijima, 1901) 等のアドバイスをいただいた。滋賀県立琵琶湖博物館のマーク・グライガー総括学芸員には英文原稿の校閲をしていただいた。記してお礼申し上げます。

^{*5} 熊野は、後に金沢大学教授、附属能登臨海実験所初代所長を務めたが、金沢大学時代のウミエラ類に関する研究業績は、北隆館の原色動物図鑑 (熊野, 1960) や新日本動物図鑑の執筆を除いて不明である。なお、近年になり、昭和天皇陛下の八放サンゴコレクションと、斉藤報恩会自然史博物館が国立科学博物館に寄贈した標本の中から、熊野が同定を行ったことを示すラベルの付いたウミエラ標本が見つかった (今原, 未発表)。

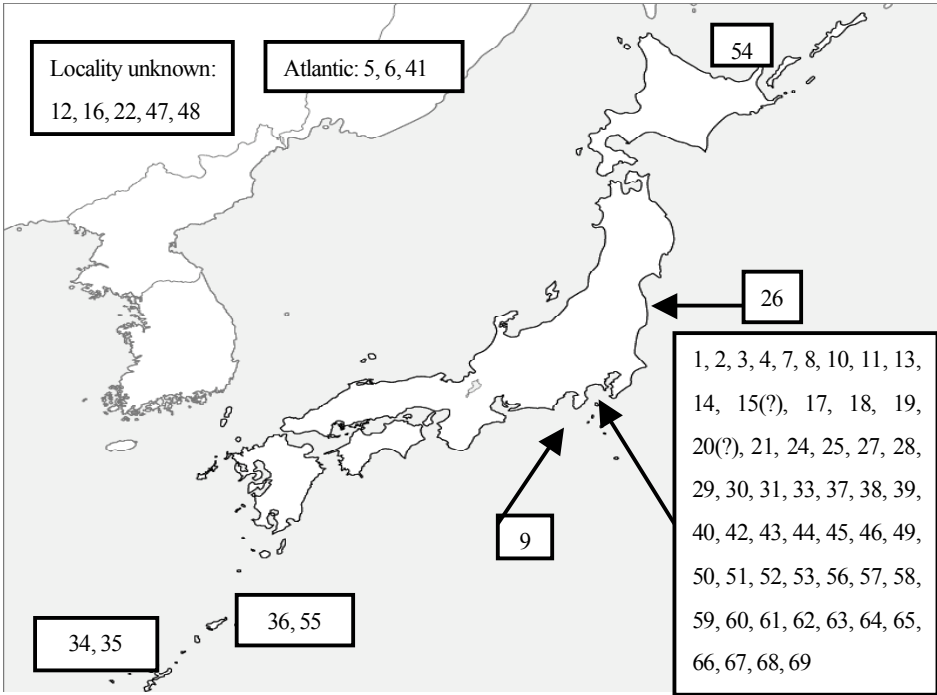


Fig. 1. Map showing locations of specimens collected

Numbers in boxes are registration numbers of UMUTZ-Cnid-P

Table 1. List of scientists studied on the taxonomy of Japanese Pennatulacea

研究者名・発表年	採集者名・採集年	記載種	産地 (標本所蔵機関)
Herklots, J. A., 1858	Siebold, P. F., 1823-28	<i>Leioptilus fimbriatus</i> , etc., 4 n. spp.	日本 (RMNH)
Kölliker, R. A., 1880	Challenger Exped., 1875	<i>Umbellula durissima</i> , etc., 9 n. spp.	相模灘、他 (BM)
Hubrecht, A. A. W., 1885	?	<i>Echinoptilum Machintoshi</i> , 1 n. sp.	日本海 (?RMNH)
Nutting, C. C., 1912	Albatross Exped., 1906	<i>Kophobelemnon hispidum</i> , etc., 11 n. spp.	全国 (USMN)
Balss, H., 1910	Doflein, F., 1904	<i>Pteroeides dofleini</i> , etc., 2 n. spp.	相模湾 (ZSM, ZMB, ZMH, ZMUC)
Thomson, J. A. & N. I. Rennet, 1927	飯島魁ら東京大学動物学教室	<i>Pennatula phosphorea</i> var. <i>constricta</i> , 1 n. v.	石巻-西表島 (UMUT)
熊野正男, 1936-60	?	日本産ウミエラ 50 種	全国 (NSMT, UMUT)
内海富士夫, 1958-1975	生物学御研究所 他	<i>Kophobelemnon stelliferum</i> , etc. 17 spp.	太平洋岸 (SMBL, NSMT, UMUT)
内海富士夫 & 原田英司, 1958	海運丸 (南部漁協所属沖合い底曳網漁船), 1957	リストのみ (<i>Echinoptilum macintoshi</i> , etc. 3 spp.)	紀伊半島沖 (SMBL)
今原幸光, 1991-	今原ら	<i>Cavernulina orientalis</i> , 4 spp., etc.	全国 (WMNH)
<p>BM: Natural History Museum, London; NSMT: National Museum of Naure and Science; RMNH: Leiden Nationaal Natuurhistorische Museum; SMBL: Seto Marine Biological Laboratory, Kyoto University; UMUT: The University Museum, the University of Tokyo; USMN: National Museum of Natural History, Smithsonian Institution ; WMNH: Wakayama Prefectural Museum of Natural History; ZMB: Museum für Naturkunde der Humboldt-Universität zu Berlin; ZMH: Zoologisches Museum der Universität Hamburg; ZMUC: Universitets København, Zoologisk Museum; ZSM: Zoologische Staatssammlung, München.</p>			

**List of the pennatulacean collection deposited in the Department of Zoology,
the University Museum, the University of Tokyo**

(Database available online at <http://umdb2.um.u-tokyo.ac.jp/DDoubutu/invertebrate/pennatulacea/index.html>)

Phylum Cnidaria 刺胞動物門

Class Anthozoa 花虫綱

Subclass Octocorallia 八放サンゴ亜綱

Order Pennatulacea ウミエラ目

Suborder Sessiliflorae ウミサボテン亜目

Family Veretillidae ウミサボテン科

Cavernularia obesa Milne-Edwards et Haime ウミサボテン

UMUTZ-Cnid-P-1; one colony.

Locality: Sagami Bay off Koajiro, Miura city, Kanagawa Prefecture.

Date: October, 1898.

Label data: “*Cavernularia habereri*, Pennatulacea, 小網代, Oct. 1898”.

Lituarium hicksoni Thomson et Simpson シロバナヒメウミサボテン

UMUTZ-Cnid-P-9; one colony.

Locality: Suruga Bay near Numazu city, Shizuoka Prefecture.

Date: 24 May 1905.

Collector: Kumakichi Aoki

Label data: “*Lituarium hicksoni*”; “Loc. near Numazu, Prov. Suruga, Date. 24 May 1905, Coll. Aoki”.

Reference: Thomson & Rennet, 1927: 119-120.

Family Renillidae ウミシイタケ科

Renilla cf. reniformis (Pallas)

ウミシイタケ属の一種 (和名未定種)

UMUTZ-Cnid-P-5; one colony.

Locality: Atlantic Ocean off Beaufort, North Carolina, U.S.A.

Label data: “RENILLA RENIFORMIS Lam., ウミシイタケ, Pennatulacea, Alcyonaria, Beaufort, N.C., U.S.A.”

UMUTZ-Cnid-P-6; two colonies.

Locality: Atlantic Ocean, off North Carolina, U.S.A.

Label data: “*Renilla* (North Carolina), presented by Dr. B. Dean, Colombia Univ., U.S.A., Apr. 1903”.

Family Kophobeleminidae コンボウウミサボテン科

Kophobeleminon stelliferum O. F. Müller

コンボウウミサボテン属の一種 (和名未定種)

UMUTZ-Cnid-P-2; two colonies.

Locality: Sagami Bay off Oiso town, Kanagawa Prefecture.

Date: 5 August 1895.

Collector: Prof. Isao Ijima.

Label data: “Stat. 30, off Oiso, Sagami Sea, 5/8/95, Ijima coll.”

Remarks: These specimens are now somewhat disintegrated.

UMUTZ-Cnid-P-62; three colonies.

Locality: Sagami Bay, inside Okinose Bank, 300-400 fathoms (i.e., 550-730 m).

Date: January, 1890.

Collector: Kumakichi Aoki.

Label data: “*Kophobelemnon stelliferum* O. F. Müller”; “Loc. Inside Okinose by Ena-line, 300-400 faths., Date. Jan 1890. coll. Aoki”.

Reference: Thomson & Rennet, 1927: 122.

Remarks: “Okinose” in the label is a shallow bank located about 20 km south of the Miura Peninsula, Kanagawa Prefecture. “Ena-line” is a fishermen’s expression used to pinpoint a fishing ground. It is a line extending from Fujiyama Mountain (a rather low but certain landmark located south of Yokosuka city, Kanagawa Prefecture, and the older name of Tozeyama Mountain) in the direction of Ena, a place in the south eastern part of Miura city, Kanagawa Prefecture.

UMUTZ-Cnid-P-63; three colonies.

Locality: Sagami Bay, Honba, 350-400 fathoms (i.e., 640-730 m).

Date: 7 December 1894.

Collector: Kumakichi Aoki.

Label data: “Name. *Kophobelemnon ferrugineum*, Loc. Honba, southwest of Province Awa, 350-400 fms., Date. 7 Dec. 1894. Coll. Aoki”.

Reference: Thomson & Rennet, 1927: 122.

Remarks: “Honba” is a fishing ground located between Suno-saki Cape, Chiba Prefecture, and Izu-oshima Island.

UMUTZ-Cnid-P-64; one colony.

Locality: Sagami Bay, Yodomi

Date: 7 August 1897.

Collectors: Mikinosuke Miyashima and Toyozo Tsuchida.

Label data: “*Kophobelemnon ferrugineum* K. Loc. Yahagi-line by Mera 1., Date. 7 Aug. 1897, Coll. Myashima, Tsuchida”.

Reference: Thomson & Rennet, 1927: 122.

Remarks: “Yodomi” is a fishing ground located about 10 km southwest of the Miura Peninsula, Kanagawa Prefecture, at the intersection point of the “Yahagi-line” and “Mera 1”. “Yahagi-line” in the label is a fishermen’s expression used to pinpoint a fishing ground. It is a line from Fujiyama Mountain (see the Remarks for UMUTZ-Cnid-P-62) in the direction of Yahagi, Miura city, Kanagawa Prefecture. “Mera 1” is a similar line extending from Mera, Tateyama city, Chiba Prefecture, in the direction of Oiso town, Kanagawa Prefecture, with “1” meaning “the first”. Thomson & Rennet (1927) mistook “Mera 1” for Mera Island in their article.

UMUTZ-Cnid-P-65; two fragments probably belong to one colony.

Locality: Sagami Bay, Yodomi (see Remarks for UMUTZ-Cnid-P-64), 400 fathoms (i.e., ca. 730 m).

Date: 12 December 1898.

Collector: Kumakichi Aoki.

Label data: “*Kophobelemnon stelliferum*”; “Loc. Yodomi 400 faths., 12 Dec. 98, Coll. Aoki”.

Reference: Thomson & Rennet, 1927: 122.

***Sclerobelemnon burgeri* (Herklots) アイオイウミサボテン**

UMUTZ-Cnid-P-7; one colony.

Locality: Sagami Bay, Yodomi (see Remarks for UMUTZ-Cnid-P-64).

Date: 10 August 1895.

Collector: Prof. Ijima.

Label data: “Loc. Ena-line by Mera 2, Date. 10 Aug. 95, Coll. Prof. Ijima”; “*Pennatula fimbriata* Herk var *sulcata*”.

Reference: Thomson & Rennet, 1927: 122-123.

Remarks: “Mera 2” is a fishermen’s expression used to pinpoint a fishing ground neighboring “Mera 1” (see the Remarks for UMUTZ-Cnid-P-64). The second label may have been placed together with this specimen by mistake.

UMUTZ-Cnid-P-8; one colony.

Locality: Sagami Bay, Dôketsuba.

Date: 11 November 1898.

Collector: Kumakichi Aoki.

Label data: “Nam. *Kophobelemn* sp, Loc. Doketsuba, west of Hojo, Prov. Awa, Date. 11 Nov. 1898, Coll. Aoki”; “*Sclerobelemn burgeri*”.

Reference: Thomson & Rennet, 1927: 122-123.

Remarks: “Dôketsuba” is a fishing ground located about 7 km northwest of Suno-saki Cape, Chiba Prefecture.

UMUTZ-Cnid-P-10; Number of specimens: one colony.

Locality: Sagami Bay off Hôjô, Tateyama city, Chiba Prefecture.

Label data: “Nam. *Sclerobelemn* sp., Loc. off Hojo”; “*Sclerobelemn burgeri*”.

Reference: Thomson & Rennet, 1927: 122-123.

Remarks: This is probably the specimen that was reported from “Off Hojo, Province Awa” by Thomson & Rennet (1927).

Family Funiculinidae ムチウミサボテン科

Funiculina quadrangularis (Pallas) ムチウミサボテン

UMUTZ-Cnid-P-15; two fragments probably belonging to one colony.

Label data: “*Funiculina quadrangularis*”.

Remarks: Dry specimens. No label with collection data was found, although Thomson & Rennet (1927) reported one fragment of this species from Nakano-Yodomi (about 10 km west from Miura Peninsula), 70-100 fathoms, (i.e., ca. 130-180 m) collected on 2 April 1898. The present specimen or UMUTZ-Cnid-P-20 (q.v.) might be their reported specimen.

UMUTZ-Cnid-P-17; 10 fragments probably belonging to one colony.

Locality: Sagami Bay about 3 km west of the Misaki Marine Biological Laboratory, Miura city, Kanagawa Prefecture.

Date: 6 April 1899.

Collector: Alan Owston.

Label data: “Nam. *Funiculina quadrangularis* (Pallas), Loc. about two miles west of Misaki Marine Laboratory, Date. 6 Apr. 1899, Coll. A. Owston, (O. C. 5668)”.

Reference: Thomson & Rennet, 1927: 125.

UMUTZ-Cnid-P-20; one fragment.

Label data: “*Funiculina quadrangularis* (Pallas)”.

Remarks: The label with the collection data has disintegrated, although Thomson & Rennet (1927) reported one fragment of this species from Nakano-Yodomi, 70-100 fathoms (i.e., ca. 130-180 m), collected on 2 April 1898. The present specimen or UMUTZ-Cnid-A-15 (q.v.) might be their reported specimen.

Family Stachyptilidae ツクシウミサボテン科

Stachyptilum superbum Studer ツクシウミサボテン

UMUTZ-Cnid-P-4; one colony.

Locality: Sagami Bay, Misaki, Miura city, Kanagawa Prefecture, 200 fathoms (i.e., ca. 360 m).

Date: May, 1895.

Collector: Kumakichi Aoki.

Label data: "Loc. Misaki, 200 faths, Date. May, 95, Coll. Aoki".

Remarks: This specimen had been kept in the same jar as specimen UMUTZ-Cnid-P-53.

UMUTZ-Cnid-P-21; three colonies.

Locality: Sagami Bay.

Date: June, 1898.

Collector: Alan Owston.

Label data: "*Stachyptilum superbum* Studer, Loc. Sagami Bay, Date. June 1898, Coll. Owston (O. C. 5449)"; "Loc. Okinose, 200 faths., Date. Oct. 1898, Coll. Owston".

Reference: Thomson & Rennet, 1927: 125-126.

Remarks: The collection data in the first label agree well with the cited reference. The second label may have been placed together with these specimens by mistake.

UMUTZ-Cnid-P-24; one colony.

Locality: Sagami Bay, west southwest of the Miura Peninsula, Kanagawa Prefecture, 80-140 fathoms (i.e., ca. 150-260 m).

Date: 19 August 1893.

Collectors: Prof. Kakichi Mitsukuri and Kumakichi Aoki.

Label data: "Name. *Stachyptilum superbum*, Loc. Kozuka-line, 80-140 faths. Date 19 Aug. 1893, Coll. Prof. Mitsukuri and Aoki".

Reference: Thomson & Rennet, 1927: 125-126.

Remarks: "Kozuka-line" is a fishermen's expressions used to pinpoint a fishing ground. It is a line from Fujiyama Mountain (see Remarks for UMUTZ-Cnid-P-62) in the direction of the shore slightly south of Arazaki Cape, Miura city, Kanagawa Prefecture. This specimen is now somewhat disintegrated.

UMUTZ-Cnid-P-33; one colony.

Locality: Sagami Bay, Dôketsuba (see Remarks for UMUTZ-Cnid-P-8).

Date: 12 August 1895.

Collector: Prof. Isao Ijima.

Label data: "*Stachyptilum superbum*"; "Loc. Doketsuba, Date 12 Aug. 95, Coll. Prof. Ijima".

Reference: Thomson & Rennet, 1927: 125-126.

UMUTZ-Cnid-P-53; one colony.

Locality: Sagami Bay off Misaki, 200 fathoms (i.e., ca. 360 m).

Date: May, 1895.

Collector: Kumakichi Aoki.

Label data: "Loc. Misaki, 200 faths, Date. May, 95, Coll. Aoki"; "*Scytarium martensii*".

Remarks: The second label seems to have been placed in this bottle by mistake.

Family Chunellidae フタゴウミサボテン科

Chunella indica (Thomson & Henderson) フタゴウミサボテン

UMUTZ-Cnid-P-3; two colonies.

Locality: Sagami Bay, Nakano-yodomi, 70-100 fathoms (i.e., ca. 130-180 m) according to the reference.

Date: 2 April 1898.

Label data: "*Calibelemnon indicum* Thomson & Henderson"; "Loc. Nakano Yodomi, ○○○○ [illegible], Date. Apr. 1898".

Reference: Thomson & Rennet, 1927: 126.

Remarks: "Nakano-yodomi" is a fishing ground located about 10 km west of the Miura Peninsula, Kanagawa Prefecture. The depth at the locality was taken from the cited reference, although the label data themselves are very difficult to read.

UMUTZ-Cnid-P-23; three colonies.

Label data: None.

Family Umbellulidae フサウミサボテン科
***Umbellula* sp.** フサウミサボテン属の一種

UMUTZ-Cnid-P-54; one colony.

Locality: Bering Sea, Cape Monati, 64 fathoms (i.e., 120 m).

Date: 14 June 1906.

Collector: United States Fisheries Steamer *Albatross*.

Label data: "Station 4790, Date June 14, Depth 64, Steamer Albatross".

Remarks: This specimen is now considerably disintegrated, and it has not been reported previously in the literature.

Suborder Subselliflorae
Family Halipteridae オオヤナギウミエラ科
Halipteris willemoesi (Kölliker)
オオヤナギウミエラ属の一種 (和名未定種)

UMUTZ-Cnid-P-12; three fragments.

Label data: "*Balticina willemoesi*".

UMUTZ-Cnid-P-13; one colony.

Locality: Sagami Bay, Numa, 330 fathoms (i.e., ca. 600 m).

Date: 22 August 1903.

Collector: Prof. Mitsukuri and Kumakichi Aoki.

Label data: "*Balticina willemoesi* (young form)"; "Loc. Numa, westward of Prov. Awa, 330 faths., 22 Aug. 1903, Coll. Prof. Mitsukuri and Aoki".

Reference: Thomson & Rennet, 1927: 131.

Remarks: "Numa" is a fishing ground located about 10 km west of Daibo-zaki Cape, Chiba Prefecture.

UMUTZ-Cnid-P-18; many fragments probably belonging to one colony.

Locality: Sagami Bay, Merase, 400 fathoms (i.e., ca. 730 m).

Date: 7 April 1896.

Collector: Kumakichi Aoki.

Label data: "*Balticina willemoesi*"; "Loc. Merase, south of Prov. Awa, ca. 400 faths. Date. 7 April '96, Coll. Aoki"; "*Scytalium tentaculatum*".

Reference: Thomson & Rennet, 1927: 129-131.

Remarks: "Merase" is a fishing ground located about 8 km southwest of Mera, Tateyama city, Chiba Prefecture. These specimens had been stored in formalin.

Family Virgulariidae ヤナギウミエラ科
Scytalium martensi Kölliker ホソウミエラ

UMUTZ-Cnid-P-11; two colonies.

Locality: Sagami Bay, Dôketsuba (see Remarks for UMUTZ-Cnid-P-8).

Date: 11 November 1898.

Label data: "Name. *Scytalium* sp., Loc. Doketsuba, west of Prov. Awa, Date 11 Nov. 1898".

Reference: Thomson & Rennet, 1927: 136.

Remarks: This is probably a young colony of *Scytalium martensi*.

UMUTZ-Cnid-P-19; one colony.

Locality: Sagami Bay, Misaki Harbor, Miura city, Kanagawa Prefecture, 200 fathoms (i.e., ca. 360 m).

Date: May, 1895.

Collector: Kumakichi Aoki.

Label data: "*Scytalium splendens*"; "Loc. Vicinity of Misaki Harbor, 200 faths., Date. May 1895, Coll. Aoki"; "*Funiculina quadrangularis*".

Reference: Thomson & Rennet, 1927: 136.

Remarks: This specimen is a very young colony. *Scytalium splendens* may be a synonym of this species. The last label might have been placed in this bottle by mistake.

UMUTZ-Cnid-P-31; one colony.

Locality: Sagami Bay.

Date: June, 1898.

Collector: Alan Owston

Label data: “*Scytalium splendens*”; “Name. *Scytalium* sp., Loc. Sagami Bay, Date. June 1898, Coll. A. Owston, (O. C. 5439)”.

Reference: Thomson & Rennet, 1927: 137.

Virgularia halisceptrum (Broch) マダラヤナギウミエラ

UMUTZ-Cnid-P-36; two colonies.

Locality: probably Okinawa Islands.

Label data: “*Halisceptrum gustaviana* var. *magnifolia* Kolliker”.

Reference: Thomson & Rennet, 1927: 126-127.

Remarks: The putative locality is taken from the cited reference.

Virgularia juncea (Pallas) マヒルノヤナギウミエラ

UMUTZ-Cnid-P-34; several fragments.

Locality: Iriomote-jima Island, Okinawa Prefecture.

Collector: probably Hisatomo Nakagawa

Label data: “Loc: Toriomoteshima, ○○○ [illegible], Coll: Nakagawa”.

Reference: Thomson & Rennet, 1927: 127; Imahara, 2006: 9-13.

Remarks: Dry specimens. “Toriomoteshima” on the label appears to be an error for “Iriomote-jima” Island. The first name of the collector was inferred based on a list of students of the University in those days (Isono, 1988).

Virgularia rubra Hickson

ヤナギウミエラ属の一種 (和名未定種)

UMUTZ-Cnid-P-35; four fragments and six colonies.

Locality: Okinawa Prefecture.

Label data: “*Virgularia rubra*”.

Reference: Thomson & Rennet, 1927: 128.

Remarks: The locality was taken from the cited reference.

***Virgularia* sp. 1** ヤナギウミエラ属の一種

UMUTZ-Cnid-P-16; 28 colonies.

Date: 7 July 1914.

Label data: “50 % formalin, July 7 1914”.

Remarks: The slightly reddish color of these specimens resembles that of *V. rubra* Hickson.

The number of autozooids is 12 per polyp leaf, however, while the number in *V. rubra* is 6-8; furthermore, the present specimens have a siphonozooid in the proximal part of each autozooid.

***Virgularia* sp. 2** ヤナギウミエラ属の一種

UMUTZ-Cnid-P-22; 17 colonies.

Date: 4 July 1919.

Label data: “Acetic sublimate July 4, 1919”.

Remarks: The number of autozooids is 12 in a large polyp leaf. No siphonozooids could be seen. The specimens had been stored in formalin.

***Virgularia* sp. 3** ヤナギウミエラ属の一種

UMUTZ-Cnid-P-38; part of one colony.

Locality: Sagami Bay off Jogashima Island, Miura city, Kanagawa Prefecture, 30 fathoms (i.e., 55 m).

Date: 2 May 1925.

Label data: "VIRGULARIA sp. Pennatulacea Alcyonaria, Misaki, Jogashima 30 hiro, 2 / V '25".

Remarks: Very large colony probably over 50 cm in total length.

Family Pennatulidae ウミエラ科

Leiopilus fimbriata (Herklots) フトウミエラ

UMUTZ-Cnid-P-39; one colony.

Locality: Sagami Bay, Okinose Bank (see 7p), 150 fathoms (i.e., ca. 270 m).

Date: 25 November 1897.

Collector: Alan Owston.

Label data: "*Pennatula fimbriata* Herk. var. *sulcata*"; "Name. *Pennatula acuta* Miyashima, Loc. Okinose 150 fms, Date, 25 Nov., 1897, Coll. A. Owston".

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-42; one colony.

Locality: Sagami Bay about 24 km off Niijima Island.

Date: 10 August 1893.

Collector: *Ohnoura-maru*.

Label data: "Name. *Pennatula sulcata*, Loc. About 24 kilometer off Niijima, South of ○○○ [illegible], Idu, Date. 10 Aug. 1893, Coll by Onoura maru"; "No. 144, 新島沖二十町、二十六年八月十日、大の浦丸".

References Thomson & Rennet, 1927: 131-132.

Remarks: This specimen had been stored in formalin.

UMUTZ-Cnid-P-56; one colony.

Locality: (Tokyo Market).

Label data: "*Pennatula sulcata*"; "Loc. Tokyo Market".

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: This specimen had once dried out.

UMUTZ-Cnid-P-57; one colony.

Locality: Sagami Bay, Kishino-yodomi, 100 fathoms (i.e., ca. 180 m).

Date: 8 August 1905.

Collector: Probably Prof. Ijima and Kumakichi Aoki.

Label data: "Loc. Kishino Yodomi, Sagami Bay, Date. 8 Aug. 1905, Coll. P. ○○○ [illegible] and Aoki".

Remarks: "Kishino-yodomi" is probably located southwest of the Miura Peninsula, Kanagawa Prefecture, near Yodomi (see Remarks for UMUTZ-Cnid-P-64). This specimen had been stored in the same jar as UMUTZ-Cnid-P-42.

UMUTZ-Cnid-P-58; one colony.

Locality: Sagami Bay, Dôketsuba (see Remarks for UMUTZ-Cnid-P-8).

Date: August, 1895.

Collector: Prof. Isao Ijima.

Label data: "Loc. Doketsuba, Date 8 / 95, Coll. Prof. Ijima"; "*Pennatula sulcata*".

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-59; one colony.

Locality: Sagami Bay, Dôketsuba (see Remarks for UMUTZ-Cnid-P-8).

Date: 14 [month illegible] 1896.

Collector: Kumakichi Aoki.

Label data: "Name. variety of *Pennatula sulcata*, Loc. Doketsuba, Date 14 ○ [illegible] '96, Coll. Aoki".

Remarks: This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-60; two colonies.

Locality: Sagami Bay, Misaki, Miura city, Kanagawa Prefecture.

Date: August, 1892.

Label data: "Name. *Pennatula fimbriata* Herkl., Loc. Vicinity of Misaki Harbor, Date, August 1892".

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: This specimen had been kept in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-66; one colony.

Locality: Sagami Bay, Gokeba, 150-200 fathoms (i.e., 170-370 m).

Date: 18 June 1902.

Collector: Kumakichi Aoki.

Label data: "*Pennatula sulcata* Köll., Loc. Onigase, Gokeba, south west of Province Awa, 150-200 faths., Date 18 June 1902, Coll. Aoki".

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: "Onigase" is located about 3 km southwest of Mera, Tateyama city, Kanagawa Prefecture; the depth there is shallower than 60 m. "Gokeba" is located about 15 km southwest of Mera, and the depth there is greater than 100 m. This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-69; two colonies.

Locality: Sagami Bay, Yodomi (see Remarks for UMUTZ-Cnid-P-64).

Date: 10 August 1895.

Collector: Prof. Isao Ijima.

Label data: "Name. *Penn. acuta* Myashima, Loc. Ena-line by Mera 2, 10 Aug. 1895, Coll. Prof. Ijima".

Reference: Thomson & Rennet, 1921: 131-132

Remarks: "Ena-line" and "Mera 2" are fishermen's expressions used to pinpoint fishing grounds (see Remarks for UMUTZ-Cnid-P-62 and UMUTZ-Cnid-P-64, respectively). Thomson & Rennet (1921) reported a specimen collected from the same locality in the same month, although the collecting date was the 8th. The present specimens had been stored in the same jar as UMUTZ-Cnid-P-43.

***Leioptilus cf. fimbriata* (Herklots) フトウミエラ**

UMUTZ-Cnid-P-43; one colony.

Locality: Tokyo Bay, Uruga Channel, 31 fathoms (i.e., 57 m).

Date: June, 1899.

Collector: Alan Owston.

Label data: "Name. *Pennatula sulcata*, Köll. Loc. Uruga Channel 31 fath, Date. June 1899, Coll. Owston (O/C. 5428)".

Remarks: The number of teeth on the calyx is two in many cases. In this respect, this colony resembles *Ptilosarcus brevicaulis* Nutting, which was considered to be a synonym of *Leioptilus fimbriata* by Deichmann (1941). The specimen had once dried out.

UMUTZ-Cnid-P-46; one colony.

Locality: Sagami Bay, Yodomi (see Remarks for UMUTZ-Cnid-P-64).

Date: 5 June 1900.

Label data: “*Pennatula sulcata*, 淀 June 5 ‘00”.

Remarks: The number of teeth on the calyx is two in many cases, as in UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-61; three colonies.

Locality: Sagami Bay, Misaki, Miura city, Kanagawa Prefecture.

Date: May, 1895.

Collector: Kumakichi Aoki.

Label data: “Name. *Pennatula sulcata* K., Loc. Vicinity of Misaki, Date, May 1895, Coll. Aoki”.

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: The number of teeth on the calyx is two in many cases, as in UMUTZ-Cnid-P- 43.

This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-67; one colony.

Locality: Sagami Bay about 3 km west of the Misaki Marine Biological Laboratory, Miura city, Kanagawa Prefecture, 60 fathoms (i.e., ca. 110 m).

Date: 2 April 1899.

Label data: “Name. *Pennatula sulcata* K., Loc. About two miles west of Misaki Marine Laboratory, 60 fms., 2 Apr. 1899”.

Reference: Thomson & Rennet, 1927: 131-132.

Remarks: The number of teeth on the calyx is two in many cases, as in UMUTZ-Cnid-P- 43.

This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

UMUTZ-Cnid-P-68; one colony.

Locality: Sagami Bay, Okinose Bank (see Remarks for UMUTZ-Cnid-P-62), 200 fathoms (i.e., 360 m).

Date: October, 1898.

Collector: Alan Owston.

Label data: “Name. *Pennatula acuta* Miyashima., Loc. Okinose, 200 faths., Date. Oct. 1898, Coll. Owston (O. C. 5442)”.

Remarks: This specimen seemed to have been identified by Mikinosuke Miyashima. The number of teeth in the calyx is two in many cases, as in UMUTZ-Cnid-P-43. This specimen had been stored in the same jar as UMUTZ-Cnid-P-43.

Pennatula aculeata Danielssen
ウミエラ属の一種 (和名未定種)

UMUTZ-Cnid-P-41; two colonies.

Locality: off Martha’s Vineyard, Massachusetts, U.S.A, 200-300 fathoms (i.e., ca. 360-550 m).

Label data: “PENNATULA ACULEATA K&D, Pennatulacea, Alcyonaria, Off Martha’s Vineyard, Mass, 200-300 fms”.

Remarks: This specimen had been stored in formalin.

Pennatula murrayi Kölliker ムレイウミエラ

UMUTZ-Cnid-P-26; two colonies.

Locality: Miyagi Prefecture, Namakusa-jima Island in Ishinomaki Bay.

Date: 26 July 1899.

Collector: Probably Akira Iizuka.

Label data: “*Pennatula murrayi*, Namakusa Shima, Prov. Rikuzen, 26 July 1899, Coll. Prof. Inuzauka.”.

- Reference: Thomson & Rennet, 1927: 133-134.
 Remarks: The locality and collector's name were taken from the cited reference, although the label data themselves are very difficult to read.
- UMUTZ-Cnid-P-27; 11 colonies.
 Locality: Sagami Bay, Okinose Bank (see Remarks for UMUTZ-Cnid-P-62), 250 fathoms (i.e., ca. 460 m).
 Date: 2 April, 1894.
 Label data: "*Pennatula murrayi*"; "Loc. Okinose, 250 faths., Date. 2 Apr. 1894, Coll. ○○○ [illegible]".
 Reference: Thomson & Rennet, 1927: 133-134.
- UMUTZ-Cnid-P-29; six colonies.
 Locality: Sagami Bay south of Jogashima, Miura city, Kanagawa Prefecture, 97 fathoms (i.e., ca. 180 m).
 Date: 4 April 1894.
 Label data: "South of Jogashima, Misaki, 97 faths., Date. April 94, Coll. ○○○○ [illegible]".
- UMUTZ-Cnid-P-30; one colony.
 Locality: Sagami Bay, Nakano-yodomi (see Remarks for UMUTZ-Cnid-P-3), 70-100 fathoms (i.e., ca. 130-180 m).
 Date: 3 April 1899.
 Collector: Golden Hind Expedition (Alan Owston).
 Label data: "*Pennatula murrayi*"; "Loc. Nakano-yodomi, west of Misaki Marine Laboratory, 70-100 faths, Date. 3 Apr., 1899, Coll. "Golden Hind".
 Reference: Thomson & Rennet, 1927: 133-134.
- UMUTZ-Cnid-P-37; eight colonies.
 Locality: Sagami Bay, Misaki Harbor, Miura city, Kanagawa Prefecture.
 Date: Autumn, 1904.
 Collector: Toyozo Tsuchida.
 Label data: "*Pennatula murrayi*, Vicinity of Misaki Harbor, Coll. Tsuchida by Teguri-ami, a kind of trawl, Date. Autumn 1904".
 Reference: Thomson & Rennet, 1927: 133-134.
- UMUTZ-Cnid-P-40; three colonies.
 Locality: Sagami Bay, Nakano-yodomi (see Remarks for UMUTZ-Cnid-P-3), 70-100 fathoms (i.e., ca. 130-180 m).
 Date: 3 April 1899.
 Collector: Golden Hind Expedition (Alan Owston).
 Label data: "Name. *Pennatula murrayi*, Loc. Nakano-yodomi, west of Misaki Marine Laboratory, 70 – 100 faths. Date. 3 Apr., 1899, Coll. Golden Hind.
 Reference: Thomson & Rennet, 1927: 133-134.
- UMUTZ-Cnid-P-45; four fragments belonging to two colonies.
 Locality①: Sagami Bay about 3 km west of the Misaki Marine Biological Laboratory, Miura city, Kanagawa Prefecture, 60 fathoms (i.e., ca. 110 m).
 Locality②: Sagami Bay about 5 km west of the Miura Peninsula, Kanagawa Prefecture, 80-130 fathoms (i.e., ca. 150-240 m).
 Date①: 2 April 1899.
 Date②: 9 August 1895.
 Collector①: Alan Owston.
 Collector②: Prof. Kakichi Mitsukuri and Kumakichi Aoki.
 Label data: "Name. *Pennatula murrayi*, Loc. about 2 miles west of Misaki Marine Laboratory, 60 faths., Date 2 Apr. 1899, Coll. Owston (O. C. 5452)", "Loc: Kozuka-line, 80-130 faths., Date 9 Aug. 1895, Coll. Prof. Mitsukuri and Aoki".

Reference: Thomson & Rennet, 1927: 133-134.

Remarks: There are two labels in the jar, presenting the above-mentioned, quite different information. "Kozuka-line" is a fishermen's expression used to pinpoint a fishing ground (see Remarks for UMUTZ-Cnid-P-24).

***Pennatula naresi* Kölliker**
ウミエラ属の一種 (和名未定種)

UMUTZ-Cnid-P-14; seven large and several small fragments probably belonging to two colonies.

Locality: Sagami Bay off Odaiba, Tokyo.

Date: 11 May 1899.

Collector: Alan Owston.

Label data: "*Pennatula naresi*"; "Name. *Pennatula naresi* Köll., Loc. Odaiba Sagami Bay, Date. 11 May 1899, Coll. A. Owston (O. C. 5498)".

Reference: Thomson & Rennet, 1927: 133-134.

Remarks: These specimens had been stored in the same jar as UMUTZ-Cnid-P-28.

UMUTZ-Cnid-P-28; several fragments probably belonging to one colony.

Locality: Sagami Bay, Habu Harbor, Izu-shima, Tokyo.

Date: 18 August 1895.

Label data: "Name. *Pennatula naresi* Kö○○○ [illegible], Ha○○ [illegible] Harbor, Oshima ○○ [illegible] Island, Date. 18 Aug. 1895".

Reference: Thomson & Rennet, 1927: 133-134.

Remarks: The locality name is taken from the cited reference, although the label data themselves are very difficult to read. This specimen had been stored in the same jar as UMUTZ-Cnid-P-14.

***Pennatula cf. naresi* Kölliker**
ウミエラ属の一種 (和名未定種)

UMUTZ-Cnid-P-44; one colony.

Locality: Sagami Bay, Yodomi (see Remarks for UMUTZ-Cnid-P-64), 100-200 fathoms (i.e., ca. 180-360 m).

Date: 26 May 1926.

Label data: "Misaki 100-200 fms., Yodomi, 26 May 1926".

Remarks: This specimen had been stored in formalin and has become almost transparent.

***Pennatula phosphorea* Linnaeus** ヒカリウミエラ

UMUTZ-Cnid-P-52; two colonies.

Locality: Sagami Bay, Dôketsuba (see Remarks for UMUTZ-Cnid-P-8).

Date: 8 August 1895.

Collector: Prof. Isao Ijima.

Label data: "*Pennatula phosphorea* var. *longispinosa*"; "Loc. Doketsuba, 8/VIII/ 95, Coll. Prof. Ijima".

***Sarcoptilus bollonsi* (Benham)**
ウミエラ科の一種 (和名未定属)

UMUTZ-Cnid-P-25; two colonies.

Locality: Sagami Bay, Enoshima, Fujisawa city, Kanagawa Prefecture.

Date: August, 1898.

Collector: Probably Alan Owston and Kumakichi Aoki.

Label data: "Name. *Sarcoptilus australe* K., Loc. Yenoshima, Date. Aug. 1898, Coll. A. Owston"; "*Sarcophyllum bollonsi* Benh, Loc. ○○○○ [illegible], Date, Aug. 1898, Coll. Aoki"; "*Sarcophyllum australe*, K.Aoki".

Reference: Thomson & Rennet, 1927: 141-142.

Family Pteroeididae トゲウミエラ科

Pteroeides cf. breviradiatum Kölliker トゲウミエラ

UMUTZ-Cnid-P-50; one colony.

Locality: Sagami Bay, Misaki, Miura city, Kanagawa Prefecture.

Label data: "PTEROEIDES sp., Pennatulacea, Alcyonaria, Misaki".

Pteroeides bankanense Bleeker フトトゲウミエラ

UMUTZ-Cnid-P-47; one colony.

Label data: "*Pteroeides chinense*".

Reference: probably Thomson & Rennet, 1927: 138

Remarks: The size of this specimen is the same as that of the described specimen reported by Thomson & Rennet (1927) as *P. chinense*, which is probably a synonym of *P. bankanense*.

Pteroeides dofleini Balss

トゲウミエラ属の一種 (和名未定種)

UMUTZ-Cnid-P-51; four colonies.

Locality: Sagami Bay, Misaki, Miura city, Kanagawa Prefecture.

Date: May, 1895.

Collector: Kumakichi Aoki.

Label data: "*Pteroeides dofleini* Bal."; "Locality. Vicinity of Misaki,

North ○○○ [illegible] Miura Peninsula, Date May 1895, Coll. Aoki"; "Name. *Pteroeides griseum* var. *longispinosum* K., Loc. Vicinity of Misaki, north end of Miura Peninsula, ○○○ [illegible], Date. May 1895, Coll. Aoki".

Reference: Thomson & Rennet, 1927: 138-139.

Remarks: The species name on the second label is very doubtful.

Pteroeides sparmanni Kölliker トゲウミエラ

UMUTZ-Cnid-P-48; one colony.

Label data: "*Pteroeides sparmanni*".

UMUTZ-Cnid-P-49; one colony.

Locality: Sagami Bay, Honmoku, Yokohama city, Kanagawa Prefecture, 35 fathoms (i.e., 65 m).

Date: May, 1923.

Label data: "横浜本牧 3.5 hiro, 10, 大正 12 年 5 月".

Pteroeides sp. トゲウミエラ属の一種

UMUTZ-Cnid-P-55; one colony.

Locality: Okinawa Prefecture, 28°10'N–126°2'E to 28°20'N–126°11'E, 64 fathoms (i.e., ca. 120 m).

Date: 22 June 1913.

Collector: Naokatsu Yanagi.

Label data: "28°10'N – 126°2'E to 28°20'N – 126°11'E, 64 faths., June 22 1913, coll. N. Yanaghi".

引用文献

- Balss, H., 1910. Japanische Pennatuliden. In: Doflein, F. (Ed.), Beiträge zur Naturgeschichte Ostasiens, Abhandl. Math.-phys. Klasse K. Bayer. Akad. Wiss., Suppl. –Bd., 1(10): 1-106, pls. 1-6.
- Deichmann, E., 1941. Coelenterates collected on the Presidential Cruise of 1938. Smithsonian Misc. Coll., 99(10): 1-17, 1 pl.
- Herklots, J. A., 1858. Notices pour servir à l'étude des Pennatulides. In: Bijdragen Dierkunde, 30 pp., 7 pls., Amsterdam.
- Hubrecht, A. A. W., 1885. On a new pennatulid from the Japanese Sea. Proc. Zool. Soc. London, 1885: 512-518, pls. 30, 31.
- Ijima, I., 1901. Studies on the Hexactinellida: contribution 1. (Euplectellidae). J. Coll. Sci., Imp. Univ. Tokyo, 15, art. 1: 1-299, pls. 1-14.
- Ijima, I., 1918. A manual of zoology. 18 + 950 + 30pp. Dainihontoshō Publishing Co., Ltd., Tokyo. [飯島 魁, 1918. 動物学提要. 18 + 950 + 30 pp. 大日本図書, 東京].
- Imahara, Y., 1991. Report on the Octocorallia from the Ryukyu Islands of Japan. Bull. Inst. Oceanic Res. & Dev., Tokai Univ., 11/12: 59-94.
- Imahara, Y., 2006a. Rediscovery of *Virgularia juncea* (Octocorallia, Pennatulacea) from a tidal marsh in Okinawa, with a short note on its peculiar behavior. Proc. 10th Internat. Coral Reef Symp.: 9-13.
- Imahara, Y., 2006b. Preliminary report on the alcyonacean and pennatulacean octocorals collected by the Natural History Research of the Sagami Sea. Mem. Natl. Sci. Mus., Tokyo, (40): 91-101.
- Isono, N., 1988. Personnels related to Misaki Marine Biological Laboratory – Birth of Zoology in Japan. vi + 230 pp. Gakkai Shuppan Center, Tokyo. [磯野直秀, 1988. 三崎臨海実験所を去来した人たち – 日本における動物学の誕生. vi + 230 pp. 学会出版センター, 東京].
- Kölliker, A., 1880. Report on the Pennatulidae. Rept. Sci. Res. Voyage H.M.S. Challenger. Zool., 1(2): 1-41, pls. 1-11.
- Kükenthal, W. 1915. Pennatularia. Das Tierreich. 43: i-xv + 132 pp. Verlag von R. Friedländer und Sohn, Berlin.
- Kumano, M., 1936. Pennatulacea collected from Mutsu Bay. Zool. Mag., 48(4): 231. (lecture abstract). [熊野正雄, 1936. 陸奥湾産の海鰓類. 動物学雑誌, 48(4): 231. (講演要旨)].
- Kumano, M., 1937. Japanese pennatulids. Hakubutsugaku Zasshi, 35: 246-256, pl. 11. [熊野正雄, 1937. 日本産の海鰓類. 博物学雑誌, 35(60): 246-256, pl. 11].
- Kumano, M., 1938. Japanese pennatulids. Zool. Mag., (50): 208. (lecture abstract). [熊野正雄, 1938. 日本産の海鰓類. 動物学雑誌, (50): 208. (講演要旨)].
- Kumano, M., 1960. Pennatulacea. In: Colored encyclopedia of the fauna of Japan, 4: 190, pl. 95, Hokuryukan, Tokyo: [熊野正雄, 1960. 海鰓目. In: 原色動物大図鑑 4: 190, Pl. 95, 北隆館, 東京].
- Miyajima, M., 1897. Ecological observations on *Veretillum*. Zool. Mag., 9(107): 367-371: [宮嶋幹之助, 1897. ウミシャボテン (*Veretillum*) の生態学的観察. 動物学雑誌, 9(107): 367-371].
- Miyajima, M., 1900a. Sea pen (*Cavernularia obesa* Val), Zool. Mag., 12: 280-287, 2 pls. [宮嶋幹之助, 1900a. ウミシャボテン (*Cavernularia obesa* Val). 動物学雑誌, 12: 280-287, 2 pls.].
- Miyajima, M., 1900b. Sea pen (*Cavernularia obesa* Val), 2 Ecology, 3 Taxonomy and distributions. Zool. Mag., 12: 426-433, 2 pls. [宮嶋幹之助, 1900b. ウミシャボテン (*Cavernularia obesa* Val), 2 生態、3 分類及び分布. 動物学雑誌, 12(146): 426-433, 2 pls.].
- Nutting, C. C., 1912. Description of the Alcyonaria collected by the U. S. Fisheries Steamer "Albatross", mainly in Japanese waters, during 1906. Proc. U.S. Natl. Mus., 43: 104 pp, 21 pls.
- Thomson, J. A. & W. D. Henderson. 1906. An account of the alcyonarians collected by the Royal Indian Marine Survey Ship "Investigator" in the Indian Ocean. 1. The alcyonarians of the deep sea. Trustees Indian Mus. Calcutta, 16 + 132 pp., 10 pls.

- Thomson, J. A. & N. I. Rennet. 1927. Report on Japanese pennatulids. J. Fac. Sci. Univ. Tokyo (Sect. 4, Zool.), 1(2): 115-143, pls. 7-9.
- Thomson, J. A. & N. I. Rennet. 1931. Alcyonaria Madreporaria, and Antipatharia. Australian Antarctic Exped. Sci. Rept. (C-Zool. and Bot.), 9(3): 1-46, pls. 8-14.
- Thomson J. A. & J. J. Simpson. 1909. An account of the alcyonarians collected by the Royal Indian Marine Survey Ship "Investigator" in the Indian Ocean. 2. The alcyonarians of the littoral area. Trustees Indian Mus. Calcutta, 18 + 319 pp., 9 pls.
- Ueda, M., 1939. Structure of canal system and mesentery of *Virgularia gustaviana* (Herklots). Tosa no Seibutsu, 7:48-51, 3 pls. [植田穂, 1939. うみやなぎ *Virgularia gustaviana* (Herklots) の軸溝及び隔膜の構造. 土佐の生物, 7: 48-51, 3 図].
- Ueda, M., 1941. Structure of canal system and mesentery of *Pteroeides*. Tosa no Seibutsu, 9: 1-4. [植田穂, 1941. とげうみえら *Pteroeides* の軸溝及び隔膜の構造. 土佐の生物 9: 1-4].
- Utinomi, H. 1958. On some octocorals form deep waters of Prov. Tosa, Shikoku. Publ. Seto Mar. Biol. Lab., 7(1): 89-110, pls. 5, 6.
- Utinomi, H. 1961. Noteworthy octocorals collected off the southwest coast of Kii Peninsula, middle Japan. Publ. Seto Mar. Biol. Lab., 9(1): 197-228, pls. 7-10.
- Utinomi, H. 1962. Preliminary list of octocorals of Sagami Bay deposited in the Biological Laboratory of the Imperial Household. Publ. Seto Mar. Biol. Lab., 10(1): 105-108.
- Utinomi, H., 1964. Subclass Octocorallia. In: Illustrated encyclopedia of the fauna of Japan, revised. I, pp. 240-254, Hokuryukan, Tokyo. [内海富士夫, 1964. 八放サンゴ亜綱. In: 新日本動物図鑑 I, pp. 240-257, 北隆館, 東京].
- Utinomi, H., 1975. (Ed.). Colored encyclopedia of the aquatic invertebrate. 342 pp. Gakken Co. Ltd., Tokyo. [内海富士夫 (監), 1975. 水生動物, 342pp. 学研, 東京].
- Utinomi, H. & E. Harada. 1958. A list of bottom animals collected by a trawler "Kaiun-Maru" off the southwest coast of Kii Peninsula. Publ. Seto Mar. Biol. Lab., 6(3): 385-395.

Summary

The pennatulacean collection preserved in the University Museum, the University of Tokyo, contains 69 specimens belonging to 28 species. These specimens were collected between 1890 and 1926 mainly from Sagami Bay, although several specimens were collected from Ishinomaki Bay in Miyagi Prefecture, as well as the Okinawa Islands. A few came from the east coast of the U.S.A. The collectors included several famous Japanese zoologists of those days, such as Kakichi Mitsukuri, the first Japanese Professor of Zoology of Tokyo Imperial University; Isao Ijima, the next Professor following Mitsukuri; Kumakichi Aoki, the famous collector of the early period of the same university's Misaki Marine Biological Laboratory; and Mikinosuke Miyajima. Miyajima was a student of those professors and the first Japanese Professor of Parasitology of Keio University, as well as the first scientist to work on the Pennatulacea in Japan. This collection also includes the materials of Thomson & Rennet (1927). They reported 24 species and one variety of Japanese Pennatulacea, probably at the request of Professor Ijima. Of these, 21 species in 39 lots were rediscovered in the present study, but four species and one variety were not found. The list was made, in principle, according to the recent system outlined by G. C. Williams and S. D. Cairns on the web-site <<http://research.calacademy.org/research/izg/OCTOCLASS.htm>>. The scientific names were determined by the present author based on observation of specimens' external appearance and by reference to the label data and the references cited herein. For each specimen or lot, the scientific name and collecting information are provided in the following order: 1, registration number; 2, number of specimens included in the jar; 3, type status; 4, collecting locality; 5, collection date; 6, collector's name(s); 7, original label data; 8, reference; 9, remarks. The entries are abbreviated if no relevant information was provided on the label or in the references. The traditional Japanese unit for measuring depth, the "hito", is taken here as equivalent to one fathom.

Acknowledgements

I would like to express my cordial thanks to Dr. Rei Ueshima, the University of Tokyo, for offering me the opportunity to examine such an interesting octocorallian collection. My thanks also go to Fumihito Iwase, Head of the Biological Institute on Kuroshio, for his kind help in reading the difficult specimen labels, to Dr. Hiroshi Namikawa, National Museum of Nature and Science, Tokyo, for kindly providing information on the old names of fishing grounds in Sagami Bay, and to Dr. Mark J. Grygier, Lake Biwa Museum, for revision of the English manuscript.