

— 1928. Studies on Japanese Hydromedusae. 2. Trachomedusae and Narcomedusae. Jap. Journ. Zool. vol. II, No. 1, pp. 73-97, figs. 1-9.

Vanhoffen, E., 1927. Siphonophoren. Nordisches Plankton XI, pp. 9-39, 65 figs.

ON THE HYDROMEDUSAE FROM THE SHANTUNG COAST

by

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Most of the Hydromedusae or veiled medusae are the sexual generation of the Hydroids. In an earlier paper, one of the writers, Kao Cheh-Sheng (Kao, 1956), has given the descriptions of 30 species on the Hydroids from the coast of Shantung. The present paper records 33 species of Hydromedusae.

Materials used in this study were collected from the coast of Shantung during 1950-1957, most of which were obtained from Tsingtao, and some from Chefoo and Weihai (north-east of Tsingtao).

Of the 33 species examined some are also found in other places of China, and twenty-seven are here recorded for the first time as occurring in China. The 33 species belong to 26 genera in 16 families, of which one species and two varieties being new to science. Specific descriptions and figures have been given for each species. The species studied and dates of collection are included in the following list:

Order Anthomedusae

Family Corynidae

1. *Sarsia nipponica* Uchida: Tsingtao; April 11, 1957.

Family Tubulariidae

2. *Ectoplaura dumortieri* L. Agassiz: Tsingtao; June 21, 1956.
3. *Hybocodon octopleurus* n. sp. with description.
4. *Euphyes bigelowi* (Mans): Tsingtao; June 10, 1956.

Family Cladonemidae

5. *Cladonema mayeri* Perkins: Chefoo; July 19, 1956.
Family Clavidae
6. *Turritopsis nutricula* McCrady: Tsingtao; August 1955.
Family Bougainvilliidae
7. *Bougainvillia autumnalis* Hartlaub: Tsingtao, Chefoo; June 1956.
Family Pandeidae
8. *Amphinema dinema* L. Agassiz: Tsingtao; November 18, 1956.
9. *Amphinema rugosa* var. *Tsingtauensis* n. var. with description.
10. *Turris vesicaria* A. Agassiz: Tsingtao; July 1, 1956.

Order Leptomedusae

Family Campanulariidae

11. *Obelia dichotoma* Hincks: Tsingtao, Chefoo; September 1955.
12. *Clytia folleata* (McCrady): Tsingtao; June 25, 1956.
13. *Phialidium discoidum* Bigelow: Tsingtao; June 30, 1956.
14. *Phialidium hemisphaericum* Mayer: Tsingtao; June 30, 1956.
15. *Phialidium virens* Maas: Tsingtao, Chefoo; June 1956.
16. *Gastroblacta chengshanensis* Ling: Tsingtao; June 25, 1954; Chefoo, July 11, 1959.

Family Eirenidae

17. *Phortis Pyramidalis* Mayer: Tsingtao; July 1, 1951.
18. *Phortis kambara* (Agassiz & Mayer): Tsingtao; September 10, 1957.
19. *Phortis lactea* var. *Chiaochowensis* n. var. with descriptions, 1956.
20. *Helgicirrha malayensis* Stiasny Tsingtao; all year may be collected.

Family Lovenellidae

21. *Eucheilota ventricularis* McCrady: Tsingtao; September 23, 1956.

Family Aequoreidae

22. *Aequorea coerulea* Brandt: Tsingtao; February-April 1955.
23. *Aequorea conica* Browne: Tsingtao; October 15, 1956.

Family Eutimidae

24. *Octorchis gegenbauri* Haeckel: Tsingtao; September 14, 1956.
25. *Tima formosa* L. Agassiz: Tsingtao; May to July, 1956.

Order Linnomedusae

Family Proboscidaetyliidae

26. *Proboscidaetyla flavicirrata* Brandt: Tsingtao, Chefoo; July 1956.
27. *Proboscidaetyla ornata* var. *gemmaefera* Mayer: Tsingtao; September 27, 1955.

28. *Willisia mutabilis* Browne: Chefoo; July 25, 1956.

Family Moerisiidae

29. *Moerisia lyonsi* Boulenger: Weihai; July 25, 1956.

Family Olindiidae

30. *Gonionemus murbachii* var. *Chekiangensis* Ling: Chefoo; July 13, 1956.

31. *Gonionemus murbachii* var. *oshoro* Uchida: July 13, 1956.

Order Trachymedusae

Family Geryonidae

32. *Liriope tetraphylla* (Chamisso et Eysenhardt) Tsingtao; November 15, 1956.

Order Siphonophora

Family Diphyidae

33. *Diphyopsis chamissonis* (Huxley): Tsingtao; November 15, 1956.

Descriptions of New Species

Hybocodon octopleurus n. sp.

(Plate I. fig.3)

Umbrella bell shaped, nearly spherical; without apical process; with umbrella margin at oblique angle. Jelly thick. Exumbrella with eight meridional nematocyst tracks. Four radial canals and ring canal fairly broad; radial canal on tentacular side longer than that opposite it. Stomach large, cylindrical, about two-thirds the side length of umbrella cavity, never reaching beyond margin in full extension. Mouth simple and tube-like, armed with nematocysts. Velum moderately broad. The largest marginal tentacle with the terminal end enlarged, and a row of much nematocyst batteries along the inner side. The remaining three non-tentacular marginal bulbs greatly reduced to mere endodermal swellings. Gonads completely surrounding stomach, leaving peduncle and mouth free. Height 1.7 mm. Colour: mouth, and tentacular bulb yellowish; stomach greenish.

The present species differs from *Hybocodon prolifer* L. Agassiz in the presence in exumbrella of eight meridional nematocyst tracks instead of five, the largest marginal tentacle with much nematocyst batteries arranged in a row along the inner side.

Locality and date.—Three specimens were collected from the Chefoo harbour, July 11, 1956.

Amphinema rugosa var. *tsingtaensis* n. var.

(plate IV, fig. 1)

Umbrella bell shaped, with large hemispherical apical process. Jelly moderately thick, side of umbrella nearly straight. Two opposite perradial marginal tentacles, very extensile, with large hollow, elongated, conical basal bulbs. Twenty small marginal warts with prominent ocelli on their abaxial-side. Stomach cross-like in section, flask shaped, half the length of umbrella cavity, never reaching umbrella margin. Mouth cruciform with four recurved crenulated lips. Four radial canals and ring canal broad, with slightly jagged outline. Gonads forming three or four folds sloping obliquely downwards towards the interradii on each of the eight adradial surface of the stomach. Height 4-7.5 mm. Diameter 5-10.5 mm. Marginal tentacle bulbs and stomach brownish yellow to orange.

This new variety differs from its type species *Stomatoca rugosa* by having prominent ocelli on the abaxial-side of the tentacle bulbs and warts. The marginal warts very small, not elongated tentaculæ.

Locality and date.—Numerous specimens were collected in the coast of Tsingtao. November 27, 1956.

Phortis lactea var. *chiaochowensis* n. var.

(Plate VI, fig. 1)

Umbrella hemispherical; Jelly in upper portion of umbrella very thick, thin at side of umbrella. Sixteen marginal tentacles with large conical base, each with a group of dark pigments on their abaxial-side, neither lateral nor marginal cirri. Closed marginal vesicles up to sixty or more in number, each with three to four concretions. Stomach short, situated on conical peduncle, never extending beyond umbrella margin. Mouth with four long pointed perradial lips with crenulated margins. Four straight radial canals, and ring canal narrow. Gonads on radial canals, sinuous, usually limited to disk of subumbrella, not extending on the peduncle reaching from near base of peduncle almost to ring canal. Height 8mm. Diameter 12mm. Colourless, except for black pigments on base of marginal tentacles.

This new variety differs from its type species *Phortis lactea* by having dense black pigments on the abaxial-side of the tentacle bulbs; less number of marginal tentacles. Stomach situated on short, large conical peduncle.

Locality and date.—Two specimens were collected from the coast of Tsingtao. June 15, 1956.

圖版說明

圖版I:

- 圖1. *Sarsia nipponica* Uchida 整体側面觀。
 圖2. *Euphysa bigelowi* (Maas)
 A. 伸展時的狀態。
 B. 收縮時的狀態。
 圖3. *Hybocodon octopleurus* n. sp. 整体側面觀。
 圖4. *Bougainvillia autumnalis* Hartlaub 整体側面觀。

圖版II.:

- 圖1. *Ectopleura dumortieri* L. Agassiz 整体側面觀。
 圖2. *Cladonema mayeri* Perkins 整体側面觀。
 圖3. *Turritopsis nutricula* McCrady.
 A. 整体側面觀。
 B. 通過胃基部的橫切面，顯示泡沫狀細胞。
 C. 口層邊緣，顯示刺絲胞羣的排列狀態。
 圖4. *Turris vesicaria* A. Agassiz 整体側面觀。

圖版III:

- 圖1. *Amphinema dinema* L. Agassiz 整体側面觀。
 圖2. *Phortis kambara* (Agassiz & Mayer)
 A. 整体側面觀。
 B. 傘緣放大。
 圖3. *Clytia foliata* (Mc Crady)
 A. 整体側面觀。
 B. 傘緣放大。

圖版IV:

- 圖1. *Amphinema rugosa* var. *tsingtauensis* n. var. 整体側面觀。
 圖2. *Obelia dichotoma* Hincks 整体口面觀。
 圖3. *Phialidium discoidum* Bigelow.

A. 整体口面观。

B. 伞缘放大。

圖版 V:

圖1. *Phialidium hemisphaericum* Mayer

A. 整体侧面观。

B. 伞缘放大。

圖2. *Gastroblasta chengshanensis* Ling

A. 整体侧面观。

B. 伞缘放大。

圖3. *Phialucium-virens* Maas

A. 整体侧面观。

B. 伞缘放大。

圖4. *Phortis pyramidalis* Mayer

A. 整体侧面观。

B. 伞缘放大。

圖版 VI:

圖1. *Phortis lactea* var. *Chiaochowensis* n. var.

A. 整体侧面观。

B. 伞缘放大。

圖2. *Helgicirrha malayensis* Stiasny

A. 整体口面观。

B. 伞缘放大。

圖3. *Aequorea coerulescens* Brandt

A. 整体侧面观。

B. 伞缘放大。

圖版 VII:

圖1. *Aequorea conica* Browne

A. 整体侧面观。

B. 整体口面观。

C. 傘緣放大。

圖2. *Proboscidaetyla flavicirrata* Brandt 整體側面觀。

圖3. *Gonionemus murbachii* var. *Oshora* Uchida 整體側面觀。

圖版Ⅳ：

圖1. *Octorchis gegenbauri* Haeckel

A. 整體側面觀。

B. 傘緣放大。

圖2. *Proboscidaetyla ornata* var. *gemmifera* Mayer 整體側面觀。

圖3. *Willsia mutabilis* Browne 整體側面觀。

圖4. *Moerisia lyonsi* Boulenger

A. 整體側面觀。

B. 整體反口面觀。

C. 觸手球放大。

圖5. *Diphyopsis chamissonis* (Huxley) 整體側面觀。

圖版Ⅴ：

圖1. *Eucheilota ventricularis* McCrady

A. 整體口面觀。

B. 傘緣放大。

圖2. *Tima formosa* L. Agassiz

A. 整體側面觀。

B. 傘緣放大。

C. 平衡囊放大。

圖3. *Liriops tetraphylla* (Chamisso et Eysenhardt) 整體側面觀。

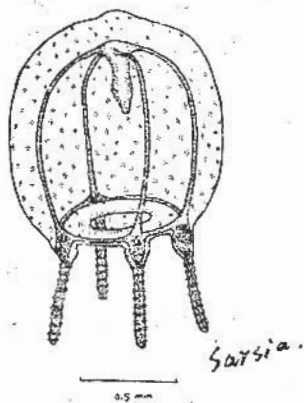
圖4. *Gonionemus murbachii* var. *chaliangensis* Ling

A. 整體側面觀。

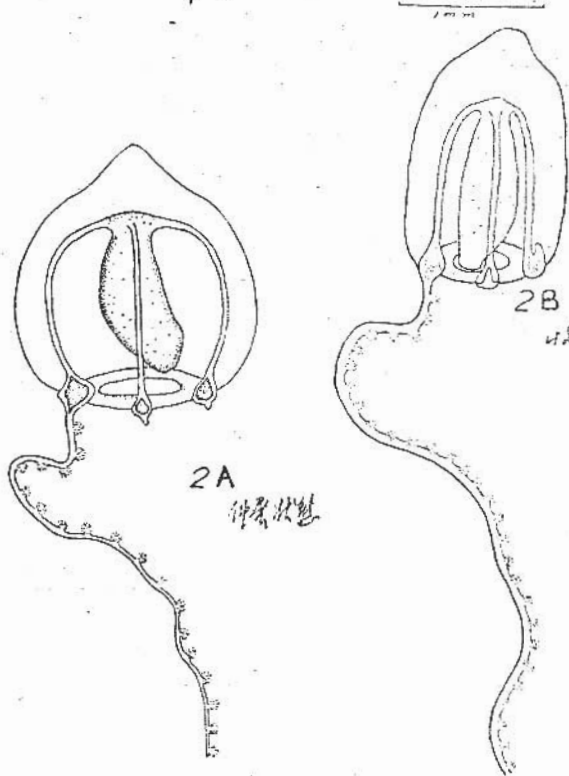
B. 傘緣放大。

C. 觸手的一段及其附屬物。

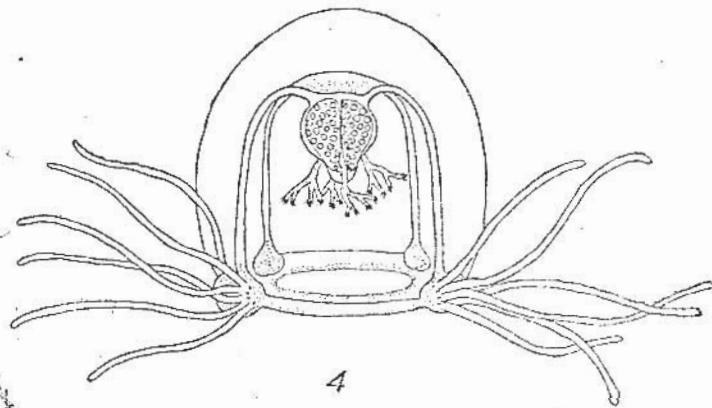
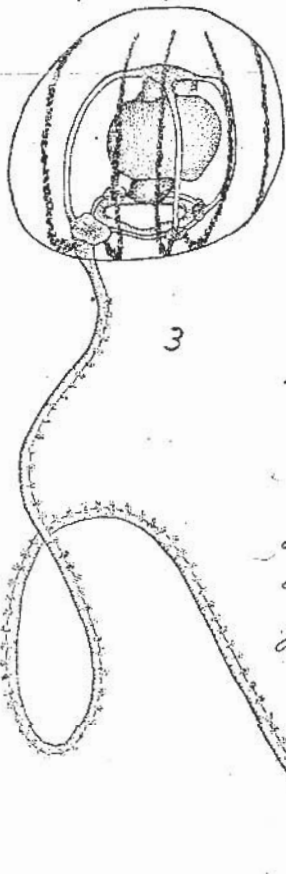
1. *Sarsia nipponica*



Euphysa bigelowsi



Hybocodon octoplexus n. sp.

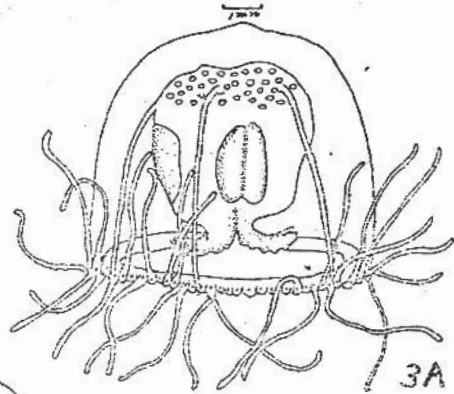
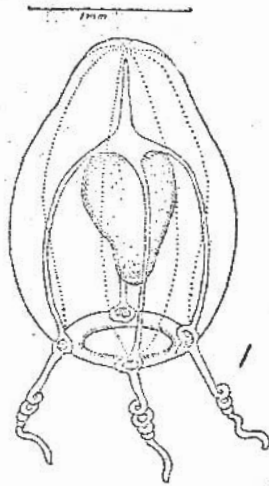


Beroë villia autumnalis
Kroyer & B. autumnalis
42 B. TAMURA.

Ectopleura dumortieri

Turritopsis nutricula

圖板II



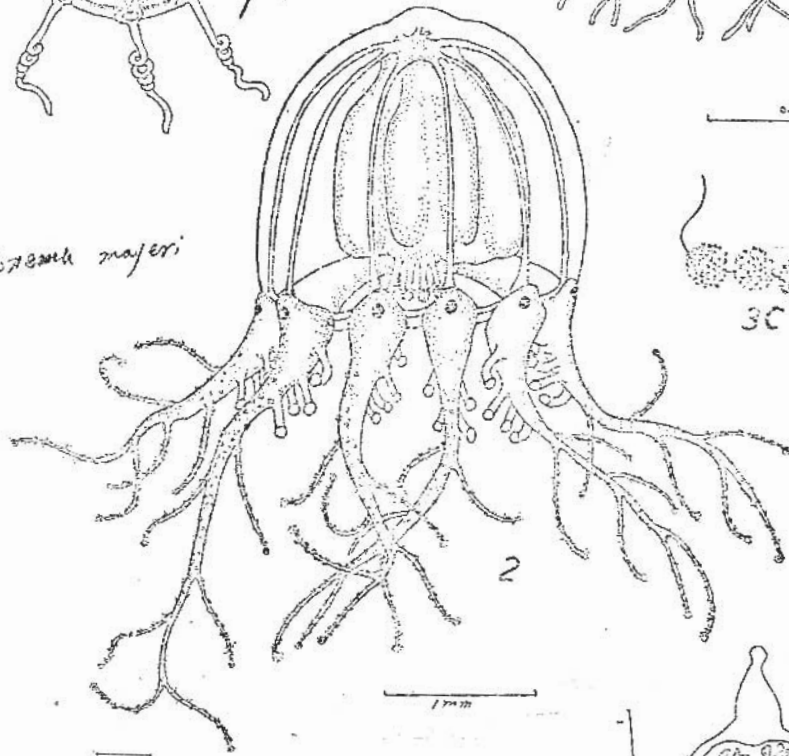
0.5 mm



3C

口觸手

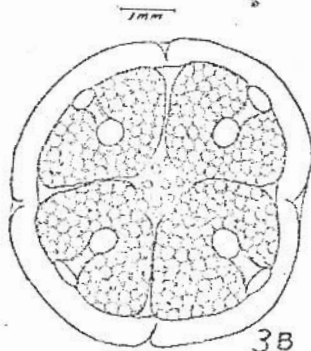
Cladonema majeri



2

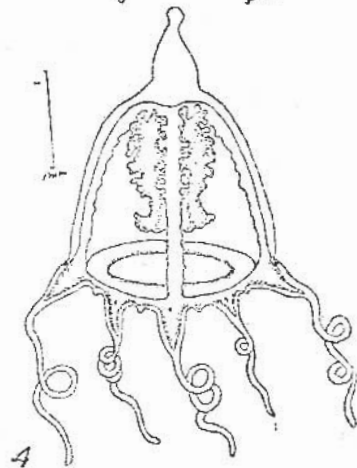
Cladonema majeri

Farris Vesicaria



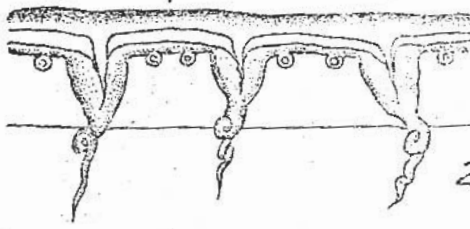
3B

口觸手
Farris Vesicaria

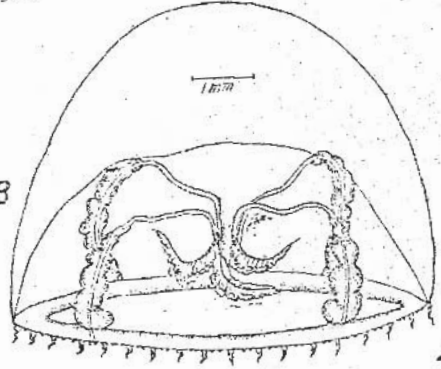


4

Phortis kamohara
Cirene

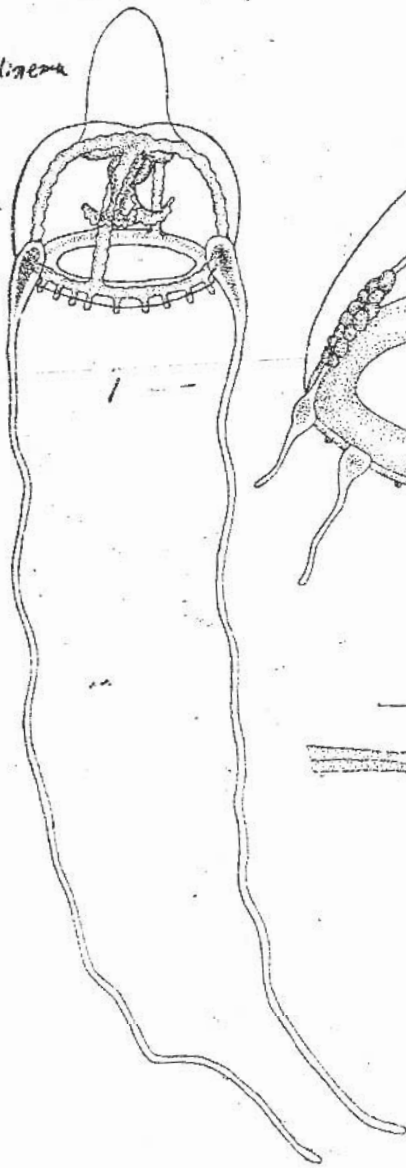


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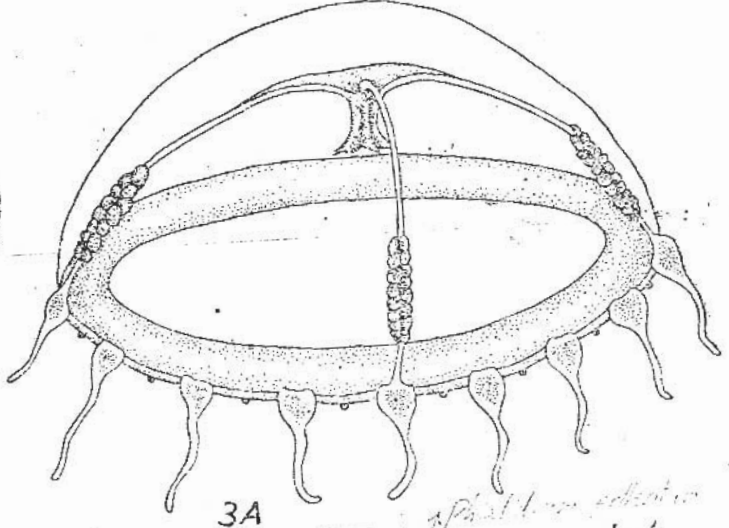


2A

Amphineura dinema

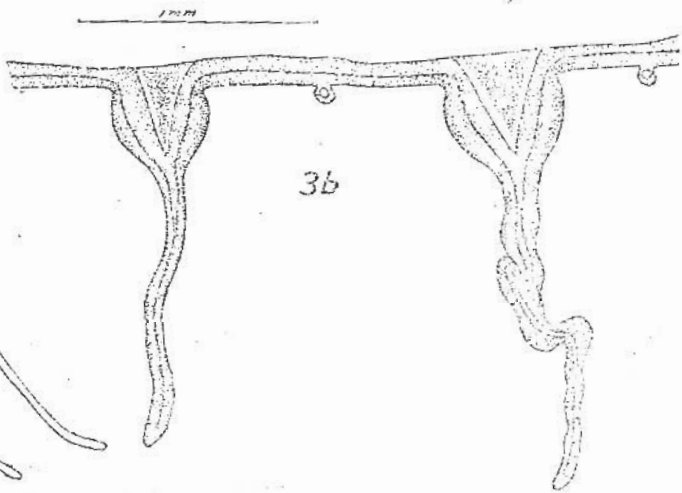


1



3A

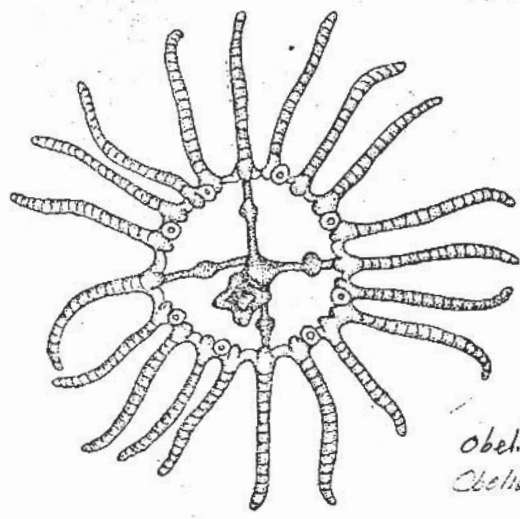
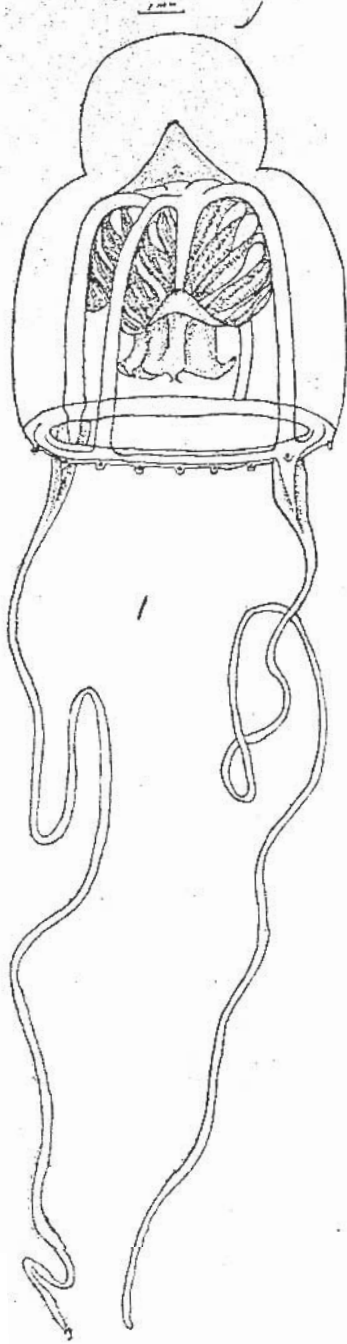
Phyllonura adhaerens
Clytia foliata



3B

Physalia physalis var. *tsingtaoensis* n. var.

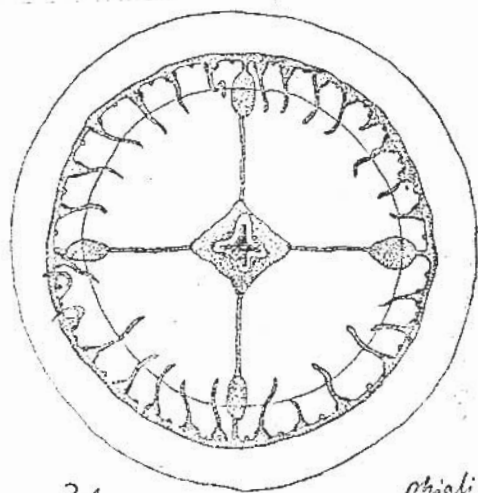
圖板IV



Obelia dichotoma
Obelia spp.

2

1mm

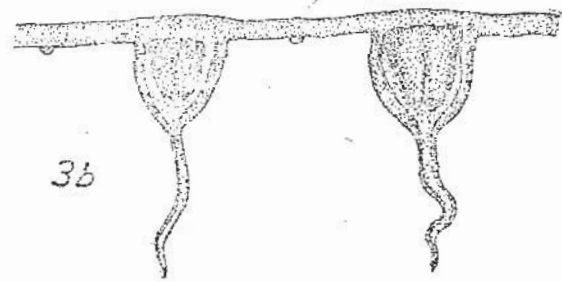


Phialidium discoidum
Phialidium spp.

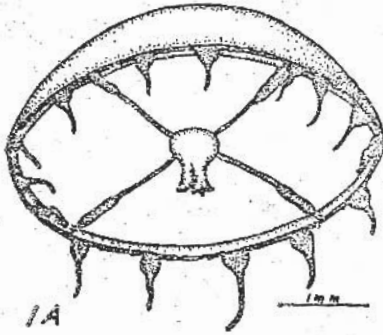
3A

1mm

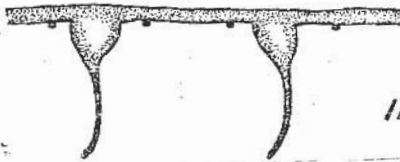
0.5mm



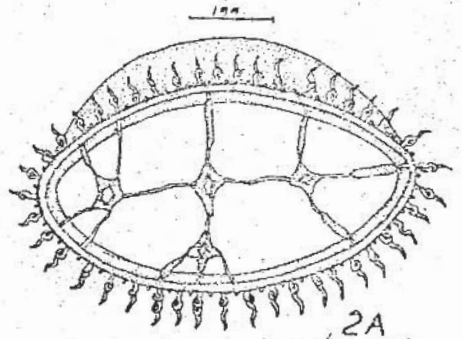
3b



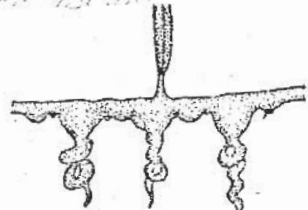
1A
Phialidium hemisphaericum



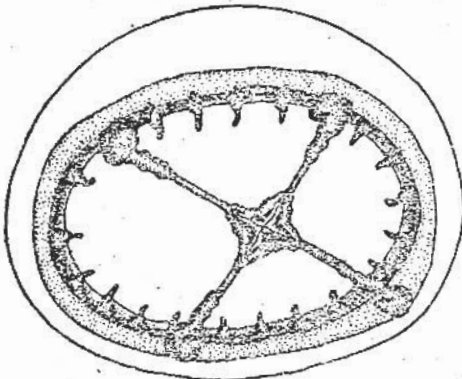
1B



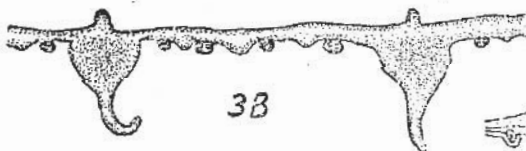
2A
Gastroblasta chengshanensis



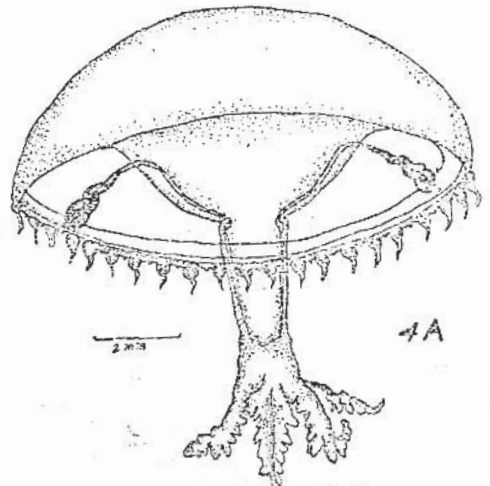
2B



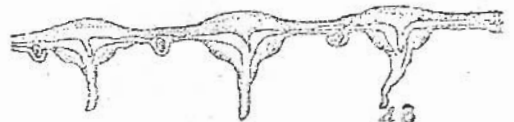
3A
Phialucium virens



3B

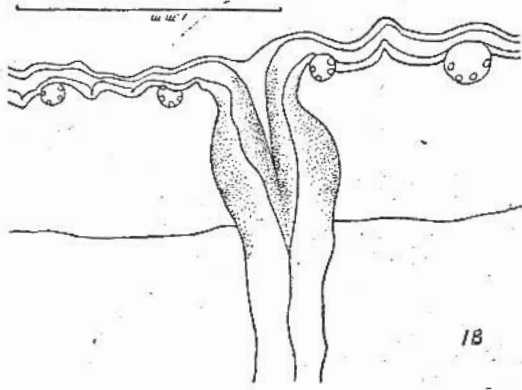
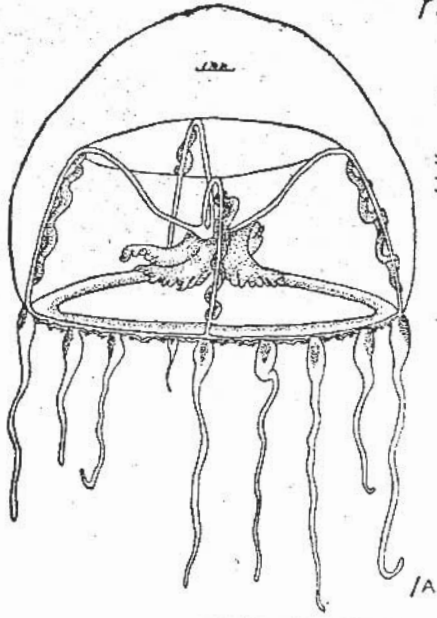


4A
Phalaris pharidis

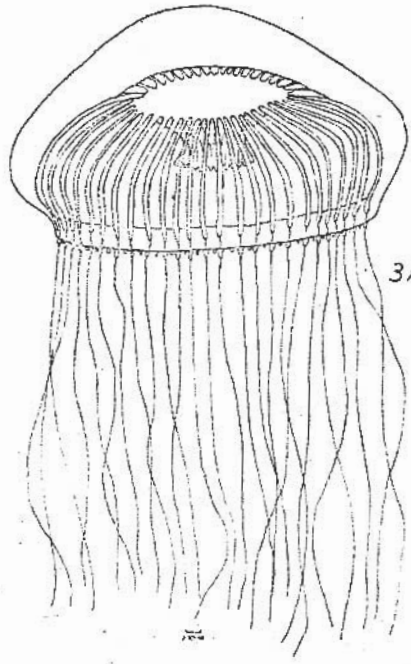
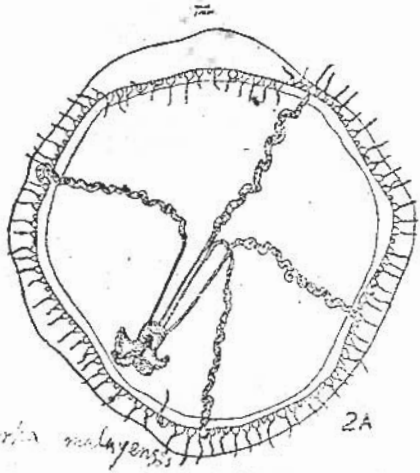


4B

Physalia lactea var. *chiaochowensis* 圖板VI
n. var.

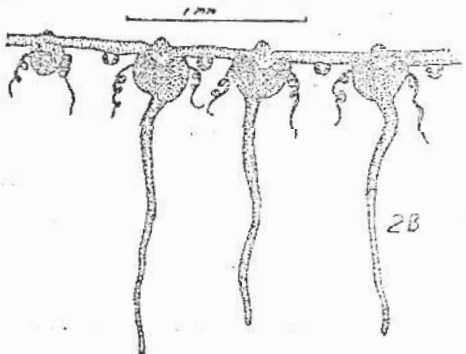


1B

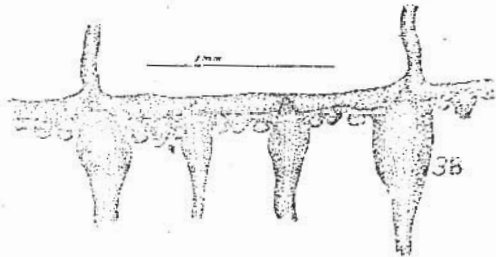


3A

Aequorea
coerulea



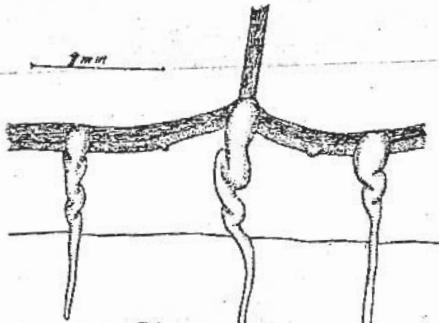
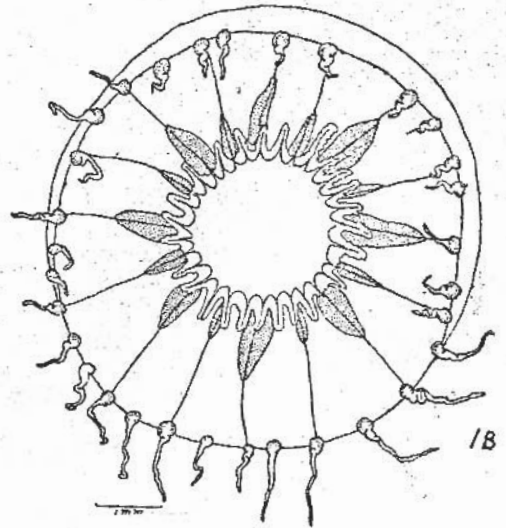
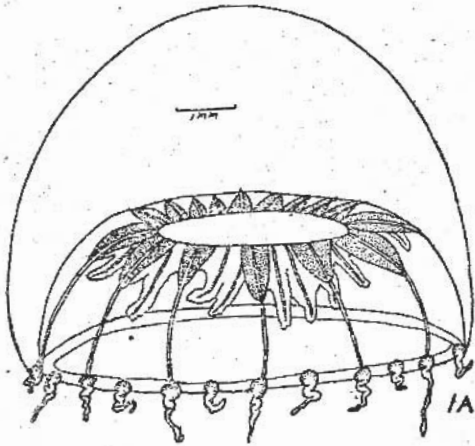
2B



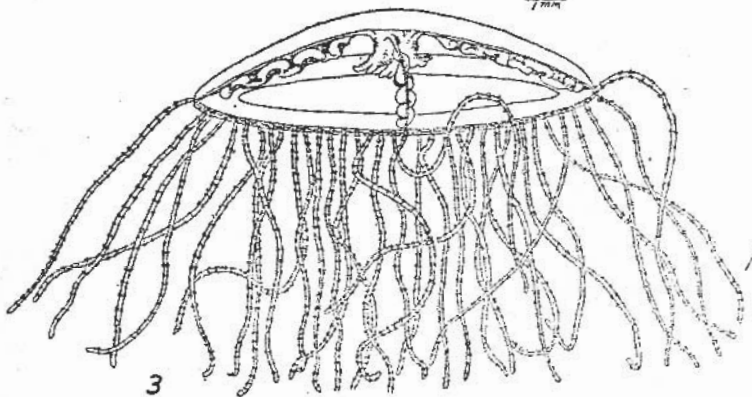
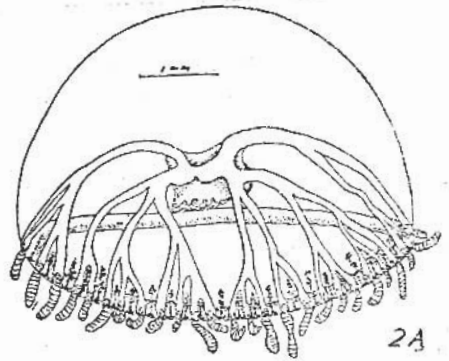
3B

Aequorea conica

圖板四



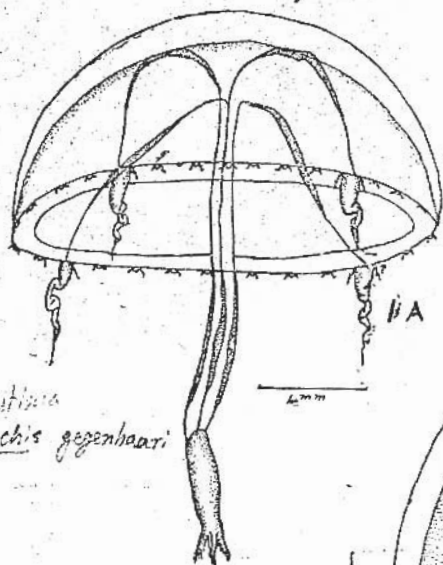
Proboscidaactyla flavicirrata



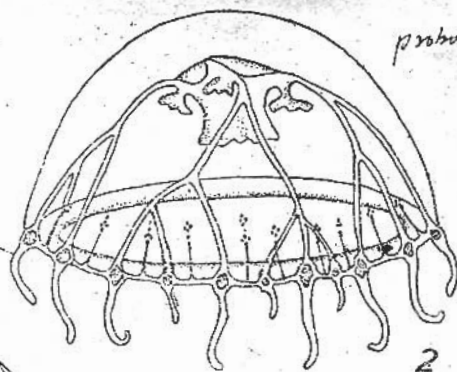
Gontozemus murbarhii var. 'Osora'

G. murbarhii

圖板VII



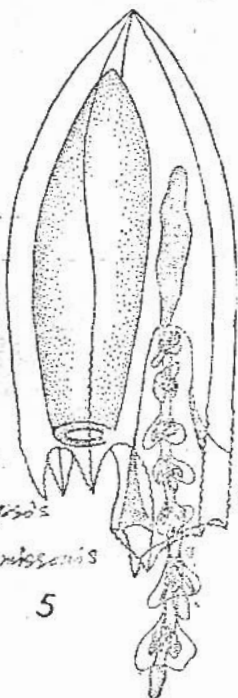
Eutima strobilis gegenhaari



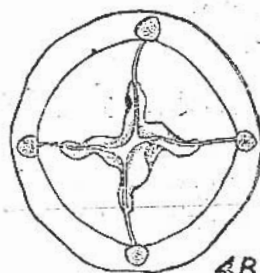
Proboscoidactyla ornata
var. *gemmifera*



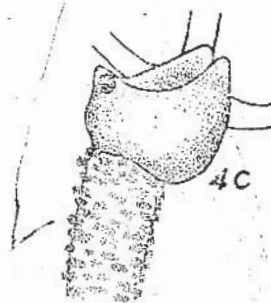
1B



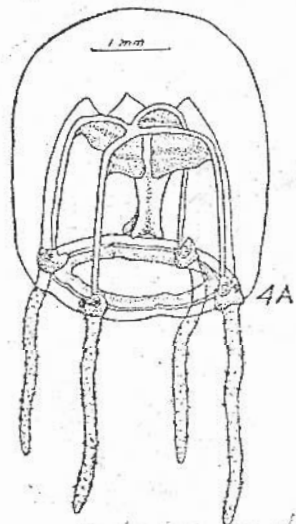
Diplopsis charissensis



4B

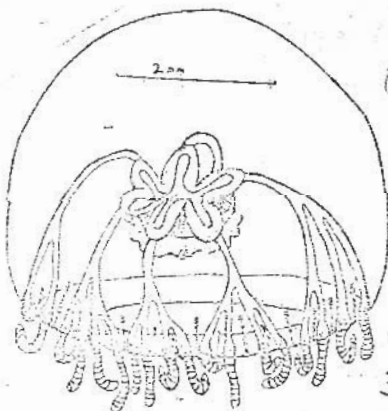


4C



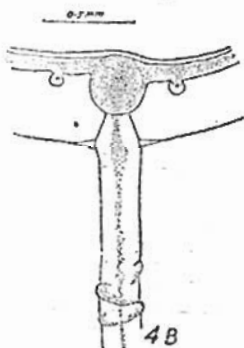
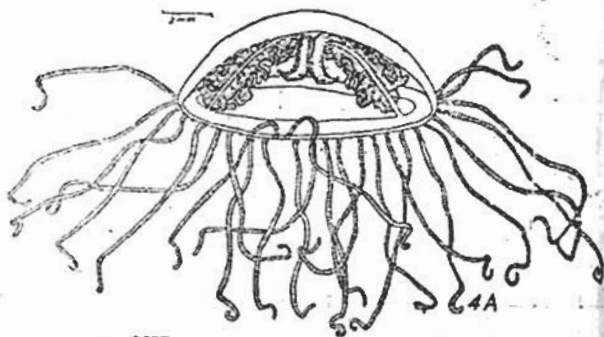
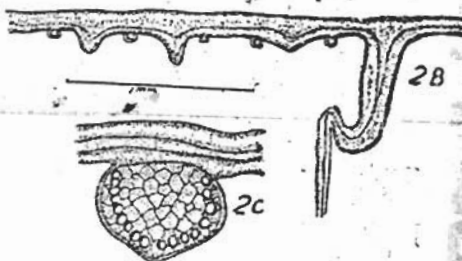
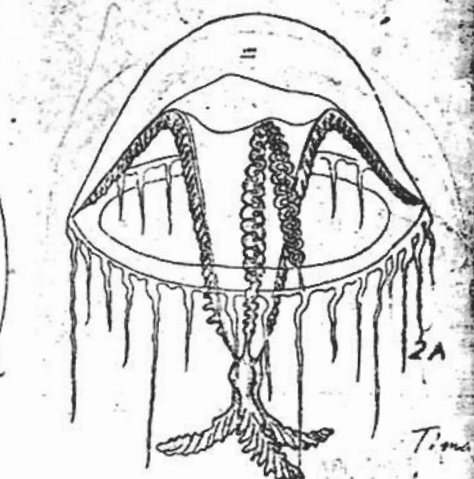
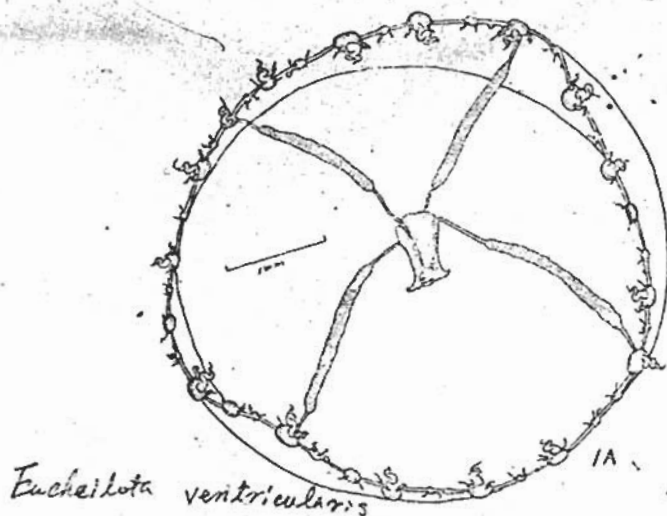
4A

Proboscoidactyla ornata
var. *gemmifera*



Wilsia mutabilis

10种



Liriope tetraophylla

Geniozoona murbachii var. *Geniozoona*