

A revision of Ernst Haeckel's determinations of a collection of Medusae belonging to the Zoological Museum of Copenhagen

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Summary—The collection of medusae sent from the Zoological Museum of the University of Copenhagen to ERNST HAECKEL for identification comprised 231 numbers; from 166 of these the specimens are still in our collection and are the subject of this revision.

Specimens from 12 localities were not identified with certainty by HAECKEL; they belong to 9 different species, 6 of which are described in previous literature, whereas 3 species have been described after the publication of HAECKEL's monograph.

In the collection and the accompanying list 54 species are provided with generic and specific name in HAECKEL's hand-writing. After the revision the actual number of species is reduced to 37.

26 species are designated as new and are represented by their type-specimens or cotypes; 5 of these may be retained as valid species, 3 of them with unaltered generic name; the remaining 21 of HAECKEL's new species belong to 15 species previously described.

Among the 28 species, which are not marked as new, 10 are synonyms, and 8 are erroneously identified.

WHILE ERNST HAECKEL prepared his famous monograph, "Das System der Medusen", which was published in 1879-80, he borrowed the whole collection of medusae belonging to the Zoological Museum of the University of Copenhagen. The Danish zoologist JAPETUS STEENSTRUP had organized a fruitful collecting of marine animals, particularly pelagic ones, by officials in Greenland (inspector OLRİK and others) and captains and physicians on Danish merchant vessels (ANDREA, BANG, HOLBÖLL, HYGOM, etc.) on their journeys to Greenland, the West Indies, South America, India and China. The result was that, until the far-going oceanographical expeditions began with the cruise of the *Challenger* in 1873-76, the museum in Copenhagen possessed one of the greatest collections of marine animals in the world.

The collection of medusae was sent to HAECKEL in Jena accompanied by a detailed list written by CHR. LÜTKEN with (1) provisional determinations by STEENSTRUP and LÜTKEN, (2) localities, (3) names of collectors, (4) an empty column, in which HAECKEL wrote his own determinations of the species. The list, which contains 231 numbers, is still in our museum and is a document of great value, giving us the names of all the species in HAECKEL's own hand-writing (see Fig. 1). The majority of specimens are also still in our collection. Many of them are in a fairly good condition, though they must be handled with care, because they are more or less brittle in consequence of their being preserved in alcohol.

Many of the species described or recorded by HAECKEL have been the subject of much discussion, and it has often been desirable to re-examine the original specimens. It is not to be denied that HAECKEL's artistic temperament and fertile imagination sometimes led him to construct a detailed description and beautiful drawings from an ugly and mutilated specimen. But he also had excellent powers of observation, and when his descriptions and figures are based on living or tolerably well-preserved

specimens, they are usually reliable, though sometimes one must wonder at what he has overlooked (e.g. in “*Hippocrene platygaster*” and “*Thaumantias eschscholtzii*”, see below).

Occasionally some of the specimens in the Copenhagen collection have been re-examined, partly by me (KRAMP, 1919; 1926; 1947, specimens from the northern Atlantic), partly by CL. HARTLAUB (1913, northern Pandeidae) and by G. STIASNY (1922 A, some East-Asiatic Scyphomedusae). Remarks on some tropical Atlantic forms will also be published by me in the near future (*Atlantide Reports* and *Discovery Reports*, in press).

A revision of the whole collection may, however, be useful to future workers on medusae, and in the present paper I shall give a complete list of that part of the old collection which is still in existence. Fortunately, as seen from the list, none of the specimens, which have disappeared, belonged to species which are not represented in the preserved collection. The succession of the species follows the order in which they are mentioned in HAECKEL'S monograph and with HAECKEL'S generic and specific names as head-lines, with the exception of the Narcomedusae, none of which were finally determined by him. In square brackets [] is added the correct name of each species as found by the revision, in so far as it differs from the name given by HAECKEL, or in cases where this latter turned out to comprise two or more species. The figures in common brackets () refer to the numbers in the list.

It is very understandable that HAECKEL, in his worship of beauty, was attracted by these pretty animals. His “*System der Medusen*”, followed immediately by his work on deep-sea medusae in the *Challenger Reports* (1881), is a mile-stone in the progress of our knowledge of the medusae, and this progress soon became rapid, especially when one great expedition after another was sent out to explore the oceans and their inhabitants. No wonder that the knowledge contained in HAECKEL'S works was soon considerably augmented, and the reliability of his apprehension of the observations, or even of the observations themselves, were considered open to doubt. In the present paper I hope to contribute to the removal of some of these cases of doubt.

When the next monograph of medusae appeared in A. G. MAYER'S “*The Medusae of the World*” (1910), H. B. BIGELOW had just published his outstanding work on the medusae of the eastern tropical Pacific (1909) to be followed (*provisionally* until 1940) by many other papers, to which the student of medusae must continually refer for valuable information.

ANTHOMEDUSAE

Codonium princeps Haeckel.

1879, p. 13, Pl. I, figs. 1, 2.

[*Sarsia princeps* (Haeckel).]

The description is based entirely on specimens in the Zoological Museum, Copenhagen. Specimens are still retained from the following localities:

- (8 and 13) Greenland? Mus. zootom. Hafn. 3 specimens.
- (9) Davis Strait and Baffin Bay; BORCH, 1859. 2 specimens.
- (10) Greenland; 1865. 7 specimens.
- (12) Umanak, Greenland; FLEISCHER, 1865 (Neotype). 1 specimen.
- (137) Godhavn, Greenland; OLRİK, 1860. 12 specimens.
- (138) Greenland. 4 specimens.

No. 22 in the list, Greenland, H. P. C. MÖLLER, is determined by HAECKEL as *Sarsia glacialis*; this specimen really belongs to *S. princeps*. HAECKEL'S statement of the colour of the species was based on sketches made by H. P. C. MÖLLER. These sketches are in our museum and they were drawn partly at Frederikshaab in 1839, partly at Godthaab in 1840; they evidently represent *Sarsia tubulosa* and not *princeps*, showing no trace of an apical canal.

No. 11 in the list, taken north of the Faroe Islands by STEINCKE and identified by HAECKEL as *Codonium princeps*, is unfortunately not in the collection. It is very improbable that this species should have been found in this southern locality.

Since no type-specimen was pointed out by HAECKEL, I designate No. 12, Umanak, FLEISCHER, 1865, as *Neotype*.

Sarsia tubulosa

1879, p. 16.

Specimens identified by HAECKEL as *Sarsia tubulosa* are retained from the following localities:

- (15) Iceland; STEINCKE.
- (16) Bordeyri, northern Iceland; STEINCKE. 2 specimens.
- (17) Isafjord, Iceland; MARIBOE, 1865. 2 specimens.
- (18) Faroe Islands; STEENSTRUP, 1844. 2 specimens.

Steenstrupia galanthus

1879, p. 31.

[*Steenstrupia nutans* (M. Sars)]

No. 118 in the list, 49° N. 7° W., off the mouth of the English Channel, HYGOM, 1857, is labelled by HAECKEL *Steenstrupia (rubra)* Forbes?). There are two specimens, belonging to *S. nutans*.

Stomotoca pterophylla Haeckel.

1879, p. 52, Pl. IV, fig. 10.

- (168) 20° 36' N. 76° W., north of Cuba; ANDREA, 1867. 3 specimens, one of which I designate as *Neotype*.

MAYER (1910, p. 113) gives a new description of this species, slightly differing from that of HAECKEL. MAYER presumes that certain errors in HAECKEL'S description are due to the state of preservation of the specimens. It is true that this may account for the absence of an apical projection and the finely serrate inner margin of the ring-canal. The so-called "Ocellarkolben" are rudimentary tentacle bulbs, and they have no ocelli; their number is as stated by HAECKEL, and on the whole the description is in good accordance with the structure of the specimens.

Pandea saltatoria

1879, p. 54.

In the text of his monograph HAECKEL only mentions the original specimen from Norway described by M. SARS (1835) as *Oceania saltatoria* (*Pandea saltatoria* Lesson 1843), a species which has never been identified with certainty, though HARTLAUB (1913, p. 336) is inclined to think that it was an *Aglantha*.

In our collection is a specimen (No. 112 in the list) labelled by HAECKEL *Pandea saltatoria*, 14° N. 25° W., west of the Cape Verde Islands, collected by HYGOM in 1858. It belongs to *Pandea conica* Lesson. The number of exumbrel nematocyst tracks corresponds to the number of tentacles.

Conis cyclophthalma Haeckel.

1879, p. 55, Pl. IV, fig. 1.

[*Oceania armata* Kölliker.]

- (114) 36° 29' N. 2° 28' W., Mediterranean, near Gibraltar; BRANNER. (HAECKEL as the result of misprints gives the longitude as 2° 23' W. and the name of the collector as BRAMER.)

This is the type specimen of *C. cyclophthalma*, and we are fortunate to have it in the collection. MAYER (1910, p. 130) retains the species within the genus *Conis* beside *C. mitrata* Brandt. HARTLAUB (1913, p. 342) has examined the type-specimen, and I can confirm his statement that it belongs to *Oceania armata* Kölliker. Thus *Conis cyclophthalma* is an obsolete name.

Oceania sp.

HAECKEL (1879, p. 56) declares that the generic name *Oceania* is obsolete, but in the list some medusae are mentioned as *Oceania* sp.? One of them, 28–33° N. 60–64° W., HEDEMANN, 1867, has disappeared, the others are in the collection and may be identified as follows:

- (88) 21° S. 57° E., east of Madagascar; ANDREA, 1864, 2 specimens, 5 mm in height, with 8 tentacles; they belong to *Neoturris papua* (Lesson).
 (126) 49° N. 7° W., off the mouth of the English Channel; HYGOM, 1857. 1 specimen, belonging to *Leuckartiara nobilis* Hartlaub.

Tiara pileata.

1879, p. 58.

- (111) 36° 17' N. 3° 27' W. Mediterranean near Gibraltar; BRANNER, 1869. 4 specimens, labelled by HAECKEL: *Tiara pileata* = *Oceania (coccinea)*. They belong to *Pandea conica* Lesson.

Tiara conifera Haeckel.

1879, p. 59.

- (142 and 143) Greenland; OLRİK. 2 specimens.

HAECKEL's description is entirely based on these specimens; they belong to *Catablema vesicarium* (A. Agassiz) as already presumed by HARTLAUB (1913, p. 315).

Tiara reticulata Haeckel.

1879, p. 60, Pl. III, fig. 11.

[*Pandea conica* Lesson.]

- (104) 35° 31' S. 0° 51' W. Atlantic Ocean near Tristan da Cunha; ANDREA, 1862. 2 specimens.

These are the only specimens known, and they belong to *Pandea conica* Lesson, as already stated by HARTLAUB (1913, p. 340).

Nr.	Navnart.	Størrelse	Størrelse	Størrelse	Beskrivelse	
150.	Liripes	350 L. Ø. 290 L. W. - G.	Øst. Lyngs	1870.	Liripes crucifera. Hal. nov. spec.	X
151.	Liripes Kollikani	Mittelmeer	Koplikani	1865	Liripes Kollikani, Gyllb.	in Liripes conspicua.
152.	Mesonema	140 L. Ø. 94 L. W. - G.	Øst. Lyngs		Mesonema gracile Tok.?	X
153.	Mesonema	310 W. 750 L. W. - G.	Øst. Lyngs		Rhopmatoides (Mesonema) sp. ? (juv. eno).	
154.	Mesonema	200 W. 810 L. W. - G.	Øst. Lyngs		Proctonema Mesonema Hal. (Mesonema) sp. ? (juv. eno)	X
155.		200 W. 1060 L. Ø. L. - G.	Øst. Lyngs	1869	Mesonema macrodactylum (Lilljeb. 1869)	X
156.	Agavea	Guinæa strand	Øst. Lyngs	1869	Mesonema sp.	
157.	Agavea	10 miles inden søen Lunda. strand	Lund. strand	1875	Mesonema macrodactylum Tok.?	Land- 1875.
158.	Polyxenica	50 L. Ø. 280 L. W. - G.	Øst. Lyngs		Polyxenica sp.	
159.		290 W. 300 L. W. - G.	Øst. Lyngs	1867	Polyxenica sp.	
160.	Polyxenica		Øst. Lyngs	1867	Polyxenica sp.	
161.	Polyxenica	200 W. 360 L. Ø.	Øst. Lyngs		Polyxenica sp.?	
162.		160 W. 180 L. W. - G.	Øst. Lyngs	1856	Polyxenica sp.?	
163.		Coloni	Øst. Lyngs	1860	Polyxenica jun.?	Arrogant
164.	Thaumantias	130 W. 610 L. Ø. Ø.	Øst. Lyngs		Thaumantias cucurbitata Gyllb.	Arrogant
165.	Thaumantias	Ø. 150. 150 L. W. - G. = 58. 500 L. Ø. Ø.	Øst. Lyngs	1852	Thaumantias (pulsata Tok.) Lunda, u. basis sine gaster?	Arrogant XX
166.		2nd Mus. 10 miles in Lyngs Skjærg.	Øst. Lyngs	1863	Chirophallus (Chirophallus) quadrigatus	Arrogant XX
167.		200 W. 210 L. Ø. 300 L. W. - G.	Øst. Lyngs	1857	Euphyllia sp. (juv. eno) Lunda, u. basis sine gaster	Arrogant XX
168.		200 W. 760 L. W. - G.	Øst. Lyngs	1867	Stomatopoda ptenophylla Hal., anguiform (Lilljeb.)	Arrogant XX
169.		500 W. 1500 L. W. - G.	Øst. Lyngs	1852	Turris distalis Tok.	Arrogant XX

Fig. 1. Fascimile of one of the pages of the list of medusae sent from the Zoological Museum of Copenhagen to ERNST HALCKEL. The right half of the sheet contains the names of the species in HALCKEL's hand-writing.

Turris digitalis.

1879, p.61.

(44) 59° 20' N. 15° 47' W., between Scotland and Iceland; RINK, 1852. 7 specimens.

(47) 58–59° N., between Iceland and Greenland; RINK, 1852. 1 specimen.

(147) 59° 09' N. 16° W., west of Scotland; OLRİK, 1861. 1 specimen.

These specimens were re-examined by HARTLAUB (1913, p. 329) and KRAMP (1926, p. 94). They belong to *Neoturris pileata* (Forskål).

Catablema campanula.

1879, p. 63, Pl. IV, figs. 4, 5.

[*Catablema vesicarium* (A. Agassiz).]

HAECKEL described this as a "nova species?", indicating that it might be identical with *Medusa campanula* Fabricius, 1780. The description was based on the following specimens, which are still in our collection:

(43) Greenland; ZIMMER, 1856. 2 specimens.

(144) Umanak, Greenland; OLRİK, 1853. 7 specimens.

HAECKEL also referred to a coloured sketch by H. P. C. MÖLLER; the sketch is in our museum, and it was drawn after a specimen taken near Frederikshaab in Greenland in 1839; like the preserved specimens it undoubtedly belongs to *C. vesicarium*.

Catablema vesicarium.

1879, p. 64.

In his book HAECKEL only quotes the description of this species as given by A. AGASSIZ (1865) and says nothing about a specimen, which is in the collection, labelled by himself *Catablema vesicarium*:

(45) Greenland; MOBERG, 1857.

Catablema eurystoma Haeckel.

1879, p. 64, Pl. IV, figs. 6, 7.

The description of this species was based on specimens in the museum of Copenhagen and a coloured sketch by H. P. C. MÖLLER, drawn at Qajartalik in Arsuk Fjord in southern Greenland. The species is undoubtedly identical with *C. vesicarium* (A. Agassiz), but the specimens are lost. They were taken in the following locality:

(146) 67° 35' N. 54° 10' W., in South Strömfjord, Greenland; OLRİK, 1866.

Cytaeis nigritina Haeckel.

1879, p. 74, Pl. VI, figs. 2–5.

[*Cytaeis tetrastyla* Eschscholtz.]

On a previous occasion (KRAMP, 1953, p. 263) I have discussed the name of this species. HAECKEL applies the specific name *tetrastyla* only to the original form described by ESCHSCHOLTZ, but refers the numerous specimens from the museum of Copenhagen to a new species, *C. nigritina*. MAYER (1910, p. 133) tried to revive the name *atlantica* Steenstrup, 1837, but, as stated by me, this name was only found in STEENSTRUP'S hand-written catalogue of the collection in our museum and was never published.

The specimens in our collection are derived from the following localities:

- (72, 73) 14° N. 20° W., near Cape Verde Islands; PROSCH. 15 specimens, type specimens of *Cytaeis nigratina*.
 (74) 8° 30' N. 24° W., south of Cape Verde Islands; ANDREA, 1872. 2 specimens, labelled *Nigratina atlantica*.
 (75) 31° 28' N. 29° 39' W., south of the Azores; ANDREA, 1860. 5 specimens, labelled *Nigratina* sp.
 (76) 5° S. 28° W., off Cape San Roque, east coast of Brazil; HYGOM. 2 specimens, labelled *Nigratina* sp. (*polyblasta* ?).
 (77) 23° 03' N. 31° 48' W., N.W. of Cape Verde Islands; MATHIESEN, 1848. 2 specimens, labelled *Nigratina atlantica*.
 (78) 5° 31' N. 23° 15' W., south of Cape Verde Islands; REINHARDT. 1 specimen, labelled *Nigratina atlantica* (?).
 (80) 34° N. 34° W., S.W. of the Azores; HYGOM. 1 specimen, labelled *Nigratina* (*polyblasta*?).
 (81) 6° N. 22° W., south of Cape Verde Islands; HYGOM. 3 specimens, labelled *Nigratina* (*polyblasta*?).
 (89) Atlantic Ocean; HYGOM, 1863. 1 specimen, labelled *Cytaeis nigratina*.

Before the publication of his book HAECKEL had evidently been much in doubt of the most convenient name of this species. The specific name *polyblasta*, applied to some of the specimens in the list, is found nowhere in the monograph; he may have thought about attaching this name to specimens carrying medusa buds.

Cytaeis macrogaster Haeckel.

1879, p. 74, Pl. VI, fig. 1.

[*Cytaeis tetrastyla* Eschscholtz.]

It is generally acknowledged that *C. macrogaster* is merely a synonym of *C. tetrastyla*, and an examination of the present specimens confirms this view.

- (83) 0° S. 29° W., ANDREA, 1866. 2 specimens, designated as the types.
 (84) 1° 20' S. 26° 20' W. ANDREA, 1863. 1 specimen.
 (85) 2° 30' N. 24° W. ANDREA, 1863. 4 specimens.
 (87) 1° 30' N. 24° W. ANDREA, 1863. 3 specimens.

All these localities are at a considerable distance N.E. of Cape San Roque on the east coast of Brazil.

Margelis principis Steenstrup.

1879, p. 88, Pl. VI, figs. 14-16.

The specimens labelled *Margelis principis* belong to two different species: *Bougainvillia principis* Steenstrup, and *B. superciliaris* L. Agassiz.

- (3) Sandvaag, Faroe Islands; STEENSTRUP, 1844. The type-specimen of *Margelis principis*.
 (5) Davis Strait off Holsteinsborg; OLRİK, 1859. 7 specimens.
 (6) Godhavn, Greenland; OLRİK, 1860. 1 specimen.

The specimens from the two last mentioned localities are *Bougainvillia superciliaris*. No. 50 in the list, north of Orkney Islands, collected by OLRİK, 1859, is likewise identified by HAECKEL as *Margelis principis*, but the specimens are not in the collection.

HAECKEL'S figures of *Margelis principis* are said to be based on specimens from Iceland, but no Icelandic locality is mentioned in the list.

Hippocrene platygaster Haeckel.

1879, p. 91.

[*Bougainvillia platygaster* Haeckel.]

- (107) 25° 04' S. 27° 26' W., S.W. of the islands of Trinidad; ANDREA, 1869.
2 specimens, one of which I have designated as the type; by HAECKEL himself named *H. platygaster* n.sp.
- (110) 24° N. 33° W., about 700 miles N.W. of Cape Verde Islands; IVERSEN, 1871.
1 specimen, labelled *Margelis (platygaster?)*.

In my report on the Hydromedusae of the *Discovery* expedition (in press), I have dealt with this species at some length. Numerous specimens were collected by the *Discovery* in the tropical parts of the Atlantic and off the east coast of Africa, and it was also taken by the *Dana* in some localities in West-Indian waters. In my opinion *Bougainvillia platygaster* is a valid species, distinct from *B. carolinensis* (McCrary), *B. fulva* Agassiz and Mayer, and *B. niobe* Mayer. I found that *B. platygaster* exhibits a most peculiar form of asexual propagation and, as a matter of fact, this same form of propagation is also observed in one of HAECKEL'S own specimens (No. 107), but it seems to have escaped his attention; at any rate, he does not mention it in his description.

Hippocrene superciliaris.

1879, p. 92.

[*Bougainvillia superciliaris* L. Agassiz.]

- (1, 2 and 4) 66° 13' N. 55° 05' W., off South Ström fjord, Greenland; MOBERG.
12 specimens.

These specimens really belong to *B. superciliaris*, as also some of the specimens erroneously identified as *B. principis* (see above).

Nemopsis heteronema Haeckel.

1879, p. 93, Pl. V, figs. 6-9.

[*Bougainvillia principis* Steenstrup.]

- (7) Iceland; STEENSTRUP, 1839. 2 specimens.

HAECKEL described these specimens together with some others from Norway collected by himself. As previously pointed out by me (KRAMP, 1926, p. 48; 1939, p. 6) the specimens from Iceland belong to *Bougainvillia principis* (Steenstrup).

Rathkea fasciculata.

1879, p. 97.

[*Köllikerina fasciculata* (Péron & Lesueur).]

- (151) Mediterranean; KEFERSTEIN and EILERS.

In the list as well as on the label this specimen is named *Lizzia köllikeri* Gegenbaur, but in the monograph the name is altered to *Rathkea fasciculata*.

LEPTOMEDUSAE

Thaumantias eschscholtzii Haeckel.

1879, p. 129, Pl. VIII, fig. 4.

[*Tiaropsis multicirrata* (M. Sars).]

(56) Greenland; HOLBÖLL, 1841. 1 specimen.

(58) Greenland, 1865. 2 specimens.

The description of this species was one of HAECKEL'S great mistakes. The beautiful figure is reproduced in several handbooks as a typical "*Thaumantias*", a leptomedusa, without any kind of marginal sense organs. As a matter of fact, it has eight large, black ocelli adjacent to eight large, open marginal vesicles.

When as a young man, in 1915, I commenced my work at the Zoological Museum of Copenhagen, I found the specimens mentioned above, and of course I was very interested to see the type specimens of the famous *Thaumantias eschscholtzii*, but while looking at them through an ordinary hand lens I saw eight black spots on their umbrella margin, and a closer examination revealed the fact that they belonged to the common and well-known *Tiaropsis multicirrata*. This surprising discovery was published by me in the reports of the Danish Ingolf-Expedition (KRAMP, 1919, p. 78; see also my revision of the Mitrocomidae, 1932, p. 364). To my regret "*Thaumantias eschscholtzii*" with a reproduction of the usual figure reappeared in KÜKENTHAL'S "Handbuch der Zoologie", Bd. I, 1924. The author of the article on Hydroida, my friend HJ. BROCH, Oslo, told me that his manuscript was delivered before 1914, and when the printing of the "Handbuch" was resumed after the war, he was not allowed to alter anything in his original text. Since then, however, I think that "*Thaumantias eschscholtzii*" has been regarded as an obsolete name.

Staurostoma laciniata.

1879, p. 130.

[*Staurophora mertensi* Brandt.]

(164) 43° N. 61° 30' W., near Nova Scotia, Canada; HEDEMANN. Fragments of about 5 specimens.

The specimens were labelled *Staurostoma laciniata* Agassiz, and in the monograph it is placed among the Thaumantidae, whereas *Staurophora mertensi* Brandt, which is the same species, is mentioned (p. 149) under the Cannotidae.

Laodice cruciata.

1879, p. 132.

[*Laodicea undulata* Forbes & Goodsir.]

(53, 54) 59° 07' N. 13° 32' W., north of Rockall; MÖBERG. 5 specimens, labelled *Laodice cruciata*.

(140) 59° N. 18' W., between Iceland and Rockall; OLRİK. 3 specimens, labelled *Laodice cruciata*.

(165) 58–59° N. 13–15° W., north of Rockall; RINK, 1852. 5 specimens, labelled *Thaumantias (pilosella?)*.

As demonstrated by BROWNE (1896, p. 482) there is only one single name among HAECKEL'S 25 synonyms of "*Laodice cruciata*", which really refers to a *Laodicea*, viz. "*Thaumantias mediterranea*" Gegenbaur (one of Haeckel's synonyms was

Thaumantias (Cosmetira) pilosella Forbes, which is a Mitrocomid). I have previously discussed the specific name (KRAMP, 1919, p. 21) and adopted the name *undulata* Forbes & Goodsir, which was proposed by BROWNE (1907).

Orchistoma steenstrupii Haeckel.

1879, p. 139, Pl. XV, figs. 3-5.

[*Orchistoma pileus* (Lesson).]

(154) 20° N. 81° W., south of Cuba; HYGOM. 3 specimens.

Two of the specimens are in good condition, and they agree quite well with the new description and figures by MAYER (1910, p. 211, Pl. 25, figs. 1-4), which were based on specimens from near the Bahamas and Tortugas. I agree with MAYER that *O. steenstrupii* is identical with *Mesonema pileus* Lesson (1843) and should be called *Orchistoma pileus*.

Ptychogena pinnulata Haeckel.

1879, p. 148; 1881, p. 7, Pl. II, figs. 1-8.

[*Ptychogena lactea* A. Agassiz.]

(139 and 141) 59° 07' N. 13° 32' W., between Ireland and Iceland; MOBERG, 1857. 3 specimens, one of which is designated as the type.

As previously mentioned by me (KRAMP, 1942, p. 55) this locality is most probably due to a mistake. This species is arctic, circum-polar, and it is hardly possible that it should occur so far to the south in the Atlantic. HAECKEL's figures (1881) are remarkably beautiful and entirely correct.

Irene viridula.

1879, p. 202.

(60) Isafjord, north-western Iceland; MARIBOE, 1865. 1 specimen.

In the list this specimen is identified as *Eirene (viridula?)*. It really belongs to *Eutonina indicans* (Romanes), (see KRAMP, 1919, p. 99).

Mesonema pensile.

1879, p. 226.

(156) Karimata Strait, west of Borneo; CASPERSEN, 1869. 1 specimen, diameter ca. 50 mm, about 125 radial canals and about 21 tentacles. Labelled *Mesonema* sp.

(152) 14° S. 34° W., off San Salvador, east coast of Brazil; HYGOM. 3 specimens, with the following dimensions:

diam.	ca. 65 mm.	ca. 120 radial canals,	ca. 20 tentacles.		
„	ca. 60 mm.	ca. 80	„	„	ca. 16
„	ca. 55 mm.	ca. 90	„	„	? ..

The specimens No. 152 are determined in the list as *Mesonema pensile?* None of the localities are mentioned in the monograph.

In all the specimens the tentacle bulbs are provided with a distinct apical keel and spur; they undoubtedly belong to *Aequorea macrodactyla* (Brandt).

Mesonema macrodactylum Brandt.

1879, p. 226.

[*Aequorea macrodactyla* (Brandt)]

Besides the specimens mentioned above the collection contains one specimen of *Aequorea macrodactyla*, of which the label has been lost. It must have been derived from one of the following two localities, to which HAECKEL has added the determination *Mesonema macrodactylum*:

(155) 2° 04' N. 106° 50' E., near Singapore; ANDREA, 1869.

(157) 10 miles south of Sunda Strait; BARDENFLETH, 1875.

The specimen is about 50 mm in diameter, with about 125 radial canals and about 19 tentacles. None of these localities are mentioned in the monograph.

TRACHYMEDUSAE

Pectyllis arctica Haekel.

1879, p. 266.

[*Ptychogastris polaris* Allman.]

(148, 149) Prøven, about 72° 20' N. on the west coast of Greenland; OLRİK, 1860. 5 specimens.

Besides these specimens HAECKEL examined a specimen taken near Halifax by the *Challenger* expedition in 1873. When he described the species, in 1879, he was not aware that in the previous year it had been described by ALLMAN as *Ptychogastris polaris*.

Aglantha digitalis.

1879, p. 272.

[*Aglantha digitale* (O. F. MÜLLER).]

In the list this species is recorded from numerous localities; specimens are still retained from the following:

(24) 58° 17' N. 30° 59' W. OLRİK, 1859. 6 specimens.

(30) 59° 07' N. 13° 32' W. MOBERG. 10 specimens.

(31) 57° 32' N. 33° 31' W. OLRİK, 1859. 5 specimens.

(32) Northern Atlantic Ocean; OLRİK, 1860. 6 specimens.

(35) 58–59° N., between Iceland and Greenland; RINK. 2 specimens.

(37) Ritenbenk, about 69° 40' N. on the west coast of Greenland; ANDERSEN, 1862. 3 specimens.

(40) 58° 27' N. 26° 43' W. MOBERG, 1857. 4 specimens.

(41) 57° 48' N. 43° 45' W. OLRİK, 1861. 1 specimen.

(128) 57° 43' N. 27° 03' W. BANG, 1868. 8 specimens.

(130) Davis Strait, off Disco, about 69° N. OLRİK, 1862. 10 specimens.

(132) Godhavn, Disco, about 69° 12' N. MOBERG, 1857. 1 specimen.

(134) Umanak, about 72° 40' N., West Greenland; BROCKDORFF. 1 specimen.

HAECKEL altered O. F. MÜLLER's original spelling of the specific name *digitale* to *digitalis*.

HAECKEL has also added the name to two coloured sketches by H. P. C. MÖLLER, made at Fiskenäset and Godthaab in Greenland.

Liriope rosacea.

1879, p. 290.

[*Liriope tetraphylla* (Chamisso & Eysenhardt).]

The record of *L. rosacea* in the monograph is only a quotation from ESCHSCHOLTZ (1829), who described it from near the equator in the Pacific Ocean as *Geryonia rosacea*; but in our collection are several specimens identified by HAECKEL as *L. rosacea* from the following two localities:

(62, 63) 10° N. 105° E., in the Gulf of Siam; STRANDGAARD, 1860. 2 specimens.

(67) Red Sea; H. KOCH, 1872. 6 specimens.

I agree with the authors who unite all the numerous "species" of *Liriope* into one: *L. tetraphylla* Chamisso & Eysenhardt.

Liriope crucifera Haeckel.

1879, p. 290.

[*Liriope tetraphylla* Chamisso & Eysenhardt.]

The description of this new species was based on the following specimen:

(150) 35° S. 24° 30' E., near Algoa Bay on the south coast of Africa; ANDREA, 1870. 1 specimen.

The description is in good accordance with the appearance of the specimen, but I see no reason for keeping the species distinct from *L. tetraphylla*.

Glossocodon lütkenii Haeckel.

1879, p. 293, Pl. XVIII, fig. 5.

[*Liriope tetraphylla* Chamisso & Eysenhardt.]

(65) 30° N. 17° W., north of the Canary Islands; HYGOM, 1857. 1 specimen.

(66) 36–40° N. 26–45° W., west of the Azores; ANDREA, 1861. 1 specimen.

(68) 35° N. 27° W., south of the Azores; HYGOM, 1860. 1 specimen.

The new genus *Glossocodon*, of which this is the type-species, was said to differ from *Liriope* by the absence of interradial tentacles in the adult stage, whereas they are present in young specimens (like that from No. 68); evidently these tentacles were lost by preservation in the other specimens. The species *lütkeni* is further characterized by its very broad gonads, which have a peculiar distal incurvation, forming two lateral angular dilatations. There is no trace of this conformation of the gonads in the specimens Nos. 65 and 68, and in the specimen No. 66 it is distinct in only one of the four gonads. Accordingly there is no reason to retain *L. lütkeni* as a separate species.

NARCOMEDUSAE

Pegasia sieboldii Haeckel.

1879, p. 331.

This new species was described from a single specimen collected by HYGOM in the tropical Atlantic. The specimen is not in our collection, and no "*Pegasia*" is mentioned in the list. According to Mayer (1910, p. 444) the species is probably identical with *Pegasia dodecagona* Péron & Lesueur; this is, however, a doubtful species. HAECKEL'S description seems to me to indicate that *Pegasia sieboldii* should be referred to *Peg-antha triloba* Haeckel.

Genus *Pegantha* Haeckel.

In its modern sense the genus *Pegantha* comprises all the four genera, *Polycolpa*, *Polyxenia*, *Pegasia* and *Pegantha*, which in HAECKEL'S monograph constitute the family Peganthidae. A considerable advance towards a revision of the numerous species of this group was made by H. B. BIGELOW in several papers, first and foremost in his beautiful work on the medusae collected in the eastern tropical Pacific by the S.S. *Albatross* in 1904 and 1905 (BIGELOW, 1909), in which adequate descriptions with pretty and elucidating figures are given of several species, in most cases based on his own examination of the specimens in life, or at least in the fresh condition. Valuable additions to our knowledge of these medusae are given in BIGELOW'S subsequent papers, and by means of the extensive material collected by the *Discovery* expeditions I have recently been able to carry through an almost complete revision of the species belonging to *Pegantha* (to be published in the near future in the "*Discovery Reports*"). This has enabled me to identify the specimens previously examined by Haeckel. None of these specimens were, however, provided with definite specific, or even generic, names, as will be seen from the following notes, and none of the localities are recorded in HAECKEL'S monograph.

There are four species of *Pegantha* in the collection; they are mentioned here under their proper names, as I have identified them, not according to the denominations given by HAECKEL in the list.

Pegantha martagon Haeckel.

Pegantha martagon Haeckel, 1879, p. 332.

(92) 29–31° N. 33–34° W. HYGOM. 3 specimens, determ. *Polyxenia*? sp.

(99) Atlantic Ocean north of the equator; WARMING, 1866. 1 specimen, determ. *Cunina* sp.

Pegantha triloba Haeckel.

Pegantha triloba Haeckel, 1879, p. 333.

(95) Atlantic Ocean south of the equator; FRIIS, 1861. 2 specimens, determ. *Aegineta*?

Pegantha laevis H. B. Bigelow.

Pegantha laevis H. B. Bigelow, 1909, p. 97, Pl. 16, fig. 1, Pl. 20, figs. 4–6,
Pl. 27, figs. 1–7.

(90) 20° N. 40° W., between Africa and the West-Indies; HYGOM, 1860. 2 specimens, determ. *Cunina*? sp.

(94) 22° N. 22° W., between the Canary Islands and the Cape Verde Islands; HYGOM. 1 specimen, determ. *Aegineta* sp.

(97) 25° 05' N. 30° W., N.W. of the Cape Verde Islands; R. NIELSEN, 1868/69. 2 specimens, determ. *Polyxenia*? sp.

(98) No locality given; MATHIASSEN. 1 specimen, determ. *Polyxenia* sp.

(115) West-Indies; SUENSSON. 1 specimen, determ. *Cunina*? sp.

(160) 8° 38' N. 24° 58' W., S.W. of the Cape Verde Islands; MATHIASSEN, 1848. 4 specimens, determ. *Cunina* sp.

Pegantha clara R. P. Bigelow.

Pegantha clara R. P. BIGELOW, 1909, p. 80, 2 figs.

Pegantha smaragdina H. B. BIGELOW, 1909, p. 90, Pl. 14, figs. 1-2, Pl. 19,
figs. 1-9, Pl. 22-26.

(93) 3° S. 27° W., N.E. of Cape San Roque, Brazil; HYGOM. 1 young specimen,
determ. *Polyxenia?* sp.

Aeginopsis laurentii Brandt.

1879, p. 342.

(145) Greenland; HOLBÖLL, 1841. 3 specimens.

HAECKEL has only determined these specimens as *Aegina* sp.?, and they are not mentioned in the monograph. They belong to the high-arctic species *Aeginopsis laurentii* Brandt, 1838.

SCYPHOMEDUSAE

In the collection of the Zoological Museum of Copenhagen are several ancient specimens of Stauromedusae, mainly identified by J. STEENSTRUP. They were not sent to HAECKEL, and the localities where they had been taken are not mentioned in his monograph. They will therefore not be mentioned here.

Some of the specimens belonging to other groups of Scyphomedusae and examined by HAECKEL have been re-examined and correctly identified by G. STIASNY, Leiden, whereas I am responsible for the revision of the others.

Periphylla hyacinthina.

1880, p. 419, Pl. XXIV.

[*Periphylla periphylla* (Péron & Lesueur).]

The collection contains several specimens of this species; all of them had previously been labelled as *Charybdea hyacinthina* by STEENSTRUP who had, however, never published any account of them. In the list as well as in his monograph HAECKEL has altered the name to *Periphylla hyacinthina* Steenstrup, and since the time of HAECKEL this name has usually been accepted. On a previous occasion (KRAMP, 1947, pp. 40 ff) I have discussed the generic as well as the specific name of this medusa. I retained the generic name *Periphylla*, but I came to the conclusion that the specific name *hyacinthina* had to be altered, because STEENSTRUP, who applied it to his specimens, never published it but merely wrote it on the labels of the specimens and in the hand-written journals of the museum, the "Acta Mus. Hafniensis" 1837 and 1842, which are quoted by HAECKEL. As a specific name *hyacinthina* was first used for this species by LÜTKEN (1875) and then by HAECKEL (1879), but the species had been described several times before under different names (for details, see KRAMP, 1947), and to avoid further confusion I stuck to the first indubitable name, *periphylla* Péron & Lesueur, 1809. In my opinion the correct name of this medusa must be *Periphylla periphylla* (Péron & Lesueur).

With one insignificant exception (Greenland, without further particulars, 1842) the specimens determined by HAECKEL are all in our collection, and since the localities have not previously been published in details, it may be desirable to give them here.

- (202, 203, 205, 210, 213) Greenland; MÖLLER, JÖRGENSEN a.o. 8 specimens.
 (206) Godthaab, Greenland; BLOCH, 1845. 1 specimen.
 (207) 57° 28' N. 41° W. OLRİK, 1864. 1 specimen.
 (208) 43° N. 23° W., north of the Azores; HYGOM, 1857. 1 specimen.
 (209) 57° 27' N. 35° W. OLRİK, 1864. 1 specimen.
 (211) 57° 40'–57° 27' N. 35–39° W. OLRİK, 1862 and 1864. 2 specimens.
 (212) Davis Strait; BORCH, 1859. 2 specimens.
 (214) 48° N. 8° W., Bay of Biscay; HYGOM, 1851. 1 specimen.
 (215) 39° N. 13° W., off Lisboa, Portugal; HYGOM, 1863; 1 specimen.
 (217) 46° N. 18° W., off the Bay of Biscay; HYGOM, 1856. 1 specimen.
 (227) 57° 49' N. 35° 24' W. BANG, 1868. 1 specimen.
 (228) S.E. of Cape Farewell; BORCH, 1859. 3 specimens.
 (229) 60° 12' N. 52° 15' W. OLRİK, 1864. 1 specimen.
 (230) 66° 13' N. 55° 05' W. MOBERG. 1 specimen.

With the exception of Nos. 208, 214, 215 and 217 these localities are in the surroundings of the southern parts of Greenland.

Moreover, HAECKEL has applied the name *Periphylla hyacinthina* to coloured sketches by H. P. C. MÖLLER from the following localities: 60° 19' N. 17° W., 58° N. 28° W., 57° 12' N. 53° 58' W., and Julianehaab in Greenland, 1838–1840.

Charybdea marsupialis.

1880, p. 442.

[*Carybdea marsupialis* (Linné).]

- (201) Harbour of Malaga, Mediterranean coast of Spain; HYGOM, 1853. 3 specimens.
 (216) During a journey to the West-Indies; SUENSSON. 1 specimen.

Chiropsalmus quadrigatus Haeckel.

1880, p. 447.

- (166) Indian Ocean off Rangoon; THALBITZER, 1863. 1 specimen.

This is the type specimen; it was re-examined by STIASNY (1922 A, p. 517), who retains the species in spite of its bad condition and refers a second specimen, collected in Johore Strait, 1901–02, to the same species.

Linerges pegasus Haeckel.

1880, p. 495.

[*Linuche unguiculata* (Schwartz, 1788) Eschscholtz, 1829.]

- (105) West-Indies, or on journey to the West-Indies; SUENSSON. 5 specimens.

The description of this species was based partly on specimens from Campeche Bay in the Gulf of Mexico, partly on the present specimens. These latter evidently belong to the widely distributed species *Linuche unguiculata* (Schwartz).

Linerges mercurius Haeckel.

1880, p. 495, Pl. XXIX, figs. 4–6.

[*Linuche unguiculata* (Schwartz).]

- (101) 19° 54' N. 81° 45' W., south of Cuba; CASPERSEN, 1870. 1 specimen.
 (102) 20° 20' N. 73° W., between Cuba and Haiti; ANDREA, 1861. 1 specimen.

This species is undoubtedly identical with *Linuche unguiculata*; at least the present specimens certainly belong to that species.

Linerges draco Haeckel.

1880, p. 496.

(100) 5° N. 107° E., China Sea; CASPERSEN, 1869. 1 specimen.

HAECKEL by a misprint gives the longitude as 107° W. in the China Sea. This is the type specimen. Later on the species has been recorded from the Malayan Archipelago (MAAS, 1903, p. 24) and New Britain (Neu Pommern) N.E. of New Guinea (THIEL, 1927, p. 27). I think we should follow THIEL in regarding it as a valid species.

Liniscus sandalopterus Haeckel.

1880, p. 497.

[*Linuche unguiculata* (Schwartz).]

(167) 2° N. 21° W., off Sierra Leone, West Africa; STRANDGAARD, 1857. 4 specimens.

In his monograph HAECKEL also records this species from the tropical part of the Atlantic collected by KOCH and HEDEMANN, but in the list these specimens are determined as *Liniscus cyamopterus* (see below). *Liniscus sandalopterus* has not been observed, since it was described by HAECKEL, and the specimens evidently belong to *Linuche unguiculata*. *L. sandalopterus* accordingly is an obsolete name.

Liniscus cyamopterus Haeckel.

1880, p. 497.

[*Nausithoë punctata* Kölliker.]

(103) Atlantic Ocean, without particulars; KOCH, 1860. 1 specimen.

(106) Atlantic Ocean; HEDEMANN. 3 specimens.

The specimens are labelled *L. cyamopterus*, and they are provided with the same name in the list; they are, however, large specimens of *Nausithoë punctata* Kölliker.

Pelagia perla.

1880, p. 506.

[*Pelagia noctiluca* (Forskål).]

(177) Northern Atlantic; OLRİK, 1860. 3 specimens.

Pelagia perla is identical with *P. noctiluca*.*Pelagia phosphora* Haeckel.

1880, p. 506.

[*Pelagia noctiluca* (Forskål).]

(170 and 231) 7° N. 22° W. HYGOM, 1850. 3 specimens.

(171) 8° 38' N. 24° 58' W. MATHIASSEN. 1 specimen.

(172) 36° N. 41° W. *Galathea*, 1842. 3 specimens.

(175) 7-13° N. 57° W. HYGOM. 6 specimens.

(174) Atlantic Ocean; HYGOM. 2 specimens.

(178) 11° N. 22° W. HYGOM, 1853. 1 specimen.

(180) Cape Verde Current; PROSCH. 4 specimens.

(225) 14° N. 20° W. PROSCH.

HAECKEL has referred all these specimens to his new species *Pelagia phosphora*, which, however, cannot be kept apart from *P. noctiluca* (Forskål).

A young specimen, labelled *Pelagia* juv., No. 116 in the list, taken in the Bay of Biscay, 47° N. 7° 30' W., likewise belongs to *P. noctiluca*.

Pelagia cyanella Péron & Lesueur.

1880, p. 507.

[*Pelagia noctiluca* (Forskål).](176) No locality stated. *Galathea* exped. 1 specimen, determined *P. cyanella*?*Stenoptycha dactylometra* Haeckel.

1880, p. 526.

Cyanea capillata (L.).

This species is not in the list, and no specimen is preserved, but the coloured drawing by H. P. C. MÖLLER, mentioned by HAECKEL in his monograph, is in our possession. It evidently represents a young *Cyanea capillata* with only 5 tentacles in each of the eight groups.

Cyanea arctica Péron & Lesueur.

1880, p. 530.

[*Cyanea capillata* (L).]

(183) Davis Strait; OLRİK, 1866. 2 specimens.

(220) Greenland; HOLBÖLL, 1841. 1 specimen.

HAECKEL determined these specimens as *Cyanea arctica*. As previously demonstrated by me (KRAMP, 1942, pp. 128 ff) the common *Cyanea* occurring in the Greenland waters and along the east coast of North America differs in no way from the European *C. capillata*.

Aurelia flavidula Péron & Lesueur.

1880, p. 555.

[*Aurelia limbata* Brandt.]

(181) Davis Strait; OLRİK, 1866. 5 specimens.

The complicated history of the Greenland and East-American forms of *Aurelia* was thoroughly dealt with by me in a previous paper (KRAMP, 1942, pp. 109 ff), to which I refer, especially concerning the discussion (p. 122) of the specific names of the two species. The present specimens belong to the yellow form with complexly branching and anastomosing canals described from the northern Pacific by BRANDT (1838) as *Aurelia limbata*. It was probably the same species, which was observed at Greenland by O. FABRICIUS (1780), and it was to this that PÉRON and LESUEUR applied the name *A. flavidula*. Unfortunately, L. AGASSIZ accepted this name for the common American *Aurelia* which, however, belongs to the same species as the European *A. aurita* (L.), though the American form differs somewhat from the European and should be designated as a distinct variety, *A. aurita* var. *occidentalis* (KRAMP, 1942, p. 125).

This variety of *A. aurita* also occurs along the southern part of the west coast of Greenland; it is not mentioned in HAECKEL's list, but to a drawing by H. P. C. MÖLLER of a six-rayed specimen (locality not stated) HAECKEL has added the name *Aurelia flavidula* var. *sex radiis*. Another drawing by MÖLLER (Frederikshaab, 1839) apparently represents *A. limbata*.

Polyclonia frondosa.

1880, p. 568.

[*Cassiopea frondosa* (Pallas).]

(187 and 188) West-Indies; Nat. Hist. Mus. Copenhagen. 2 specimens.

(189) St. Croix, West-Indies; ÖRSTED and RAVN, 1836. 3 specimens.

(190) West-Indies; SUENSSON. 1 specimen.

Polyrhiza vesiculosa.

1880, p. 577.

[*Netrostoma coeruleescens* Maas.]

(185) Gulf of Suez, Red Sea; KOCH, 1872. 1 specimen.

The specimen is mentioned by HAECKEL in his monograph. It was re-examined by STIASNY (1922 A, p. 527), who found that this specimen most probably belongs to *Netrostoma coeruleescens* Maas, and I think he was right in this respect.

Stomolophus fritillaria Haeckel.

1880, p. 598, Pl. XXXV.

[*Stomolophus meleagris* L. Agassiz, var. *fritillaria*.]

(195, 196, 197) Surinam, on the northern Atlantic coast of South America; Mus. zootom. Hafn. 3 specimens.

Haeckel's description and beautiful figures of this species were based on these specimens.

In our collection is a fourth specimen (No. 198 in the list) of unknown origin, likewise identified by HAECKEL as *S. fritillaria*. The locality where it was taken is given as 43° N. 61° 30' W., i.e. near Nova Scotia! The specimen is in an excellent condition, and there is no doubt of the correctness of the identification, but it seems impossible that any of the two species of *Stomolophus* might occur so far to the north; the distribution of both species is decidedly tropical. Evidently the note of the locality, in the label as well as in the list, must be due to some error.

There is no doubt that *Stomolophus agaricus* Haeckel (see below) is identical with *S. meleagris* Agassiz, and *S. chunii* Vanhöffen belongs either to *meleagris* or to *fritillaria*, but the relation between these two latter species has been much discussed.

MAYER (1910, p. 711) regards *S. fritillaria* as a southern variety of *S. meleagris*. "The only valid distinction between this medusa and *S. meleagris* are in its large number of marginal lappets, and in the cleft in the middle of each octant of velar lappets. Also the 16 scapulets are hidden well up under the bell instead of extending down to about the level of the bell margin." Moreover, *S. fritillaria* does not seem to grow to a larger size than 80 mm in diameter, whereas *meleagris* may attain a diameter of 120 mm. BIGELOW (1914, pp. 239-241) likewise unites the two species. STIASNY, however, who examined several specimens from Dutch and British Guiana and Trinidad (STIASNY, 1922 B, pp. 55-59; 1931, pp. 169-175) recognizes *S. fritillaria* as a valid species, though in the latter of these papers he points out so much variability in both forms that he admits that BIGELOW may be right. Unfortunately, STIASNY had not seen the original specimens in Copenhagen; he even states in a footnote (1922, p. 55) that they had disappeared: fortunately, they have been rediscovered in our collection, so I have been able to examine them. BIGELOW (1940, p. 316) once more discussed the question of the two species and concluded that "the union of

meleagris and *fritillaria* may . . . be allowed to stand, at least provisionally". On the other hand, RANSON (1949, pp. 150-154) through a careful examination of specimens from French Guiana and others from the Gulf of California and Ecuador, once more separated the two forms, pointing out several distinguishing features, especially that in *fritillaria* the scapulets are "plus profondement situées dans la sous-ombrelle".

This latter feature, which was emphasized by MAYER as well as by HAECKEL himself, is very distinct in all the original specimens and really seems to be characteristic of *fritillaria*. On the other hand, I can see no indication of the median incurvations of the umbrella margin between the rhopalia, described and figured by HAECKEL. It is difficult to state the exact number of marginal lappets in the original specimens, but as far as I can see, the number of velar lappets does not exceed 12 or 16 in each octant; each lappet is, however, divided into two by a short median line; this was also observed by RANSON in the specimens from Trinidad examined by him.

The specimen labelled 43° N. 61° 30' W. is particularly well preserved and about 60 mm in diameter. One of the three specimens from Surinam is about 50 mm wide and rather badly preserved; another of these specimens is about 80 mm wide and somewhat torn. The largest specimen, from which presumably HAECKEL's figure of the entire medusa was drawn, and which may be designated as the type, has been cut into several pieces.

It seems to me that the differences between *S. fritillaria* and *meleagris* are so slight that they do not justify a distinction of two separate species, but sufficient to regard *fritillaria* as a distinct variety of *meleagris*; so I am inclined to adhere to the views of MAYER and BIGELOW.

Stomolophus agaricus Haeckel.

1880, p. 597.

[*Stomolophus meleagris* L. Agassiz.]

(199) Punta Arenas, Pacific coast of Costa Rica, Central America; ÖRSTED, 1843. 1 specimen.

According to STIASNY (1922 A, p. 553), who has examined the specimen, it may be regarded as belonging to *S. meleagris* L. Agassiz, as already presumed by MAYER (1910, p. 710).

Versura palmata Haeckel.

1880, p. 606, Pl. XL, figs. 9-12.

[*Mastigias ocellata* (Modeer).]

(186) Cheribon, north coast of Java; ANDREA, 1870. 1 specimen.

By a careful examination of the present type-specimen STIASNY (1922 A, p. 538) referred it to *Mastigias ocellata* (Modeer).

Cotylorhiza tuberculata (Macri).

1880, p. 610.

(200) Trieste, Adriatic Sea; STEENSTRUP. 1 specimen. Correctly identified.

Cotylorhiza? (*Stylorhiza?*).

[*Mastigias ocellata* (Modeer).]

(194) 1° N. 104° E., near Singapore; STRANDGAARD. 1 specimen.

STIASNY (1922 A, p. 530) has identified this specimen as *Mastigias ocellata* (Modeer).

Mastigias papua (Lesson).

1880, p. 623.

(191) China Sea, East Asia; KOCH, 1872. 1 specimen.

This locality is mentioned in HAECKEL'S monograph, and the identification is undoubtedly correct.

No. 192 in the list is a fragment collected by STRANDGAARD, 4 S. 106° E. HAECKEL denominated it "Rhizostomae fragmentum". STIASNY (1922 A, p. 529) refers it to *Mastigias papua* (Lesson).

Cramborhiza flagellata Haeckel.

1880, p. 646.

[*Lychnorhiza lucerna* Haeckel.]

(193) Cotinguiba, Brazil; HYGOM. 1 specimen.

HAECKEL mentions this specimen in his monograph as well as in the list as *Cramborhiza flagellata*, together with a specimen from Pernambuco. MAYER (1910, p. 673) regards it as a young stage of *Lychnorhiza lucerna* Haeckel, and STIASNY (1922 C, p. 235) agrees with MAYER in this respect. An examination of the present specimen does not contradict this view. It is in a fairly good condition, about 55 mm wide, and immature. The oral arms are slightly longer than the radius of the umbrella; some few filaments are present, and they are very short. Between two successive radial canals there is usually only one centripetal canal issuing from the ring-canal, but sometimes two, one of which is small.

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