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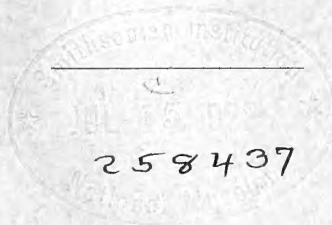
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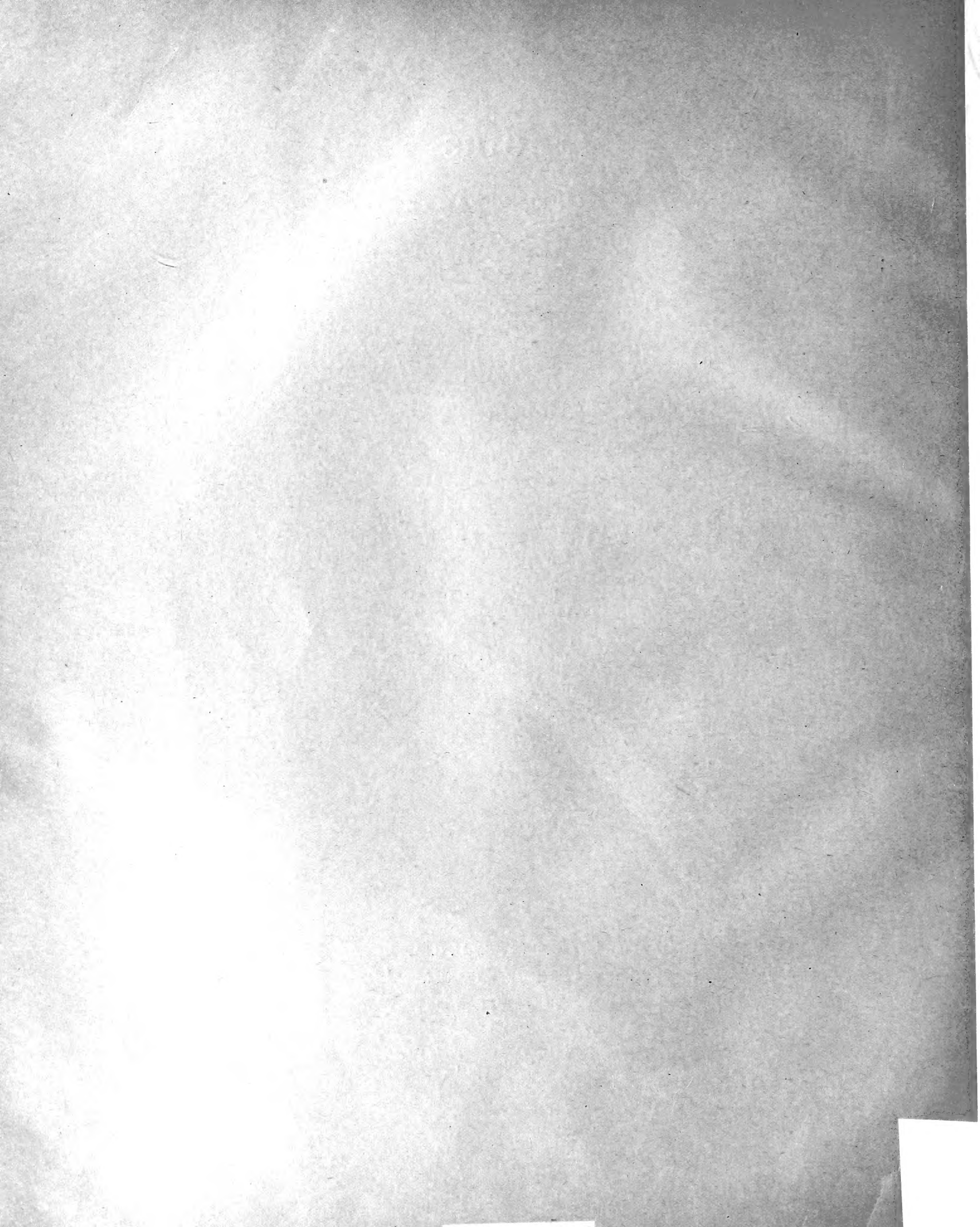
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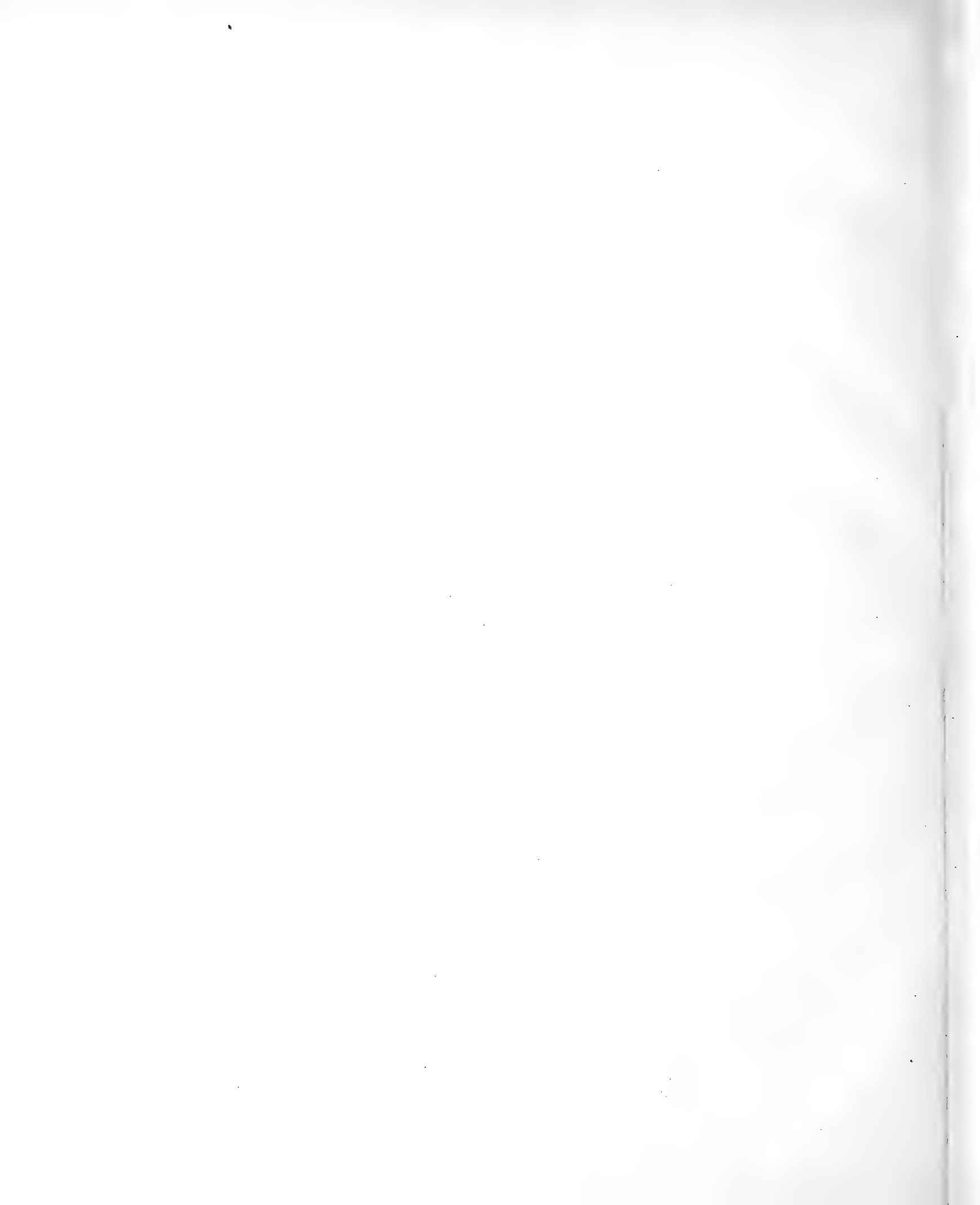
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VOL. XLII.

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REPORTS ON THE SCIENTIFIC RESULTS OF THE EXPEDITION TO THE EASTERN TROPICAL PACIFIC, IN CHARGE OF ALEXANDER AGASSIZ, BY THE U. S. FISH COMMISSION STEAMER "ALBATROSS," FROM OCTOBER, 1904, TO MARCH, 1905, LIEUT. COMMANDER L. M. GARRETT, U. S. N., COMMANDING, AND OF OTHER EXPEDITIONS OF THE "ALBATROSS," 1891-1899.

XXIX.

THE SPONGES.

3. HEXACTINELLIDA.

By ROBERT VON LENDENFELD.

WITH ONE HUNDRED AND NINE PLATES.

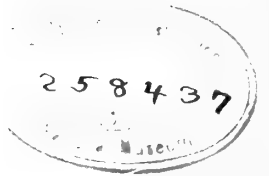
PLATES.

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JUNE, 1915.







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REPORTS on the Scientific Results of the Expedition to the Eastern Tropical Pacific, in charge of ALEXANDER AGASSIZ, by the U. S. Fish Commission Steamer "Albatross," from October, 1904, to March, 1905, Lieut. Commander L. M. GARRETT, U. S. N., Commanding, and of other expeditions of the "Albatross," 1891-1899. XXIX. THE SPONGES. 3. Hexactinellida. By ROBERT VON LENDENFELD. 397 pp. 109 Plates. June, 1915.



PLATE 1



PLATE 1.

**Calycosilva cantharellus** LENDENFELD.

Figs. 1-8, 20-24 — var. **helix** Lendenfeld.

Figs. 9-19, 26, 29 — var. (A) **simplex** Lendenfeld.

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3, 4.— The tyle of a centrotyle rhabd of the body-skeleton of var. *helix*; magnified 2000; u.v. phot.  
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5-13.— Hypogastral pentactines; magnified 30; phot. Zeiss, planar 20 mm.:  
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25-29.— Large spined rhabds of the stalk and its junction with the body of var. *simplex*; magnified 30;  
phot. Zeiss, planar 20 mm.:  
25, 27, 28, of (B); 26, 29, of (A).

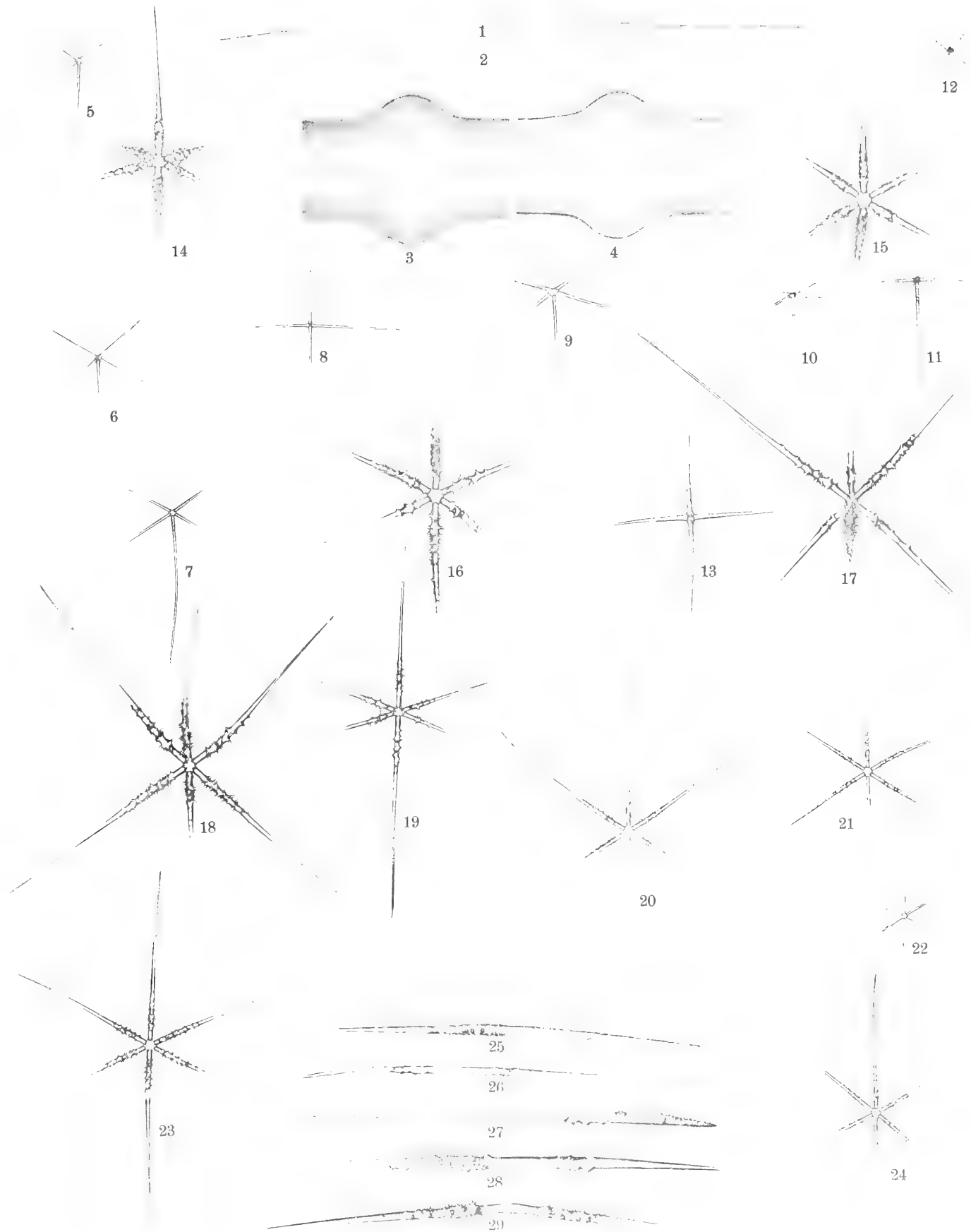


Fig. 1-29 *Calycosilva cantharellus* n. sp.  
1-8, 20-24 *C. c. var. helix*; 9-19, 26, 29 *C. c. var. simplex* (A); 25, 27, 28 *C. c. var. simplex* (B).



PLATE 2.

PLATE 2.

*Calycosilva cantharellus* LENDENFELD.

Figs. 1-2, 4-6, 14, 16 — var. (A) **simplex** Lendenfeld.

Figs. 3, 7-13, 15 — var. **helix** Lendenfeld.

- 1.— Part of an axial, longitudinal section through the upper end of the stalk and the adjacent (central) part of the body of var. *simplex* (A); magnified 20; phot. Zeiss, planar 20 mm.:  
a, dermal pinule-fur; b, dense subdermal masses of longitudinal rhabds.
- 2.— Part of the surface of a shortened and very strongly spined hexactine ray of var. *simplex* (A); magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 3.— Part of a radial section through the choanosome of var. *helix*; magnified 120; phot. Zeiss, apochr. 8, compens. oc. 6:  
a, onychhexasters; b, helonychhexaster.
- 4.— Central part of a large hexactine of var. *simplex* (A); magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 5.— Central part of a large spined rhabd from the junction of the stalk to the body of var. *simplex* (A); magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 6.— Central part of a large hexactine of var. *simplex* (A); magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 7.— Part of a radial section through the choanosome of var. *helix*; haematoxylin; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
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- 8.— Part of the surface of the stalk of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
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- 9.— Central part of a large hexactine with one ray reduced in length, of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 10.— Apical view of a hypogastral oxypentactine of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 11.— Central part of a large hexactine of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
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- 13.— Part of the lower, dermal surface of the body of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
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- 14.— Portion of the central part of a large hexactine with one ray reduced in length, of var. *simplex* (A); magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 15.— Central part of a large hexactine of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 16.— Portion of the central part of a large hexactine of var. *simplex* (A); magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.



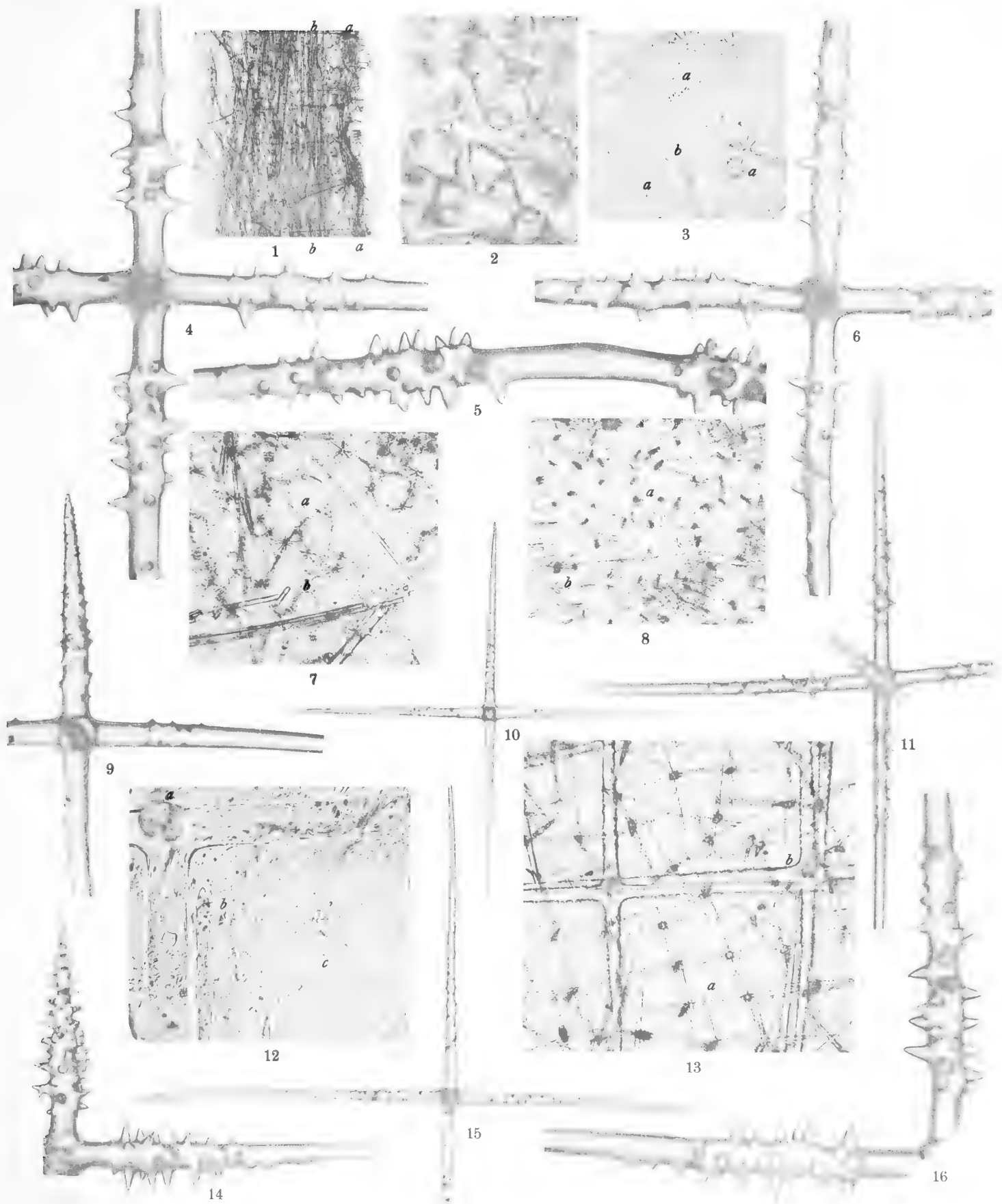


Fig. 1-16 *Calycosilva cantharellus* n. sp.  
1, 2, 4-6, 14, 16 *C. c.* var. *simplex* (A); 3, 7-13, 15 *C. c.* var. *helix*.

Lendenfeld photographed

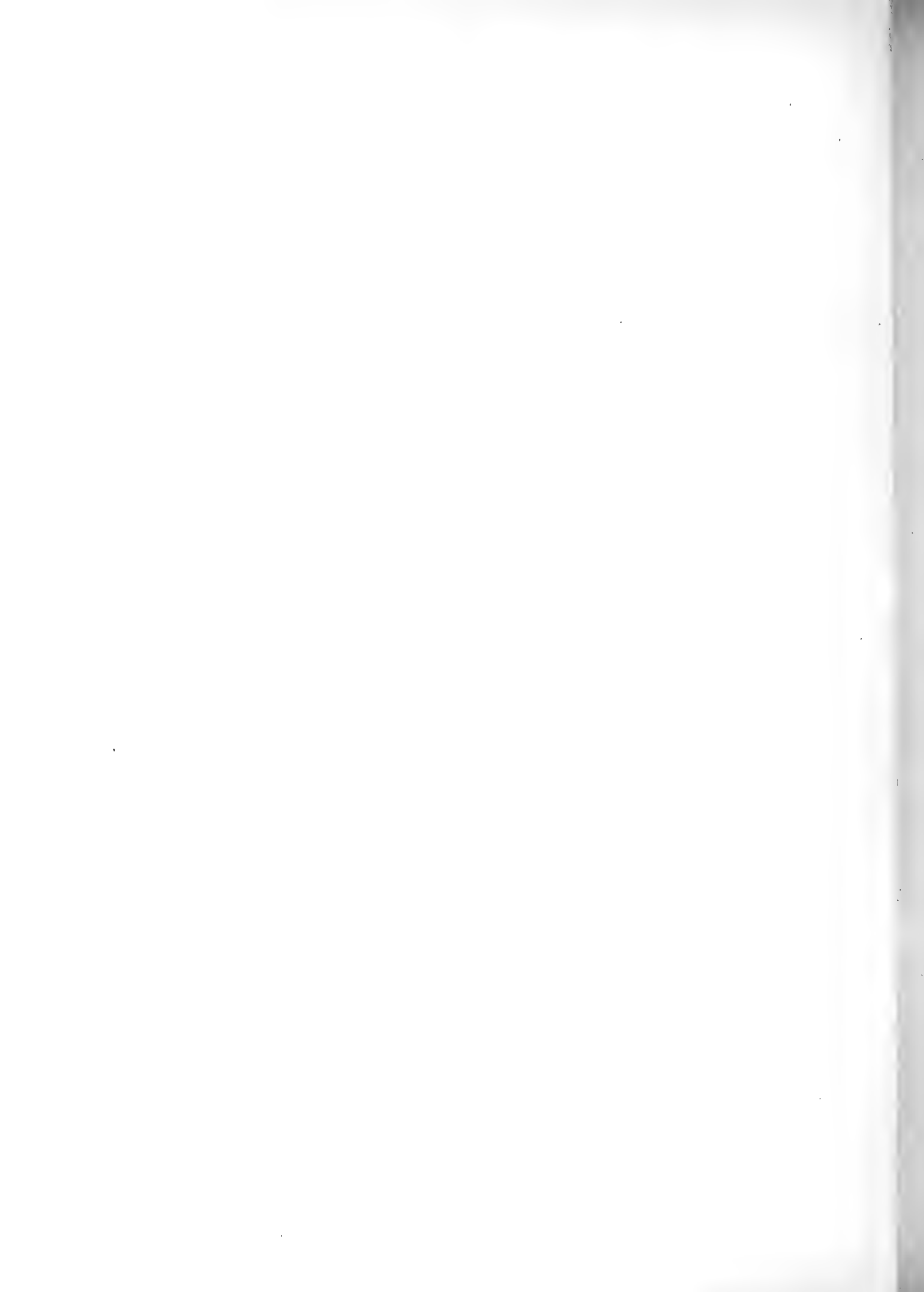


PLATE 3.

PLATE 3.

*Calycosilva cantharellus* LENDENFELD.

Figs. 1-5, 8-30 — var. *helix* Lendenfeld.

Figs. 6, 7 — var. (A) *simplex* Lendenfeld.

- 1.— Minute stronglylohexaster of var. *helix*; magnified 600; phot. Zeiss, H. I. 1/12, compens. oc. 6.
- 2, 3.— Irregular elongated onychhexaster of var. *helix*; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 2, focussed higher; 3, focussed lower.
- 4, 5.— Onychhexaster-derivate oxyhexaster of var. *helix*; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 4, focussed lower; 5, focussed higher.
- 6, 7.— Irregular onychhexaster of var. *simplex* (A); magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 6, focussed higher; 7, focussed lower.
- 8-20.— Helonychhexaster of var. *helix*; magnified 600; phot. Zeiss, H. I. 1/12, compens. oc. 6:
  - 8, 9, side-view of a helonychhexaster with the lateral end-rays uniformly and strongly curved throughout:
    - 8, focussed higher; 9, focussed lower;
  - 10, 11, side-view of a helonychhexaster with the larger proximal parts of the lateral end-rays strongly curved in one direction and their smaller distal parts slightly curved in the opposite direction;
    - 10, focussed higher; 11, focussed lower;
  - 12, 13, oblique view of a helonychhexaster with the proximal parts of the lateral end-rays strongly curved, their distal parts nearly straight;
    - 12, focussed higher; 13, focussed lower;
  - 14, apical view of a helonychhexaster with the proximal parts of the lateral end-rays curved for a greater or smaller extent and the distal parts fairly straight;
  - 15, 16, apical view of a helonychhexaster with the larger proximal parts of the lateral end-rays strongly curved in one, and their smaller distal parts slightly curved in the opposite direction;
    - 15, focussed higher; 16, focussed lower;
  - 17, apical view of a helonychhexaster with the larger proximal parts of the lateral end-rays strongly curved in one, and their smaller distal parts slightly curved in the opposite direction;
  - 18, apical view of a helonychhexaster with the proximal parts of the lateral end-rays strongly curved, the distal parts fairly straight;
  - 19, apical view of a helonychhexaster with the larger proximal parts of the lateral end-rays strongly curved in one direction and their smaller distal parts slightly curved in the opposite direction;
  - 20, oblique view of a helonychhexaster with the proximal parts of the lateral end-rays strongly curved in one direction, their distal parts slightly curved in the opposite direction.
- 21-27.— Onychhexasters of var. *helix*; magnified 600:
  - 21-26, phot. Zeiss, H. I. 1/12, compens. oc. 6;
  - 27, u. v. phot. Zeiss, q. monochr. 6, q. oc. 10;
    - 21, 22, small onychhexasters with a small number of stout end-rays;
    - 23, small onychhexasters with a larger number of end-rays;
    - 24, 25, larger onychhexasters with a larger number of end-rays;
      - 24, focussed higher; 25, focussed lower;
    - 26, 27, large onychhexasters with a small number of end-rays.
- 28-30.— The distal parts of three end-rays of onychhexasters of var. *helix*; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 28, 29, with three or four terminal lateral spines;
  - 30, with one terminal lateral spine.



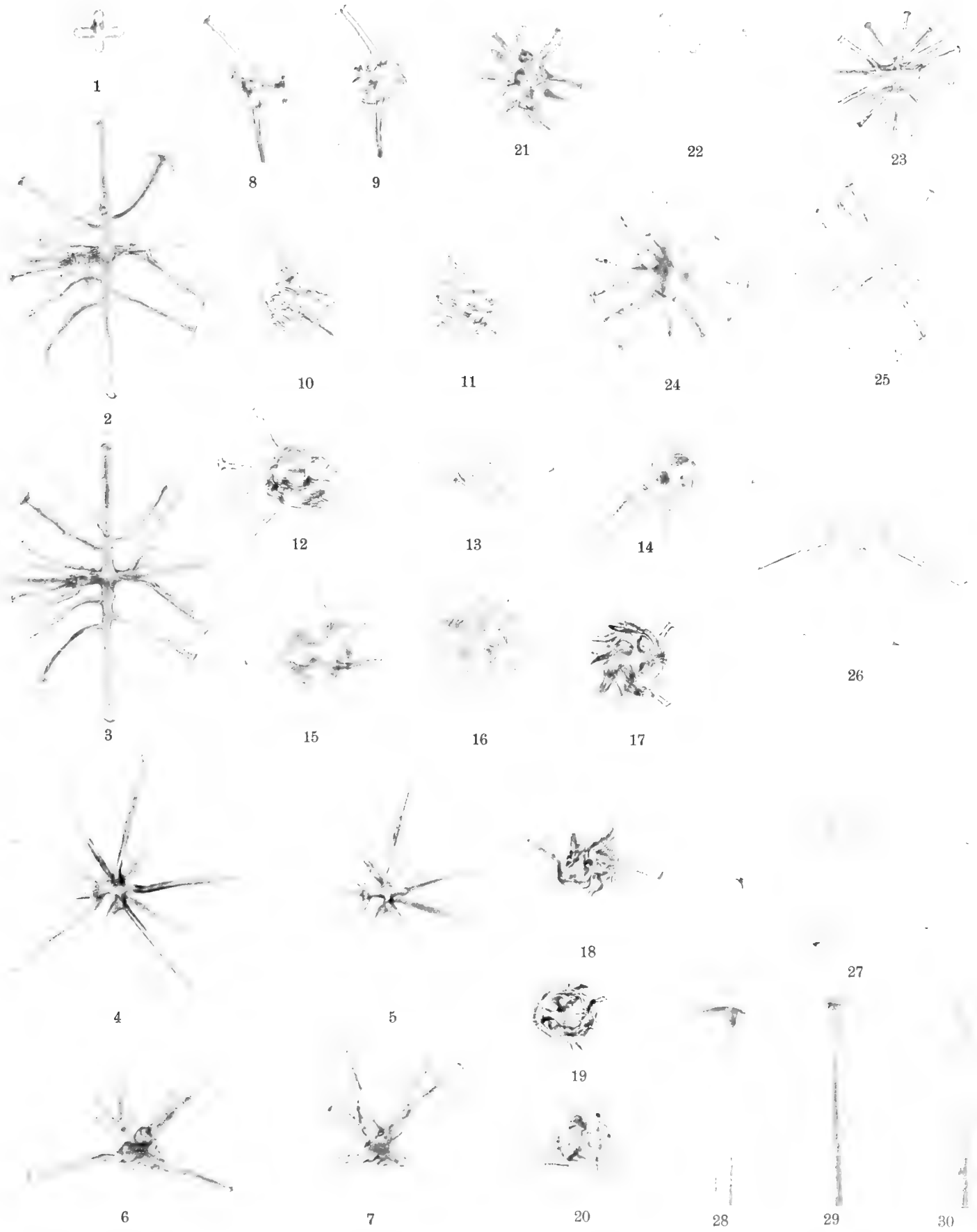


Fig. 1-30 *Calycosilva cantharellus* n. sp.  
 1-5, 8-30 *C. c. var. helix*; 6, 7 *C. c. var. simplex (A)*.

Lendenfeld photographed



PLATE 4.

PLATE 4.

**Calycosilva cantharellus** LENDENFELD.

Figs. 1-20 — var. **megonychia** Lendenfeld.

Figs. 21, 22 — var. (A) **simplex** Lendenfeld.

Figs. 23, 24 — var. **helix** Lendenfeld.

- 1.— Onychhexaster-derivate oxyhexaster of var. *megonychia*; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 2.— Onychhexaster of var. *megonychia*; magnified 600; u. v. phot. Zeiss, q. monochr. 6, q. oc. 10.
- 3, 4.— Onychhexasters of var. *megonychia*; magnified 600; u. v. phot. Zeiss, q. monochr. 6; q. oc. 10: 3, focussed lower; 4, focussed higher.
- 5, 6.— Group of onychhexasters of var. *megonychia*; magnified 300; u. v. phot. Zeiss, q. monochr. 6, q. oc. 5: 5, focussed lower; 6, focussed higher.
- 7.— Group of onychhexasters of var. *megonychia*; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 8-12.— Ends of end-rays of onychhexasters of var. *megonychia*; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 8, one with all the spines directed obliquely outward;
  - 9, 10, one with nearly straight spines, two of which are nearly vertical and one directed obliquely outward; 9, focussed lower; 10, focussed higher.
  - 11, 12, a similar one, one of the spines of which is curved in an S-shaped manner; 11, focussed lower; 12, focussed higher.
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  - 16-18, with one clearly distinguished terminal spine;
  - 19, with one terminal spine which appears as the tip of a simple oxyhexastrose end-ray.
- 20.— The largest of the fragments of var. *megonychia*; magnified 1.85; phot. Zeiss, anastig. 480/412 mm.
- 21-24.— Parts of radial sections vertical to the surface, showing the pinule-fur; magnified 75; phot. Zeiss, apochr. 16, compens. oc. 6:
  - 21, the gastral pinule-fur of var. *simplex* (A);
  - 22, the dermal pinule-fur of var. *simplex* (A);
  - 23, the gastral pinule-fur of var. *helix*;
  - 24, the dermal pinule-fur of var. *helix*.

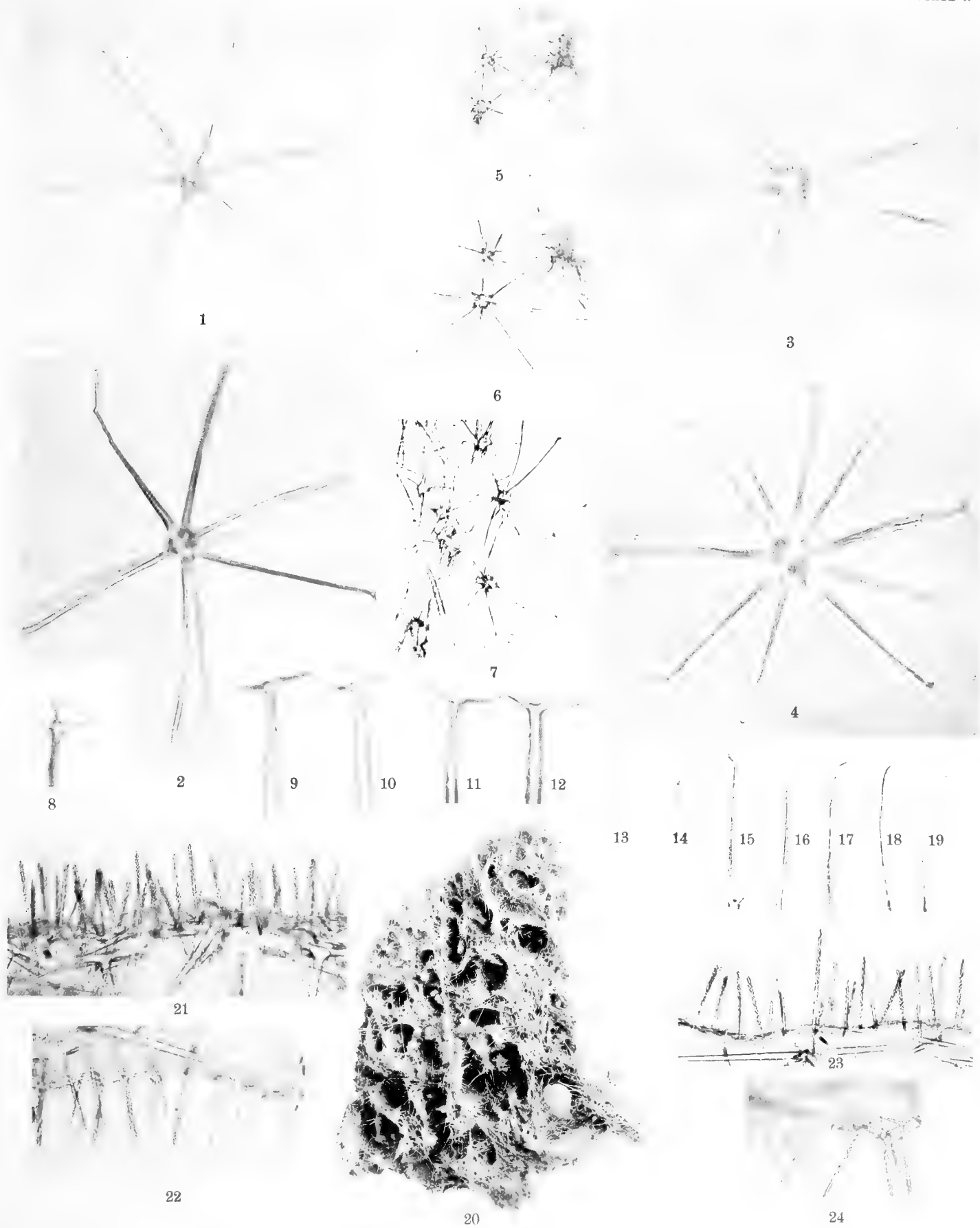


Fig. 1-24 *Calycosilva cantharellus* n. sp.  
 1-20 *C. c. var. megonychia*; 21, 22 *C. c. var. simplex (A)*; 23, 24 *C. c. var. helix*.





PLATE 5.

PLATE 5.

*Calycosilva cantharellus* LENDENFELD.

Figs. 1, 2, 4, 5, 7-9, 11-15, 18-20 — var. *helix* Lendenfeld.  
 Figs. 3, 6, 10 — var. (B) *simplex* Lendenfeld.  
 Figs. 16, 17 — var. (A) *simplex* Lendenfeld.  
 Fig. 21 — var. *megonychia* Lendenfeld.

- 1.— Radial section through a part of the body near the margin, of var. *helix*; magnified 20; phot. Zeiss, planar 20 mm.:  
 a, gastral pinule-fur; b, hypogastral oxyptentactines; c, subgastral rhabd-bundles; d, choanosomal rhabds and oxyhexactines; e, subdermal rhabd-bundles; f, hypodermal oxyptentactines; g, dermal pinule-fur.
- 2.— The end of a rhabd of var. *helix*; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 3.— The skeleton of the basal end of var. *simplex* (B); magnified 6; phot. Zeiss, planar 50 mm.:  
 a, fragment of a spicule, probably a root-spicule, of *Hyalonema* sp., to which the *Calycosilva* is attached; b, the basal part of the skeleton of the *Calycosilva*.
- 4.— Radial section through part of the body of var. *helix*; magenta; magnified 20; phot. Zeiss, planar 20 mm.:  
 a, gastral pinule-fur; b, hypogastral oxyptentactines; c, subgastral rhabd-bundles; d, choanosomal rhabds and oxyhexactines; e, subdermal rhabd-bundles; f, hypodermal oxyptentactines; g, dermal pinule-fur.
- 5-7.— Parts of the basal skeleton-net; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
 5, 7, from the stalk of var. *helix*;  
 6, from the lattice-work which surrounds the spicule-fragment forming the base of attachment of var. *simplex* (B).
- 8, 9.— The central part of two rhabds of var. *helix*; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
 8, of a simple rhabd;  
 9, of a centrotyle rhabd.
- 10.— The sectioned face of var. *simplex* (B), longitudinally cut in two; magnified 1.7; phot. Zeiss, anastig. 480/412 mm.:  
 a, fragment of a spicule, probably a root-spicule, of a *Hyalonema* sp., to which the *Calycosilva* is attached; b, the *Calycosilva*.
- 11.— Radial section through the margin of the body of var. *helix*; magnified 20; phot. Zeiss, planar 20 mm.:  
 a, gastral pinule-fur; g, dermal pinule-fur; h, margin.
- 12-15.— Ends of rhabds of var. *helix*; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
 12, 13, the two ends of a nearly isoactine amphistrongyle rhabd;  
 14, 15, the two ends of a tylostyle rhabd.
- 16.— Axial, longitudinal section through the upper end of the stalk and the adjacent (central) part of the body of var. *simplex* (A); magnified 6; phot. Zeiss, planar 50 mm.:  
 a, gastral pinule-fur; b, choanosome; c, stalk; g, dermal pinule-fur.
- 17.— Onychhexaster of var. *simplex* (A); magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 18, 19.— Onychhexasters of var. *helix*; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 20.— The central part of a diactine the two actines of which enclose nearly a right angle, of var. *helix*; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 21.— The central part of a triactine of var. *megonychia*; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

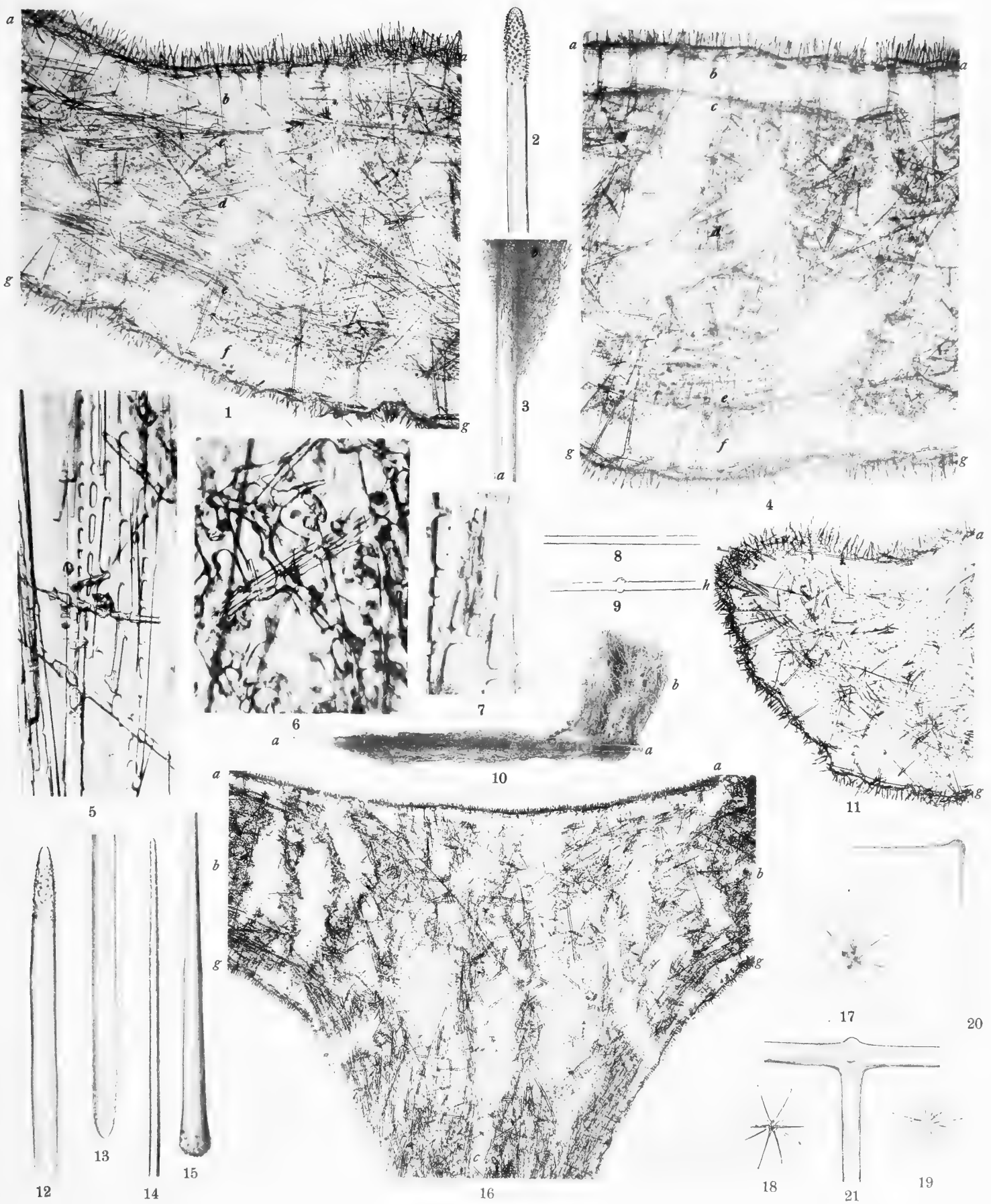


Fig. 1-21 *Calycosilva cantharellus* n. sp.  
 1, 2, 4, 5, 7-9, 11-15, 18-20 *C. c. var. helix*; 3, 6, 10 *C. c. var. simplex (B)*; 16, 17 *C. c. var. simplex (A)*;  
 21 *C. c. var. megonychia*.

Lendenfeld photographed



PLATE 6.



PLATE 6.

**Calycosilva cantharellus** LENDENFELD.

Figs. 1-4, 22, 23 — var. (A) **simplex** Lendenfeld.

Figs. 5-21, 24-34 — var. **helix** Lendenfeld.

- 1-12.— Hypodermal pentactines; magnified 30; phot. Zeiss, planar 20 mm.:  
1-4, oblique and side-views of hypodermal oxyptentactines of the body of var. *simplex* (A);  
5, 7, 8, oblique views of hypodermal oxyptentactines of the body of var. *helix*;  
6, apical view of a hypodermal oxyptentactine of the body of var. *helix*;  
9, 10, 12, oblique views of hypodermal pentactines of the lower part of the stalk of var. *helix*;  
11, apical view of a hypodermal oxyptentactine of the lower part of the stalk of var. *helix*.
- 13.— Group of spicules from the lower part of the stalk of var. *helix*; magnified 30; phot. Zeiss, planar 20 mm.:  
a, hypodermal pentactines; b, part of the skeleton-net of the stalk.
- 14, 15.— The outer end of a distal pinule-ray of var. *helix*; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
14, focussed higher; 15, focussed lower.
- 16, 17.— The outer end of a distal pinule-ray of var. *helix*; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
16, focussed higher; 17, focussed lower.
- 18.— Side-view of var. *helix*; magnified 1.1; phot. Zeiss, anastig. 480/412 mm.
- 19-25.— Dermal pinules of the body; magnified 200; phot. Zeiss, apochr. 16, compens. oc. 6:  
19-21, 24, 25, of var. *helix*;  
22, 23, var. *simplex* (A);  
19-22, 24, 25, side-views;  
23, apical view.
- 26-34.— Dermal pinules of the lower part of the stalk of var. *helix*; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
26, 28, 33, 34, side-views;  
27, 29-32, apical views;  
(30 and 31 are the same view of the same spicule, 30, focussed high, 31, focussed low).

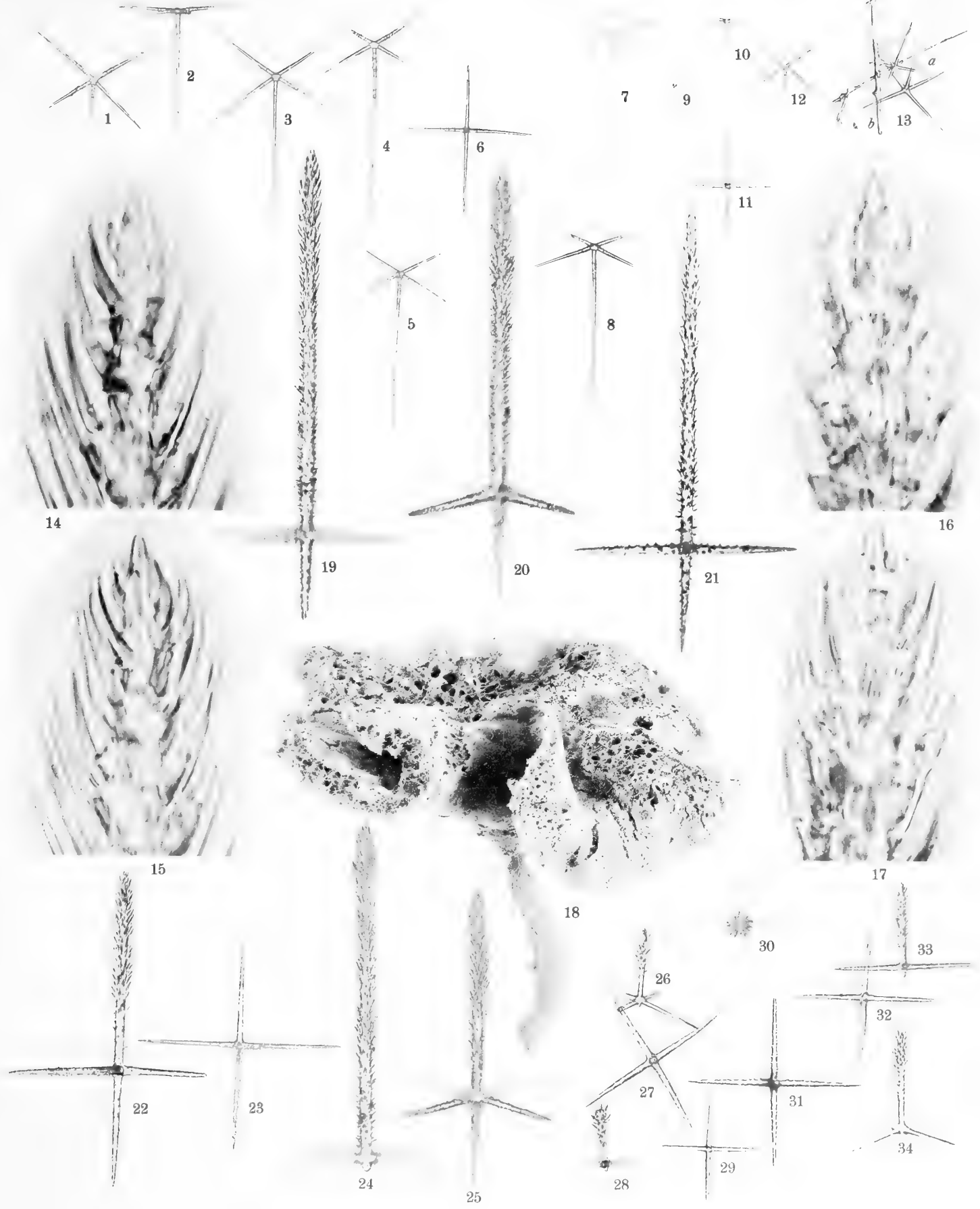


Fig. 1-34 *Calcosilva cantharellus* n. sp.  
 1-4, 22, 23 *C. c. var. simplex* (A); 5-21, 24-34 *C. c. var. helix*.



PLATE 7.

PLATE 7.

**Calycosilva cantharellus** LENDENFELD.

Figs. 1-10, 12-14, 16, 17 — var. **helix** Lendenfeld.  
Figs. 11, 15, 18 — var. (A) **simplex** Lendenfeld.  
Fig. 19 — var. **megonychia** Lendenfeld.

- 1-3.— Plumicomes of *helix*; magnified 600:  
1, u. v. phot. Zeiss, q. monochr. 6, q. oc. 10; 2, 3, phot. Zeiss, H. I. 1/12, compens. oc. 6.  
4, 5.— Part of a plumicome of var. *helix*; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
4, focussed higher; 5, focussed lower.  
6-19.— Gastral pinules; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
6-10, 12-14, 16, 17, of var. *helix*;  
11, 15, 18, of var. *simplex* (A);  
19, of var. *megonychia*;  
6-15, 19, side-views; 16-18, apical views.

**Caulophacus schulzei** Wilson.

Figs. 20-22, 24-28 — specimen E.  
Figs. 23, 29 — specimen B.  
Figs. 30, 31 — specimen D.

- 20-31.— Hexactines; magnified 30; phot. Zeiss, planar 20 mm.:  
20, 22, 24, 25, 27, with rather smooth, pointed, unequal rays, of specimen E;  
21, with one strongly reduced, pointed, and very spiny ray, of specimen E;  
23, with rather smooth, pointed, nearly equal rays, of specimen B;  
26, with rather smooth, pointed, nearly equal rays, of specimen E;  
28, with one ray angularly bent, of specimen E;  
29, with one ray reduced in length, terminally thickened, and smooth, of specimen B;  
30, with smooth, pointed, unequal rays, of specimen D;  
31, with rather smooth, pointed, nearly equal rays, of specimen D.

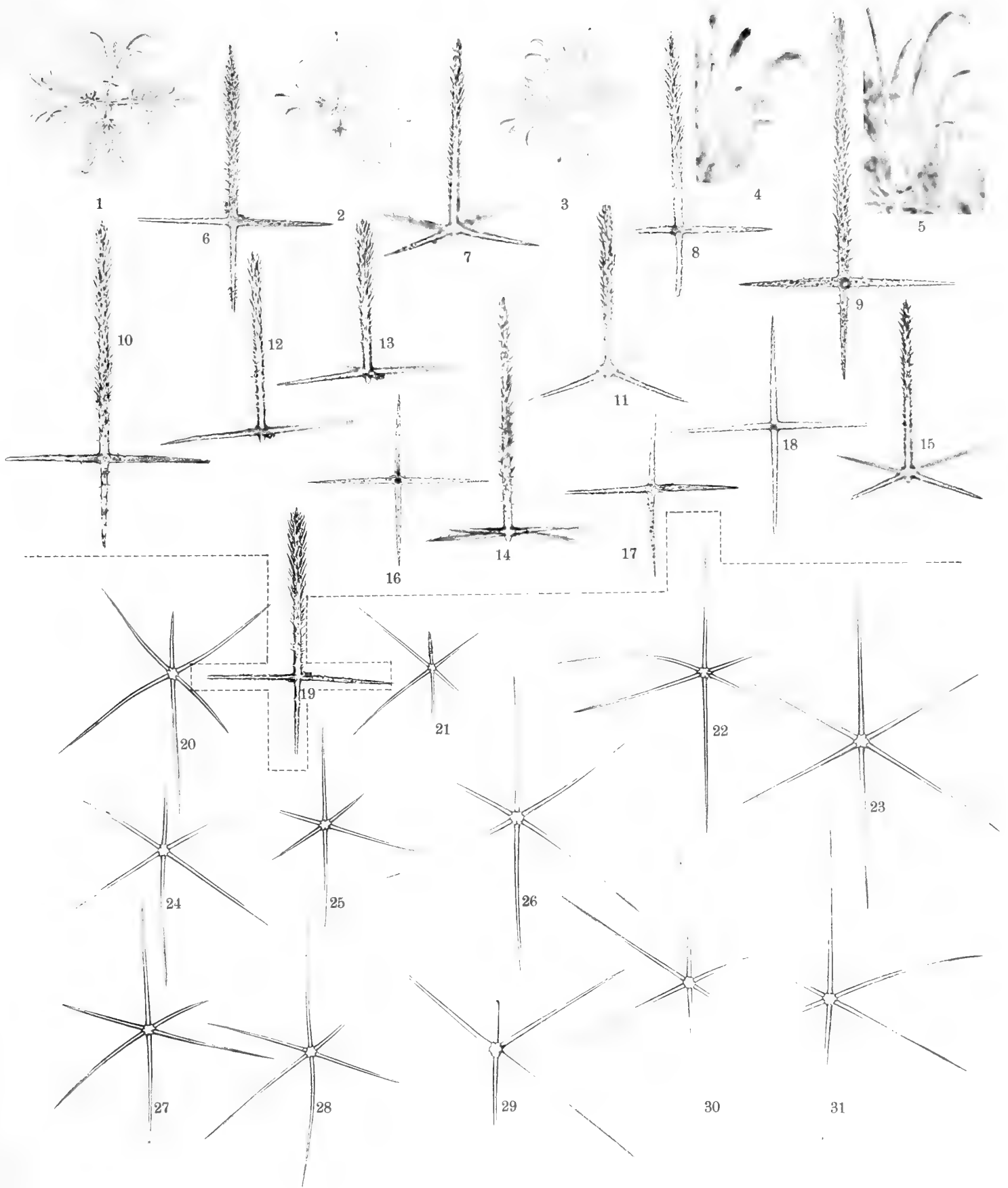


Fig. 1-19 *Calycosilva cantharellus* n. sp.  
 1-10, 12-14, 16, 17 *C. c.* var. *helix*; 11, 15, 18 *C. c.* var. *simplex* (A); 19 *C. c.* var. *megonychia*.

Fig. 20-31 *Caulophacus schulzei* Wilson.  
 20-22, 24-28 (E); 23, 29 (B); 30, 31 (D).

Lendenfeld photographed





PLATE 8.

PLATE 8.

*Caulophacus schulzei* WILSON.

Figs. 1, 5, 6, 8-12, 15, 21, 22, 27 — specimen E.  
Figs. 2-4, 13, 16, 18-20, 24 — specimen B.  
Figs. 7, 17, 23, 25, 26 — specimen D.  
Figs. 14, 28, 29 — specimen C.

- 1-7.— Side-views of hypodermal and hypogastral pentactines; magnified 30; phot. Zeiss, planar 20 mm.:
- 1, 5, 6, of hypodermal or hypogastral pentactines of specimen E;
  - 2-4, of hypogastral pentactines of specimen B; 7, of a hypogastral pentactine of specimen D.
- 8-12.— Group of spicules from a spicule-preparation of specimen E; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
- 8, 9, pinules;
  - 10, a discohexactine;
  - 11, a hemidiscohexaster;
  - 12, a hypodermal or hypogastral pentactine with one lateral ray reduced in length and terminally thickened.
- 13-17.— Hypodermal and hypogastral pentactines and parts of such; magnified 100; phot. Zeiss apochr. 16, compens. oc. 6:
- 13, the lateral rays of a hypogastral pentactine of specimen B;
  - 14, the lateral rays of a hypogastral pentactine of specimen C;
  - 15, part of the lateral rays of a hypodermal or hypogastral pentactine of specimen E;
  - 16, side-view of the central part of a hypogastral pentactine of specimen B;
  - 17, side-view of a hypodermal pentactine of specimen D.
- 18-27.— Apical views of the lateral rays of pentactines; magnified 30; phot. Zeiss, planar 20 mm.:
- 18-20, of hypodermal pentactines of specimen B;
  - 21, 22, 27, of hypodermal or hypogastral pentactines of specimen E;
  - 23, of a large hexactine-derivate pentactine of specimen D;
  - 24, of a large hexactine-derivate pentactine of specimen B;
  - 25, 26, of hypogastral pentactines of specimen D.
- 28, 29.— Radial section through the marginal part of the body of specimen C; magnified 10; phot. Zeiss, planar 50 mm.:
- 28, stained with magenta;
  - 29, stained with azur;
  - a, gastral face; b, margin of sponge-body; c, dermal face.

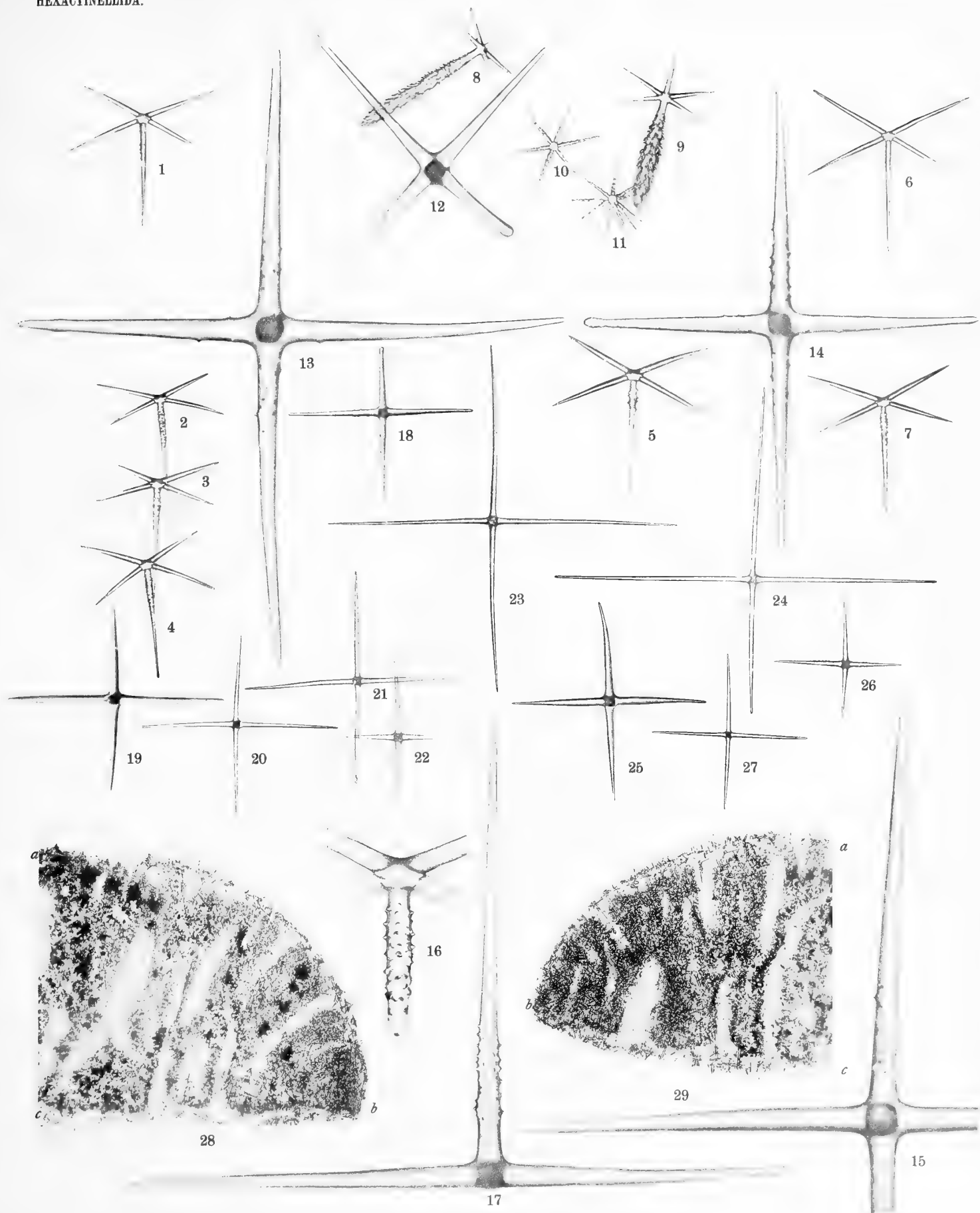


Fig. 1-29 *Caulophacus schulzei* Wilson.  
 1, 5, 6, 8-12, 15, 21, 22, 27 (E); 2-4, 13, 16, 18-20, 24 (B); 7, 17, 23, 25, 26 (D); 14, 28, 29 (C).



PLATE 9.

PLATE 9.

**Caulophacus schulzei** WILSON.

Figs. 1-22, 24, 26, 32 — specimen E.  
Figs. 23, 25, 28, 33 — specimen D.  
Fig. 27 — specimen F.  
Figs. 29, 31 — specimen C.  
Fig. 30 — specimen A.

- 1-7.— Rays and end-parts of such of discohexasters, hemidiscohexasters, or discohexactines of specimen E; magnified 600:  
1, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
2-7, u. v. phot. Zeiss, q. monochr. 6, q. oc. 10.
- 8.— The fragmentary specimen E from above; magnified 1.85; phot. Zeiss, anastig. 480/412 mm.
- 9-13.— Ends of rays of discohexasters, hemidiscohexasters, or discohexactines of specimen E; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 14-16.— Oxyhexaster- and hemioxyhexaster-like young stages of discohexasters and hemidiscohexasters of specimen E; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 17-22.— Discohexasters and hemidiscohexasters of specimen E; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 23-26.— Discohexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
23, 25, of specimen D;  
24, 26, of specimen E.
- 27.— Longitudinal section of the peduncle of specimen F; magnified 2.5; phot. Zeiss, planar 100 mm.
- 28.— Side-view of specimen D; magnified 1.2; phot. Zeiss, anastig. 480/412 mm.
- 29.— Specimen C seen from above; magnified 1.2; phot. Zeiss, anastig. 480/412 mm.
- 30.— Specimen A seen from above; magnified 1.2; phot. Zeiss, anastig. 480/412 mm.
- 31.— Part of the gastral surface of specimen C; magnified 4.2; phot. Zeiss, anastig. 167 mm.
- 32.— Axial section of specimen E; magnified 2.5; phot. Zeiss, planar 100 mm.:  
a, peduncle.
- 33.— Axial section of specimen D; magnified 2.5; phot. Zeiss, planar 100 mm.:  
a, peduncle.

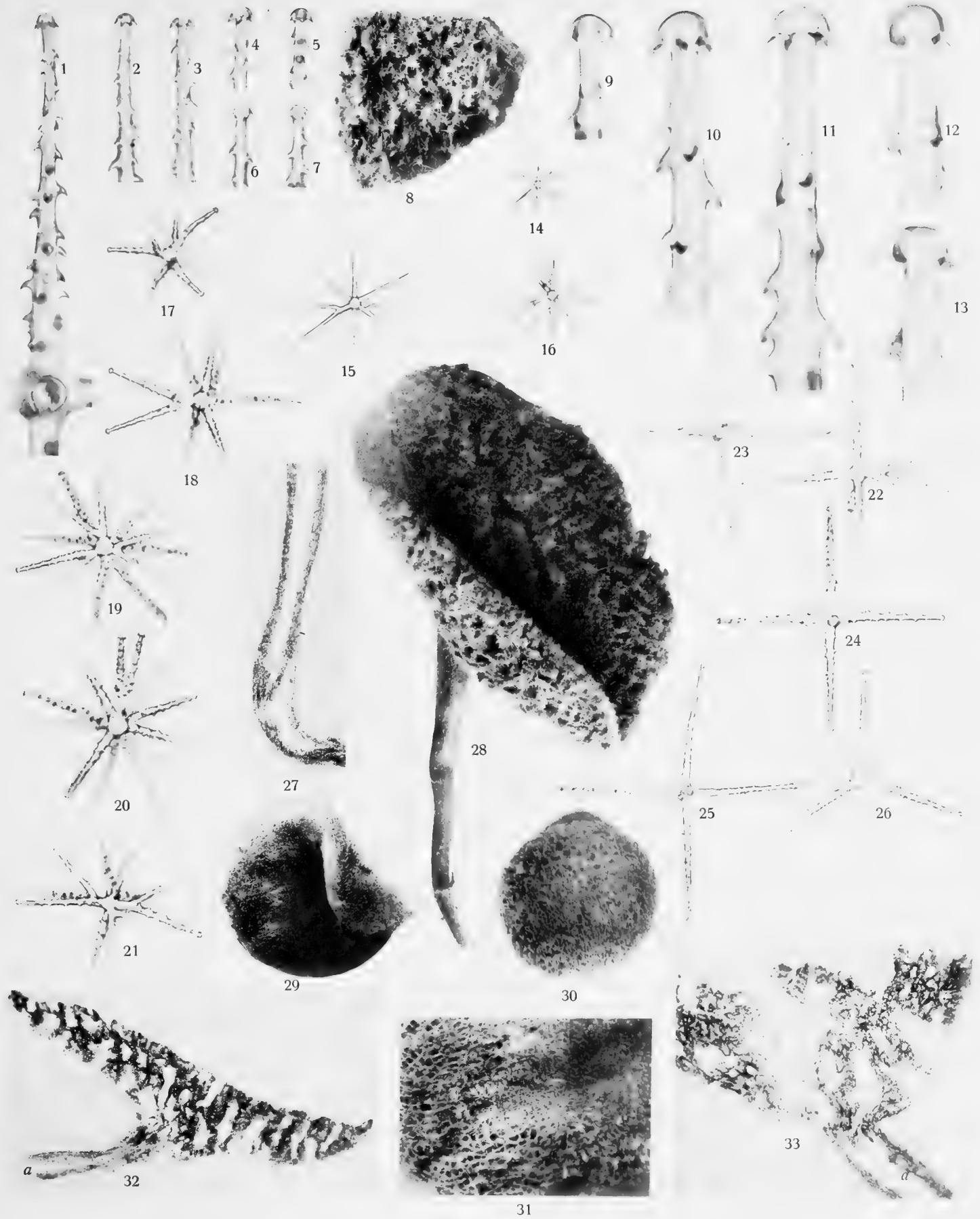


Fig. 1—33 *Caulophacus schulzei* Wilson;  
 1—22, 24, 26, 32 (E); 23, 25, 28, 33 (D); 27 (F); 29, 31 (C); 30 (A).





PLATE 10.

PLATE 10.

**Caulophacus schulzei** WILSON.

Figs. 1-3, 5, 6, 9, 10, 15-26, 28, 29 — specimen E  
Fig. 4 — specimen B.  
Fig. 7 — specimen D.  
Figs. 8, 11-14 — specimen F.  
Fig. 27 — specimen C.

- 1-7.— Parts of rhabds of the body; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
1 and 2, the ends, and 3 the central part, of a rhabd of specimen E;  
4, an end of a rhabd of specimen B;  
5, 6, ends of rhabds of specimen E;  
7, end of a rhabd of specimen D.
- 8.— Part of the skeleton-net of the peduncle of specimen F; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
a, pinules embodied in the skeleton-net.
- 9, 10.— Rhabds of the body of specimen E; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.
- 11, 12.— Free ends of rhabds of the skeleton-net of the peduncle of specimen F; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 13, 14.— Parts of the skeleton-net of the peduncle of specimen F; magnified 30; phot. Zeiss, planar 20 mm.
- 15, 16.— The distal end of a main-ray and the proximal parts of the end-rays arising from it, of a large discocome of specimen E; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
15, focussed lower; 16, focussed higher.
- 17-19.— Discocomes of specimen E; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
17, 18, small ones with short, strongly divergent end-rays;  
19, a large one with long, more upright end-rays.
- 20-25.— Parts of discocomes of specimen E; magnified 600:  
20, 22, 23, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
21, phot. Zeiss, apochr. 4, compens. oc. 12;  
24, 25, u. v. phot. Zeiss, q. monochr. 6, q. oc. 10;  
20, 21, of large ones with long, more upright end-rays;  
22, 23, of intermediate ones;  
24, 25, of small ones with short, strongly divergent end-rays.
- 26.— The distal part of an end-ray of a discocome of specimen E; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 27-29.— Groups of microscleres from spicule-preparations:  
27, of specimen C; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6;  
28, 29, of specimen E; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6;  
a, discohexasters, hemidiscohexasters, and discohexactines; b, discocomes.

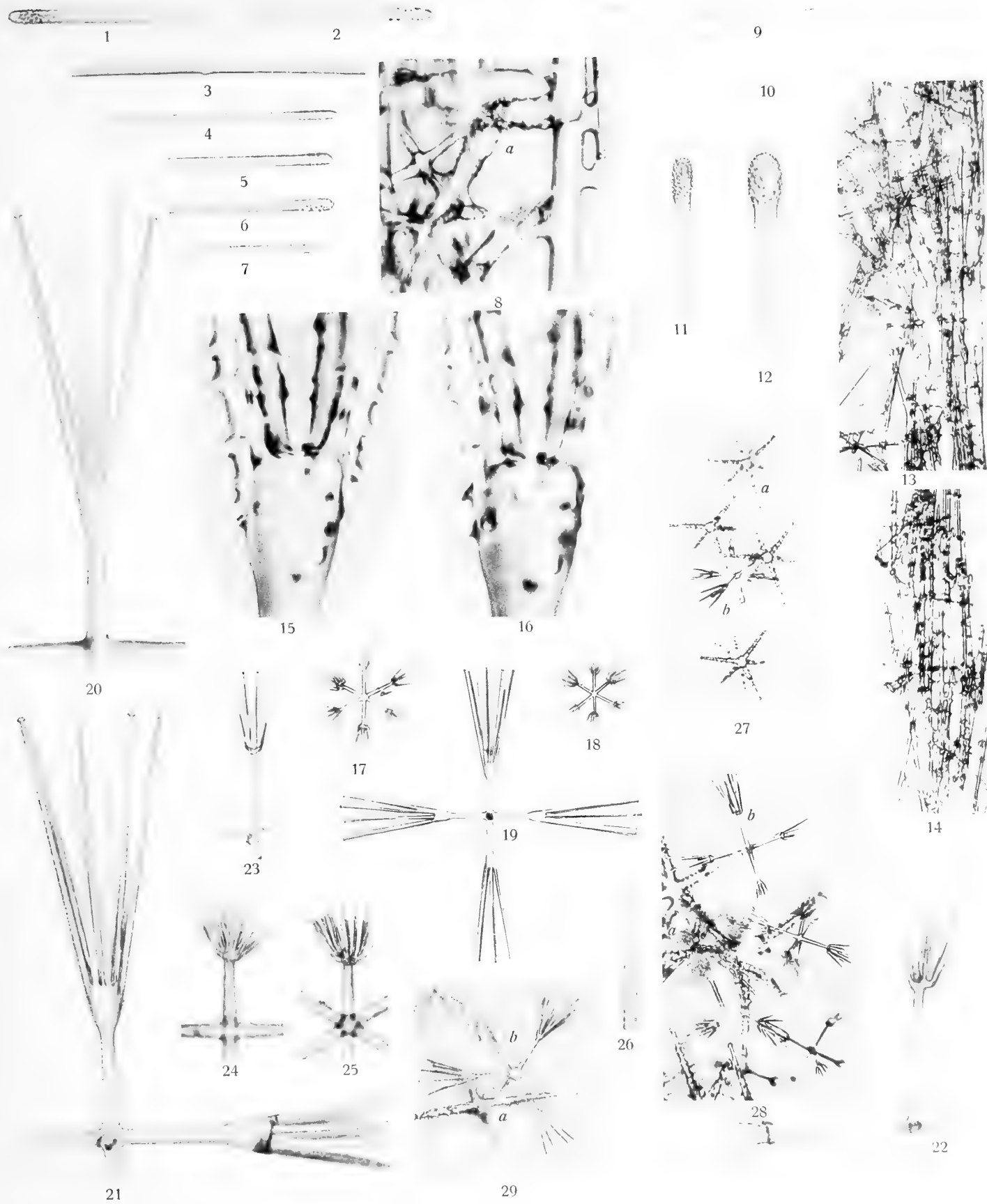


Fig. 1—29 *Caulophacus schulzei* Wilson: 1—3, 5, 6, 9, 10, 15—26, 28, 29 (E); 4 (B); 7 (D); 8, 11—14, (F); 27 (C).

Lendenfeld photographed.



PLATE 11.

PLATE 11.

**Caulophacus schulzei** WILSON.

Fig. 1 — specimen B.  
Figs. 2-6, 13-16 — specimen E.  
Figs. 7-9, 11, 12 — specimen D.  
Figs. 10, 17 — specimen C.

- 1-12.— Side-views of normal pinules; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
1, a dermal pinule of specimen B;  
2-6, pinules of specimen E;  
7, 8, gastral pinules of specimen D;  
9, 11, 12, dermal pinules of specimen D;  
10, a dermal pinule of specimen C.
- 13.— Side-view of an abnormal pinule with hypertroph proximal ray of specimen E; magnified 200;  
phot. Zeiss, apochr. 8, compens. oc. 6.
- 14.— The proximal ray of a pinule of specimen E; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 15, 16.— The distal part of a distal pinule-ray of specimen E; magnified 600; phot. Zeiss, apochr. 4,  
compens. oc. 12:  
15, focussed higher; 16, focussed lower.
- 17.— Part of a radial section of specimen C; eosin; magnified 30; phot. Zeiss, planar 20 mm.:  
a, gastral pinule-fur; b, subgastral cavities; c, choanosome.



Fig. 1—17 *Caulophacus schulzei* Wilson;  
 1 (B); 2—6, 13—16 (E); 7—9, 11, 12 (D); 10, 17 (C).

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 12.

PLATE 12.

**Caulophacella tenuis** LENDENFELD.

Figures 1-19.

- 1-8.— Distal parts of distal rays of pinules; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:  
1, 2, of a large dermal pinule;  
1, focussed higher; 2, focussed lower;  
3, 4, of a small gastral pinule with stout distal ray;  
3, focussed higher; 4, focussed lower;  
5, 6, of a small gastral pinule with spirally twisted spines;  
5, focussed higher; 6, focussed lower;  
7, 8, of a small gastral pinule with slender distal ray;  
7, focussed higher; 8, focussed lower.
- 9.— Oxyhexaster: magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 10-12.— Parts of end-rays of oxyhexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
10, the tip of an end-ray;  
11, 12, central part of an end-ray;  
11, focussed higher; 12, focussed lower.
- 13.— Surface-view of part of the sponge-lamella, after removal of the soft parts with nitric acid; magnified 30; phot. Zeiss, planar 20 mm.
- 14, 15.— Apical views (the lateral rays) of pinules; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
14, of a large dermal pinule;  
15, of a small gastral pinule.
- 16-18.— Oxyhexasters; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 19.— Side-view of a large dermal pinule; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

**Lanugonychia flabellum** LENDENFELD.

Figures 20-34.

- 20.— Part of an irregular discohexaster with primary and secondary end-rays; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 21.— A main-ray and adjacent parts of a plumicome; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 22, 23.— The main-rays and basal parts of end-rays of plumicomes; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 24-34.— Hexactines and hexactine-derivates with fewer than six fully developed rays; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
24, 25, with one fully developed ray;  
26-29, with two fully developed rays;  
30-34, with three to six fully developed rays.

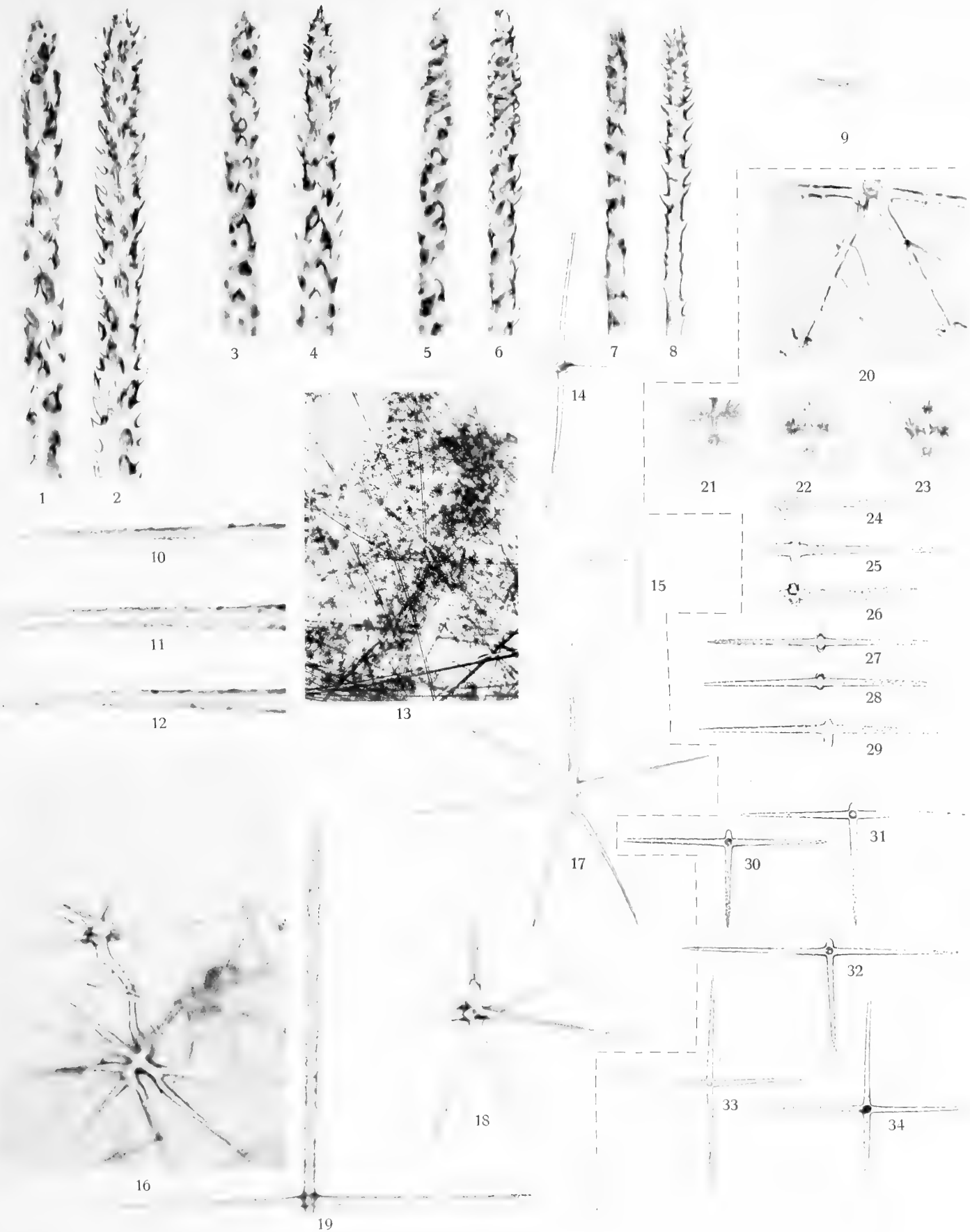


Fig. 1—19 *Caulophacella tenuis* n. sp.  
 Fig. 20—34 *Lanugonychia flabellum* n. sp.

Lendenfeld photographed.

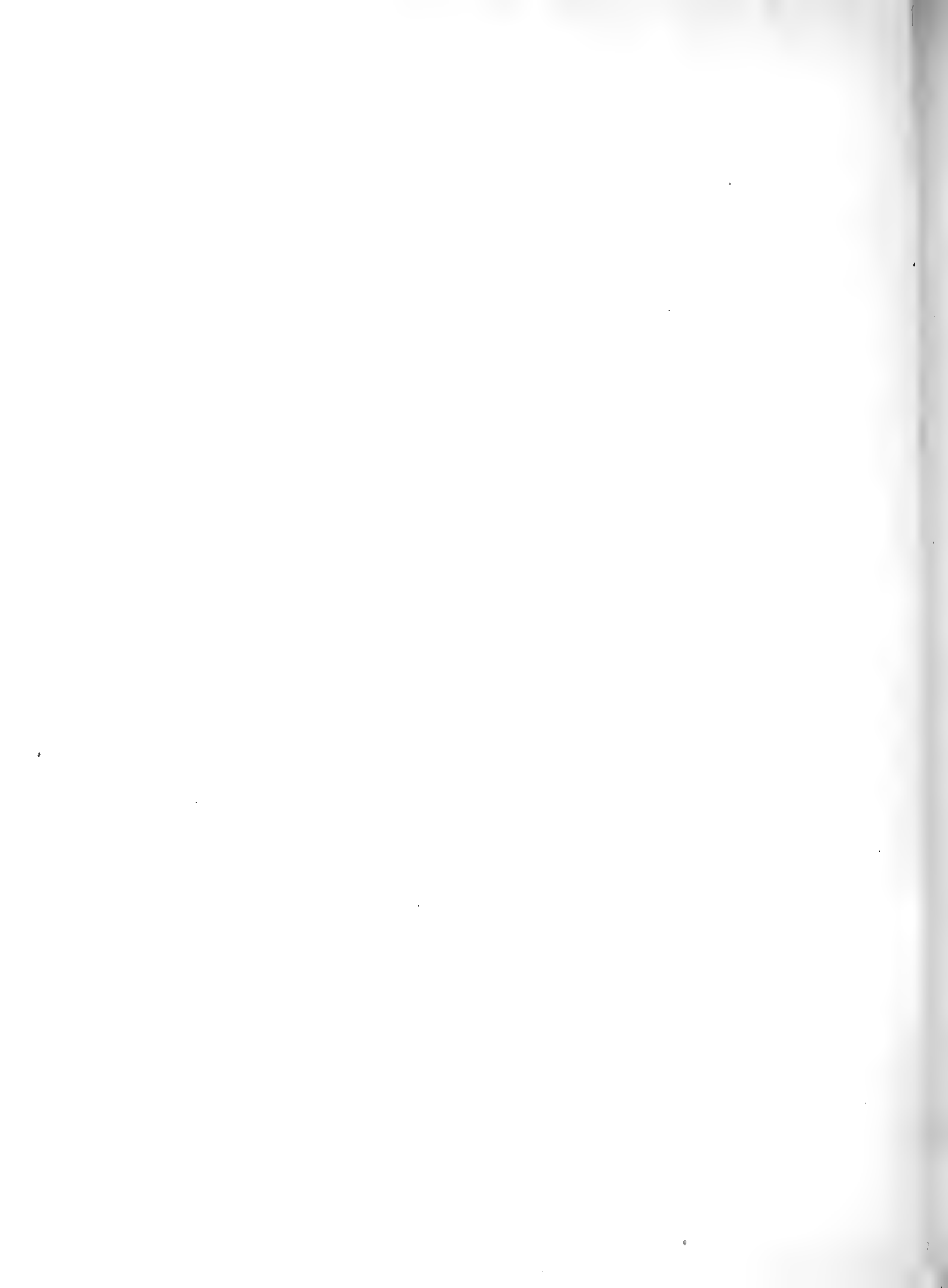


PLATE 13.

PLATE 13.

**Lanugonychia flabellum** LENDENFELD.

Figures 1-28.

- 1.— The distal part of an end-ray of a large discohexaster; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 2.— Part of a large discohexaster; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 3.— Part of small discohexaster; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 4.— Fairly large discohexaster; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 5, 6.— Groups of spicules from spicule-preparations; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - a, large discohexasters; b, onychhexasters; c, angularly bent, hexactine-derivate diactine.
- 7.— Part of the dictyonal skeleton of the stalk; magnified 30; phot. Zeiss, planar 20 mm.
- 8.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm. (The stalk is detached from the body proper, there is a complete interruption between them at a).
- 9-13.— Megascleres; magnified 30; phot. Zeiss, planar 20 mm.:
  - 9, side-view of a large pentactine;
  - 10, apical view of the lateral rays of a small pentactine;
  - 11, part of a large rhabd;
  - 12, apical view of the lateral rays of a small pentactine;
  - 13, side-view of a small pentactine.
- 14.— Part of the lamellar sponge-body in transmitted light; magnified 3; phot. Zeiss, anastig. 167 mm.
- 15.— Group of microscleres from a spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - a, discohexasters; b, onychhexasters.
- 16.— Group of megascleres from a spicule-preparation; magnified 10; phot. Zeiss, planar 50 mm.:
  - a, large, partly broken pentactines; b, small pentactine.
- 17-26.— Ends of end-rays of discohexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 27.— End of an end-ray of an onychhexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 28.— Hexactine-derivate with only one fully developed ray; magnified 600; u. v. phot. Zeiss, q. monochr. 6, q. oc. 10.



Fig. 1—28 *Lanugonychia flabellum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 14

PLATE 14.

**Bathydorus laevis spinosissimus** LENDENFELD.

Figs. 1-6, 16, 17, 19-32 — specimen B.  
Figs. 7-11, 14, 15, 18 — specimen A.  
Figs. 12, 13 — specimen C.

- 1-4.— Ends of small rhabds of specimen B; magnified 600:  
1, 3, phot. Zeiss, apochr. 4, compens. oc. 12;  
2, 4, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 5, 6.— The central part with tyle of two small centrotyle rhabds of specimen B:  
5, magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
6, magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 7-10.— End-parts of large protruding rhabds (prostalia) of specimen A; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 11.— View of the dermal surface of specimen A; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 12.— View of the gastral surface of specimen C; magnified 200, phot. Zeiss, apochr. 8, compens. oc. 6.
- 13.— View of specimen C; magnified 1.6; phot. Zeiss, anastig. 480/412 mm.
- 14, 15.— Two transverse sections of specimen A; magnified 10; phot. Zeiss, planar 50 mm.
- 16.— An oxyhexaster of specimen B; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 17-23.— Oxyhexasters and parts and groups of such; magnified 600:  
17, 19-23, of specimen B;  
18, of specimen A;  
17, 19, 21-23, phot. Zeiss, apochr. 4, compens. oc. 12;  
18, 20, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 24-32.— End-rays and parts of such of oxyhexasters of specimen B; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
24-29, parts of end-rays of different oxyhexasters;  
30-32, an end-ray of an oxyhexaster;  
30, focussed higher; 31, focussed lower; 32, focussed still lower.

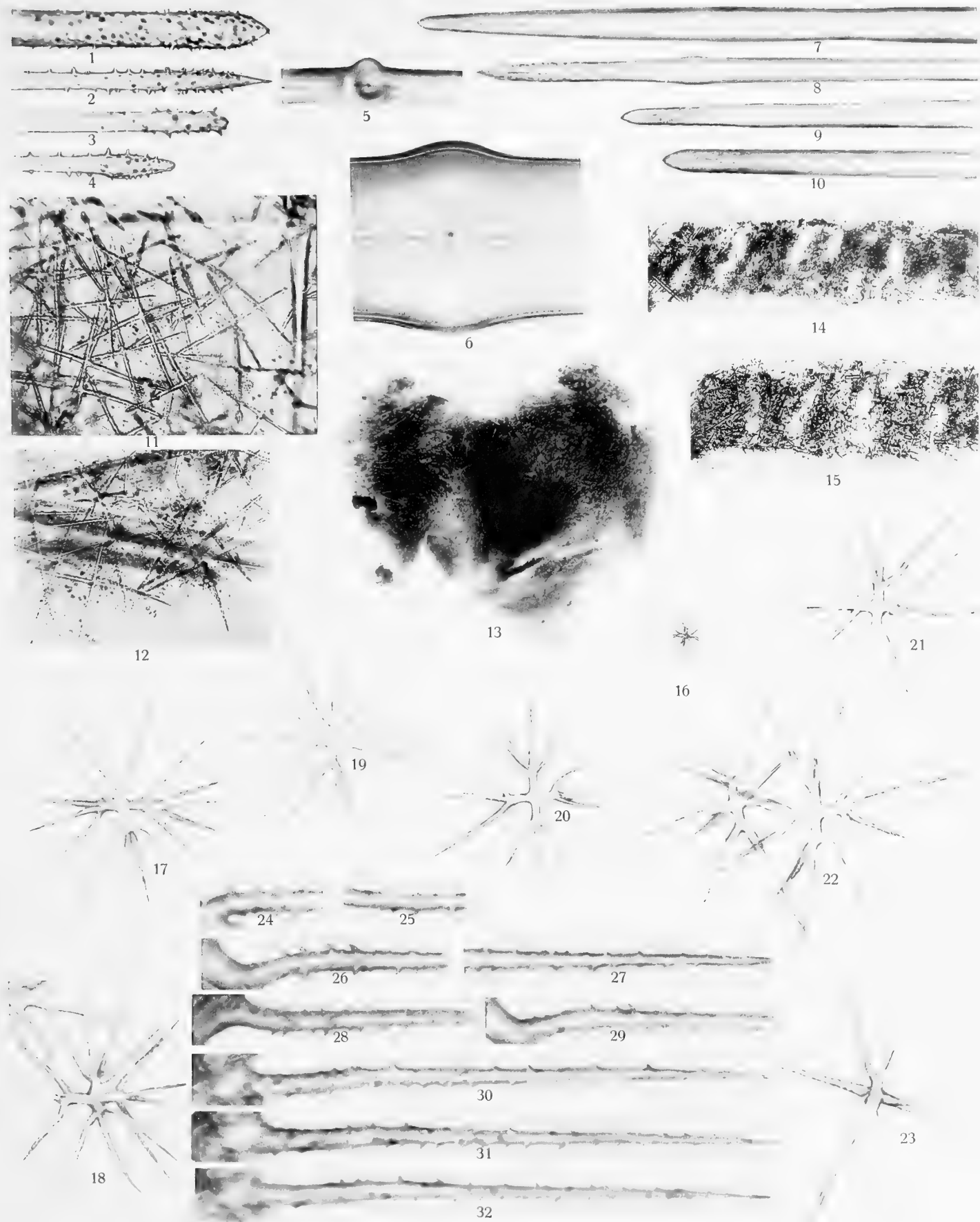


Fig. 1-32 *Bathydorus laevis* F. E. Sch., subspecies *spinosissimus* n. subsp. 1-6, 16, 17, 19-32 (B); 7-11, 14, 15, 18 (A); 12, 13 (C).

Lendenfeld photographed.



PLATE 15.

PLATE 15.

**Bathydorus laevis spinosissimus** LENDENFELD.

Figs. 1-4, 6-10, 14, 16-22 — specimen B.  
Figs. 5, 11-13, 15 — specimen A.

- 1.— Middle-sized, fairly regular, dermal tetractine (stauractine) of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 2.— Small dermal tetractine with rudiment of a fifth ray, of specimen B; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 3.— Part (three upwardly directed rays) of a middle-sized dermal hexactine of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 4.— Small dermal diactine with a rudiment of a third ray, of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 5.— Large dermal diactine with rudiments of two other rays, of specimen A; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 6.— Large dermal diactine with a rudiment of a third ray, of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 7, 8.— Two large gastral pinule-like hexactines with considerably differentiated distal ray, of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 9, 10.— A dermal tetractine with rays considerably shortened and thickened, of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:  
9, focussed lower; 10, focussed higher.
- 11.— Part of a large dermal tetractine (stauractine) with one strongly bent ray, of specimen A; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 12, 13.— Two rather large gastral, somewhat pinule-like hexactines with only slightly differentiated distal ray, of specimen A; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 14-17.— Distal, more or less differentiated, pinule ray-like rays of gastral hexactines; magnified 600:  
14, 16, 17, of specimen B;  
15, of specimen A;  
14, 15, phot. Zeiss, apochr. 4, compens. oc. 12;  
16, 17, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 18.— Large dermal tetractine (stauractine) with one ray considerably shorter than the others, of specimen B; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 19.— Middle-sized dermal tetractine (stauractine) of specimen B; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 20.— Large dermal tetractine with somewhat unequally developed rays and a rudiment of a fifth ray, of specimen B; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 21.— Middle-sized dermal tetractine with two rays considerably reduced in length, of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 6.
- 22.— Large dermal tetractine with one ray considerably reduced in length, of specimen B; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.

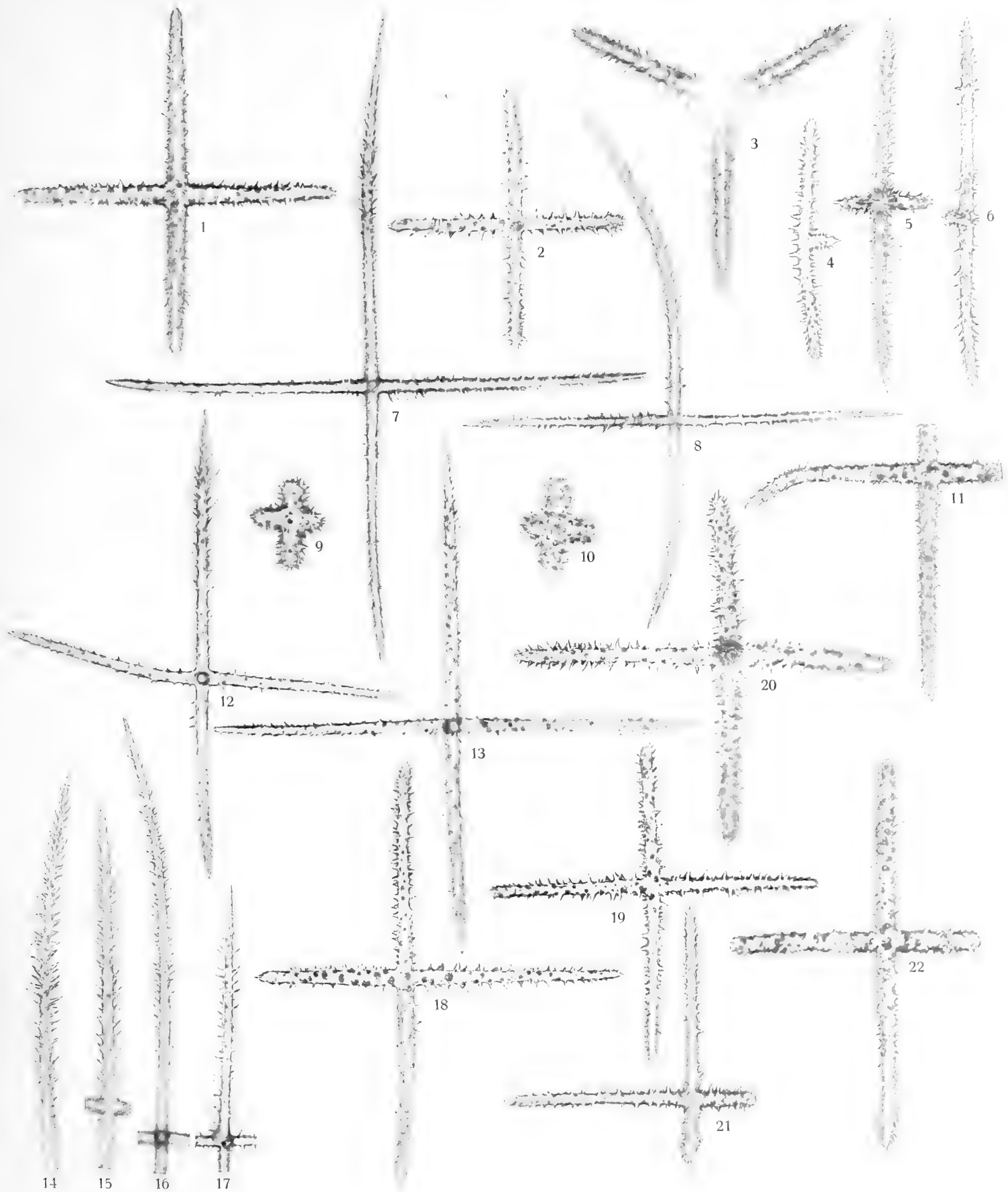


Fig. 1—22 *Bathydorus laevis* F. E. Sch., subspecies *spinossissimus* n. subsp. 1—4, 6—10, 14, 16—22 (B); 5, 11—13, 15 (A).

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.

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PLATE 16.

**Bathydorus laevis spinosissimus** LENDENFELD.

Figs. 1-8, 10, 11, 14-24 — specimen A.  
Figs. 9, 12, 13 — specimen B.

- 1, 2.— Side-views of pentactines with long proximal and short lateral rays, of specimen A; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.
- 3.— Side-view of a hexactine of specimen A; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.
- 4-8.— Side-views of pentactines with long lateral rays, of specimen A; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6:
  - 4-6, 8, with normally developed rays;
  - 7, with the proximal and two lateral rays reduced in length and terminally thickened.
- 9.— Gastral pinule-like hexactine of specimen B; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 10, 11.— Two gastral pinule-like hexactines of specimen A; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 12-14.— Dermal stauractines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - 12, 13, of specimen B;
  - 14, of specimen A.
- 15.— Part of the apical view of the lateral rays of a pentactine of specimen A; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 16, 17.— Apical views of the lateral rays of pentactines of specimen A; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6:
  - 16, of a pentactine in which all the lateral rays are properly developed;
  - 17, of a pentactine with one lateral ray reduced in length.
- 18.— Abnormal hexactine of specimen A; magnified 30; phot. Zeiss, planar 20 mm.
- 19.— Rectangular diactine of specimen A; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.
- 20, 21.— Part of a slightly heated lateral ray of a pentactine of specimen A; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 20, focussed higher; 21, focussed lower.
- 22, 23.— Part near the base of a lateral ray of a pentactine, of specimen A; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 22, focussed higher; 23, focussed lower.
- 24.— End of a lateral ray of a pentactine of specimen A; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.

**Staurocalyptus hamatus** LENDENFELD.

Figures 25-43.

- 25-28.— Ends of rhabds; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - 25-27, of small rhabds;
  - 28, of a large rhabd.
- 29.— A small rhabd; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 30-33.— A middle-sized stout rhabd, and parts of it:
  - 30, the rhabd; magnified 30; phot. Zeiss, planar 20 mm.;
  - 31-33, parts of the rhabd; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
    - 31, one end;
    - 32, portion of the middle-part;
    - 33, the other end.

- 34-38.— A large rhabd and parts of it:  
34, the rhabd; magnified 30; phot. Zeiss, planar 20 mm.;  
a, the part represented more strongly magnified in fig. 36;  
35-38, parts of the rhabd; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6;  
35, one end;  
36, portion near the end (at a, fig. 34) with a thickening of the axial thread;  
37, the other end;  
38, part of the thickest portion near the middle.
- 39.— Group of spicules from a spicule-preparation; magnified 30; planar 20 mm.:  
a, large rhabd; b, small rhabd; c, hemioxyhexasters with straight rays; d, oxyhexactine with  
hook-like rays; e, discoctaster.
- 40-43.— Small, spined, dermal rhabds; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
40, 41, with rudiments of other rays besides the fully developed two;  
42, 43, simple rhabds without such ray-rudiments.

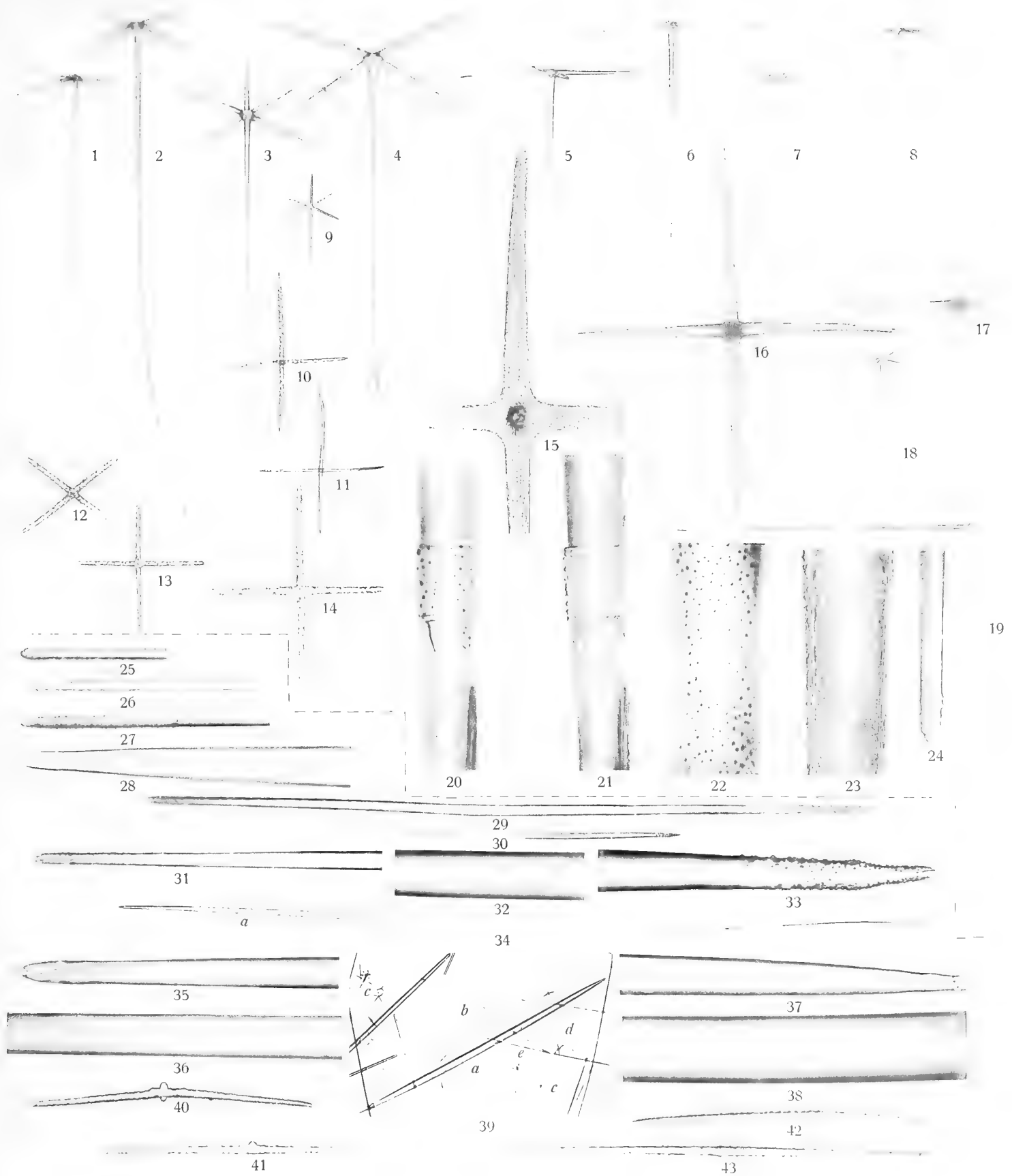


Fig. 1—24 *Bathydorus laevis* F. E. Sch., subspecies *spinosissimus* n. subsp. 1—8, 10, 11, 14—24 (A); 9, 12, 13 (B).  
 Fig. 25—43 *Staurocalyptus hamatus* n. sp.

Lendenfeld photographed.



PLATE 17.

PLATE 17.

**Staurocalyptus hamatus** LENDENFELD.

Figures 1-25.

- 1-8.— Hemioxyhexasters and microoxyhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
1-3, microoxyhexactines with hook-like rays;  
4, hemioxyhexaster with partly straight, partly hook-like rays (end-rays);  
5-8, hemioxyhexasters with straight rays.
- 9, 10.— Groups of spicules from spicule-preparations; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
a, dermal rhabd; b, hemioxyhexasters with straight rays; c, microoxyhexactine with hook-like rays, one of which is abnormally elongated; d, discoctasters; e, small discohexaster.
- 11, 12.— Two regular discoctasters with one main-ray axis parallel to the optical axis of the microscope; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 13.— Group of spicules from a spicule-preparation; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
d, part of an irregular discoctaster; e, small discohexasters.
- 14-16.— Discoctasters with the three main (main-ray) axes oblique to the optical axis of the microscope; magnified 600:  
14, an irregular discoctaster; phot. Zeiss, apochr. 4, compens. oc. 12;  
15, 16, regular discoctasters; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 17, 18.— Centre of a discoctaster with the three main (main-ray) axes oblique to the optical axis of the microscope; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
17, focussed higher; 18, focussed lower.
- 19-23.— Centres of two discoctasters with one main-ray axis parallel to the optical axis of the microscope; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
19, 20, of one discoctaster;  
19, focussed higher; 20, focussed lower;  
21-23, of another discoctaster;  
21, focussed higher; 22, focussed lower; 23, focussed still lower.
- 24, 25.— End-rays of discoctasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
24, of a large discoctaster;  
25, of a small discoctaster.

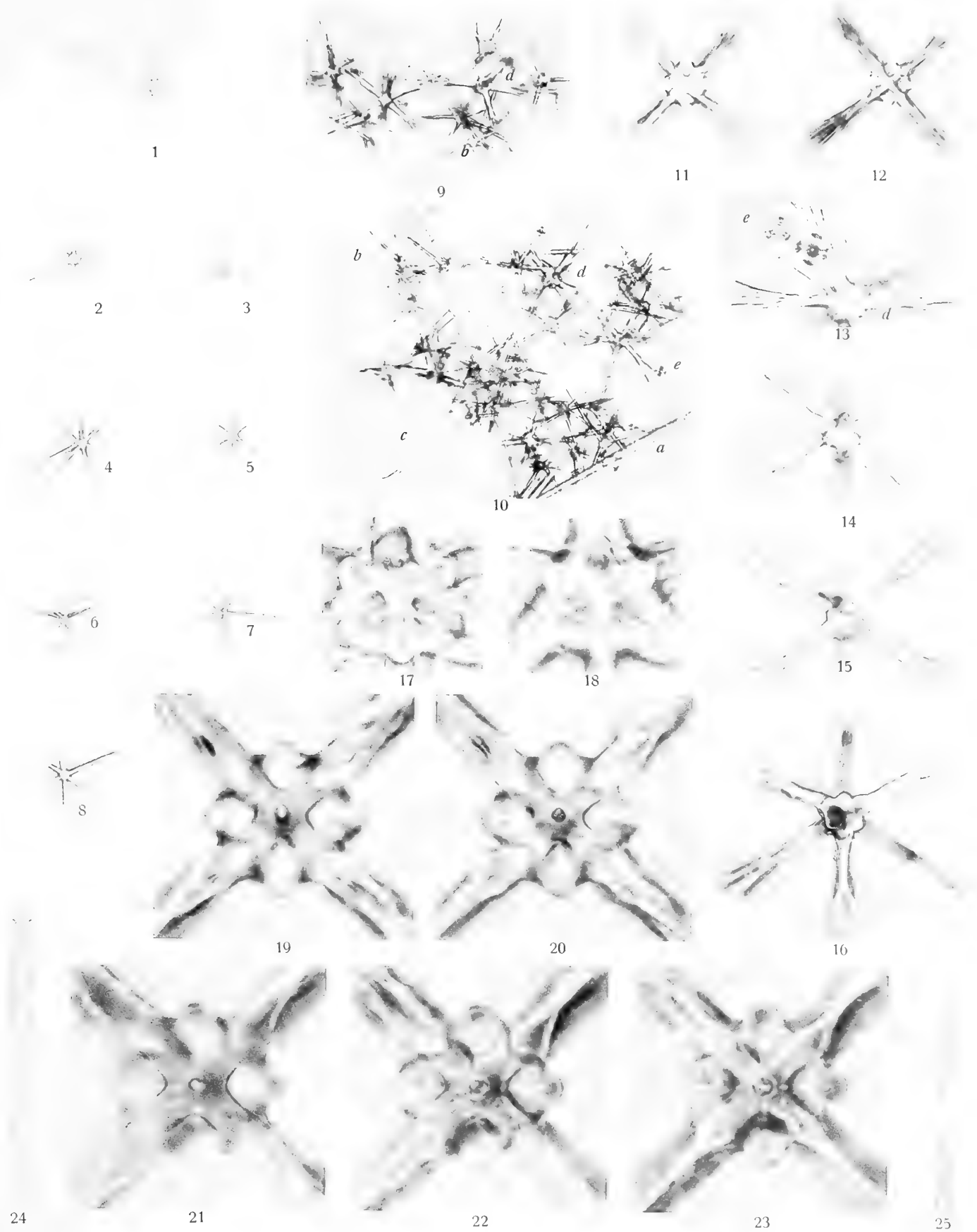


Fig. 1—25 *Staurocalyptus hamatus* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 18.

PLATE 18.

**Staurocalyptus hamatus** LENDENFELD.

Figures 1-14.

- 1-4.— Two small discohexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, 2, one small discohexaster;  
1, focussed higher; 2, focussed lower;  
3, 4, another small discohexaster;  
3, focussed higher; 4, focussed lower.
- 5, 6.— Views of the sponge after removal of the Dieranodromia; reduced 1:9.85; phot. Zeiss, anastig.  
480/412 mm.:  
5, from below;  
6, from above.
- 7.— A small discohexaster; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 8-10.— Side-views of hypodermal pentaactines; magnified 30; phot. Zeiss, planar 20 mm.
- 11, 12.— Part of a spicule-group; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
11, focussed higher; 12, focussed lower;  
a, dermal rhabd; b, small discohexasters.
- 13.— Part of a large rhabd of abnormal structure; magnified 600; u. v. phot. Zeiss, q. monochr. 6, q. oc. 10.
- 14.— The sponge with the Dieranodromia seen from the front; natural size; phot. Zeiss, anastig.  
480/412 mm.

**Holascus edwardsii** LENDENFELD.

Figures 15-26.

- 15.— Group of slender-rayed comital triactines; magnified 30; phot. Zeiss, planar 20 mm.
- 16.— Group of slender-rayed comital triactines, tetractines, and pentaactines; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4.
- 17, 18.— Hypogastral hexactines; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4.
- 19-21.— Hypodermal hexactines; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4.
- 22.— Surface-view of the skeleton of the body-wall. The soft parts and most of the smaller spicules are removed. The large choanosomal pentaactines are still nearly in their natural position. Magnified 7.5, phot. Zeiss, planar 50 mm.:  
a, large choanosomal pentaactines; b, comitals.
- 23.— The central part of a slender-rayed, comital spicule with two fully developed long rays, one considerably reduced ray, and two insignificant ray-rudiments which appear as slight protuberances; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 24-26.— The distal part of the distal ray of three hypodermal hexactines; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.

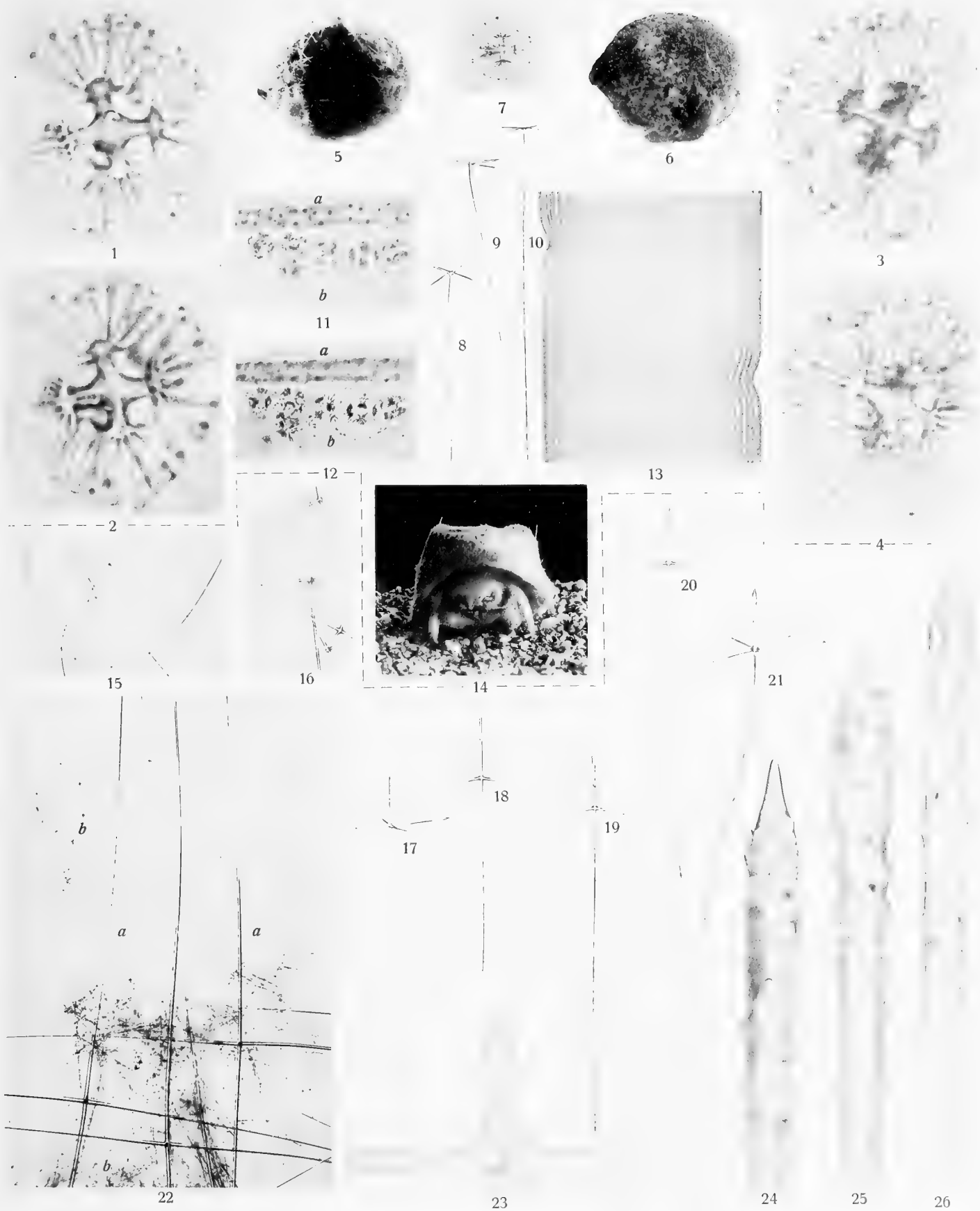


Fig. 1—14 *Staurocalyptus hamatus* n. sp.

Fig. 15—26 *Holascus edwardsii* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 19.

PLATE 19.

**Holascus edwardsii** LENDENFELD.

Figures 1-24.

- 1-3.— Oxyhexasters; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.  
4, 5.— Parts of hemioxyhexasters; magnified 600;  
4, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
5, phot. Zeiss, apochr. 4, compens. oc. 12.  
6-10.— Oxyhexasters and hemioxyhexasters; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
11.— An end-ray of an oxyhexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
12, 13.— The central part (the main-rays) of a graphiome; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:  
12, focussed high; 13, focussed low.  
14.— Part (the two tips) of a ring-shaped sigm; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
15.— Ring-shaped sigm with the spiral axis obliquely situated; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.  
16-21.— Ring-shaped sigms with the spiral axis parallel to the optical axis of the microscope; magnified 600:  
16, 19-21, phot. Zeiss, apochr. 4, compens. oc. 12;  
17, 18, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
22-24.— Centrotyle rhabds; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

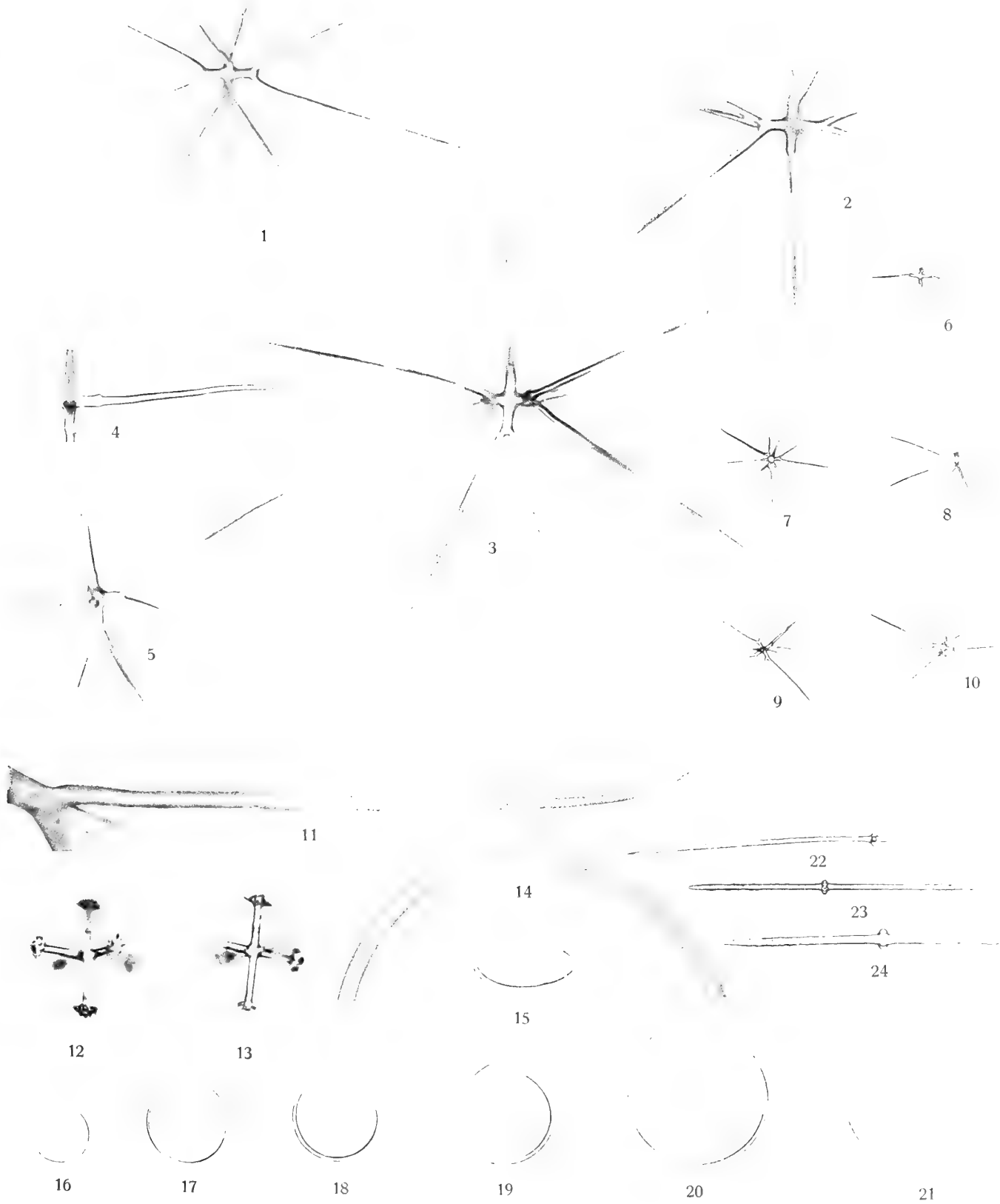


Fig. 1—24 *Holascus edwardsii*, n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 20.

PLATE 20.

**Holascus edwardsii** LENDENFELD.

Figures 1-20.

- 1, 2.— Large choanosomal pentactines; magnified 2.3; phot. Zeiss, anastig. 167 mm.  
3.— Inner surface of the body-wall of a specimen cut in half longitudinally; reduced 1:6.5; phot. Zeiss, anastig. 480/412 mm.  
4.— View of a specimen (outer surface of the body-wall); reduced 1:6.5; phot. Zeiss, anastig. 480/412 mm.  
5-10.— The distal end-part of anchoring spicules; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12: a (in figs. 5-8), axial cross.  
11-15.— Different parts of one and the same anchoring spicule; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
11, portion of the proximal smooth part;  
12-14, successive portions of the spined distal part;  
15, the distal end-part with its anchor.  
16-20.— The distal end-part of anchoring spicules; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

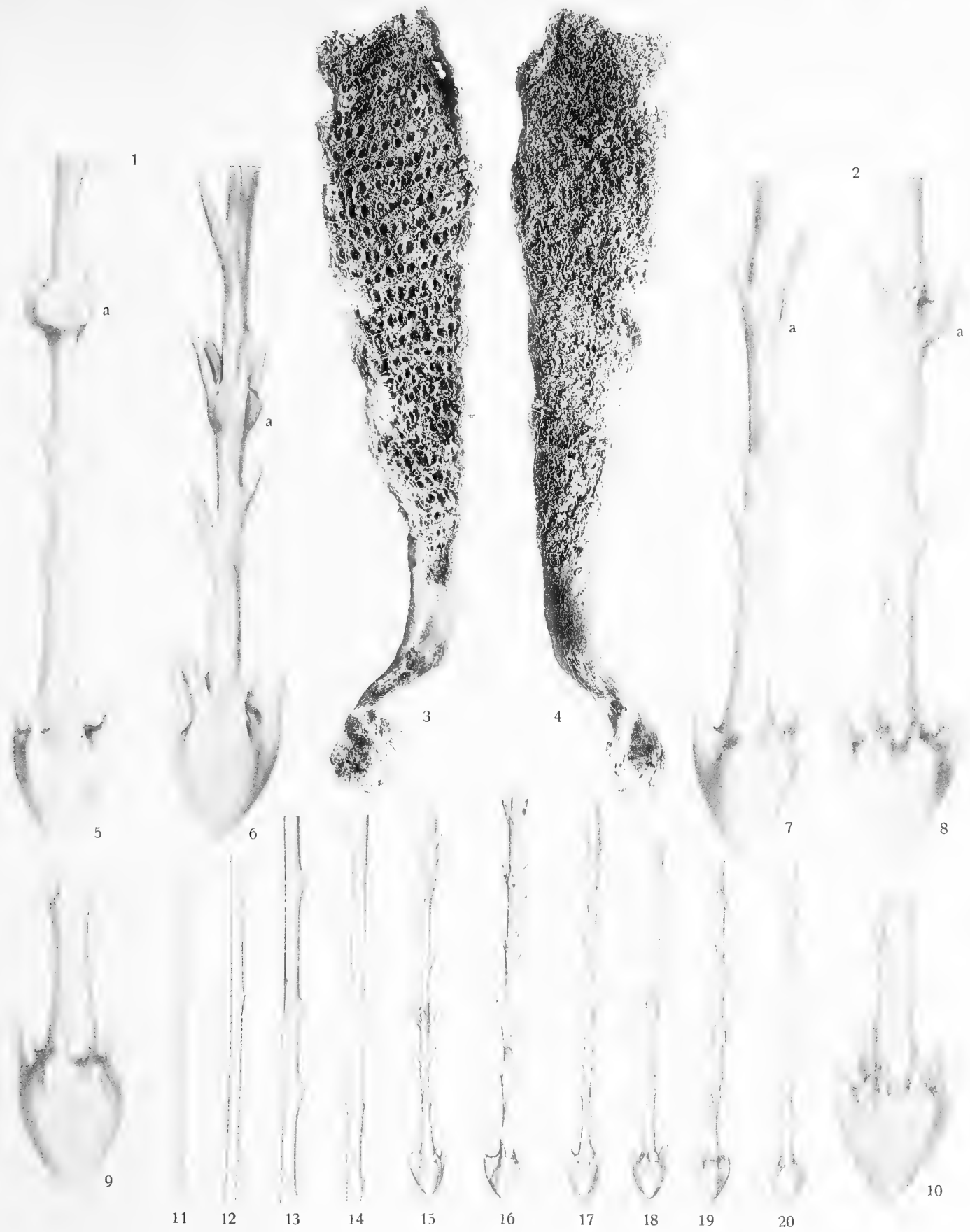


Fig. 1—20 *Holascus edwardsii* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 21.

PLATE 21.

**Holascella taraxacum** LENDENFELD.

Figures 1-13.

- 1, 2.— A main-ray with its end-rays of an oxyhexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, focussed higher; 2, focussed lower.
- 3, 4.— The distal part of an end-ray of a discohexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
3, focussed higher; 4, focussed lower.
- 5-7.— The distal part of end-rays of three different discohexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 8.— View of the most complete specimen; reduced 1:0.7; phot. Zeiss, anastig. 480/412 mm.
- 9.— Part of an end-ray of an oxyhexaster; magnified 2000; u. v. phot. Zeiss q. monochr. 1.7, q. oc. 10.
- 10.— Centrum and main-rays of a discohexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 11, 12.— Large and small discohexasters; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 13.— Small discohexasters; magnified 300; u. v. phot. Zeiss, q. monochr. 6, q. oc. 5.

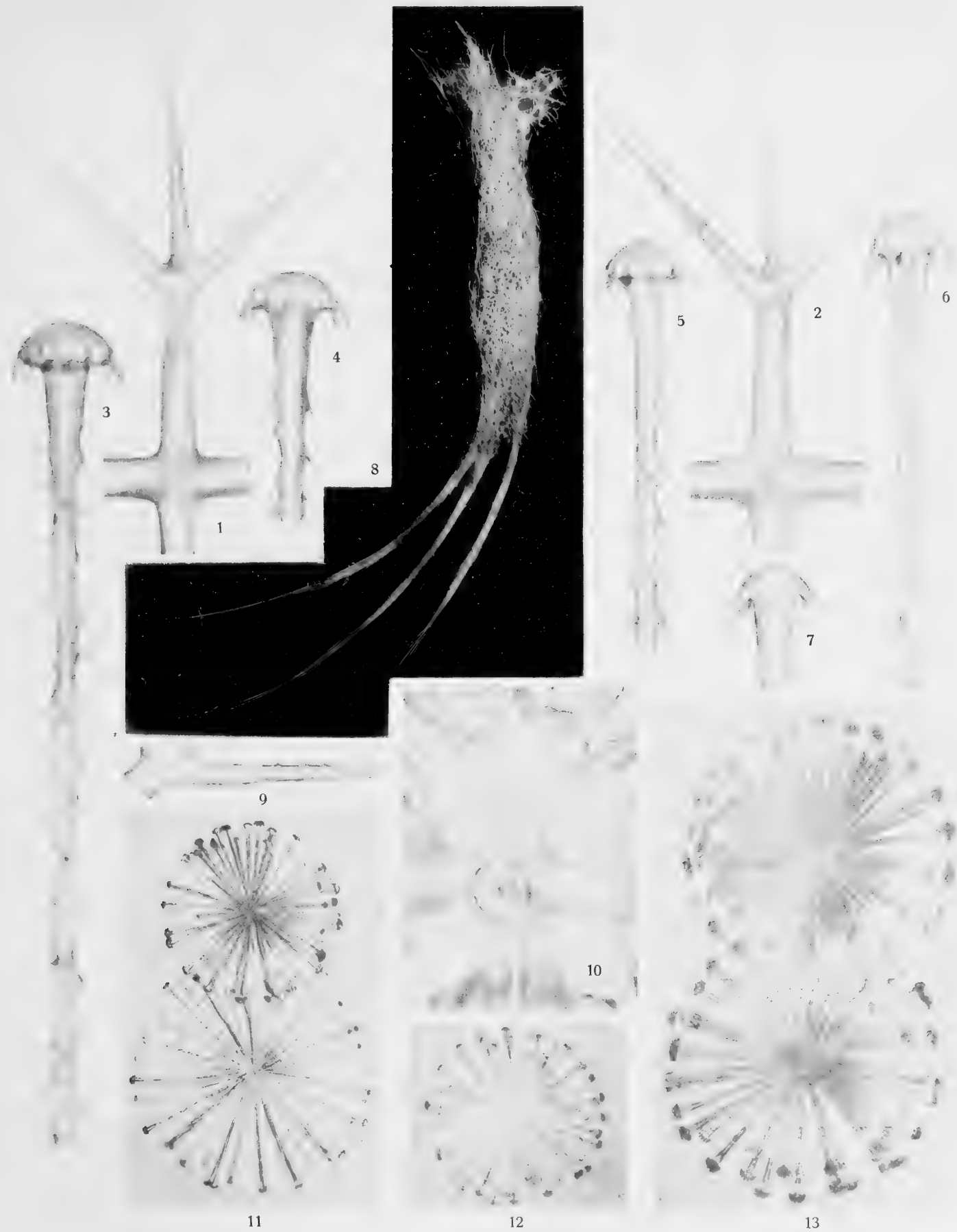


Fig. 1—13 *Holascella taraxacum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 22.

PLATE 22.

**Holascella taraxacum** LENDENFELD.

Figures 1-41.

- 1-4.— Superficial (hypodermal, hypogastral) hexactines; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.
- 5-11.— Large choanosomal hexactines, pentactines, and tetractines; magnified 7.5; phot. Zeiss, planar 50 mm.
- 12-17.— The outer protruding ray of superficial (hypodermal, hypogastral) hexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 18, 19.— The distal part of a ray of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
18, focussed higher; 19, focussed lower.
- 20-25.— Micro-hexactines and -pentactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 26.— The lower, distal end of an anchoring spicule; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 27, 28.— Parts of groups of onychhexasters in spicule-preparations; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 29-35.— The tyles and adjacent parts of centrotyle rhabds; magnified 200; phot. Zeiss, apochr. 8 compens. oc. 6.
- 36.— Portion of a ray of a large choanosomal hexactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 37.— The lower, distal end of an anchoring spicule; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 38-41.— Ends of rhabds; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

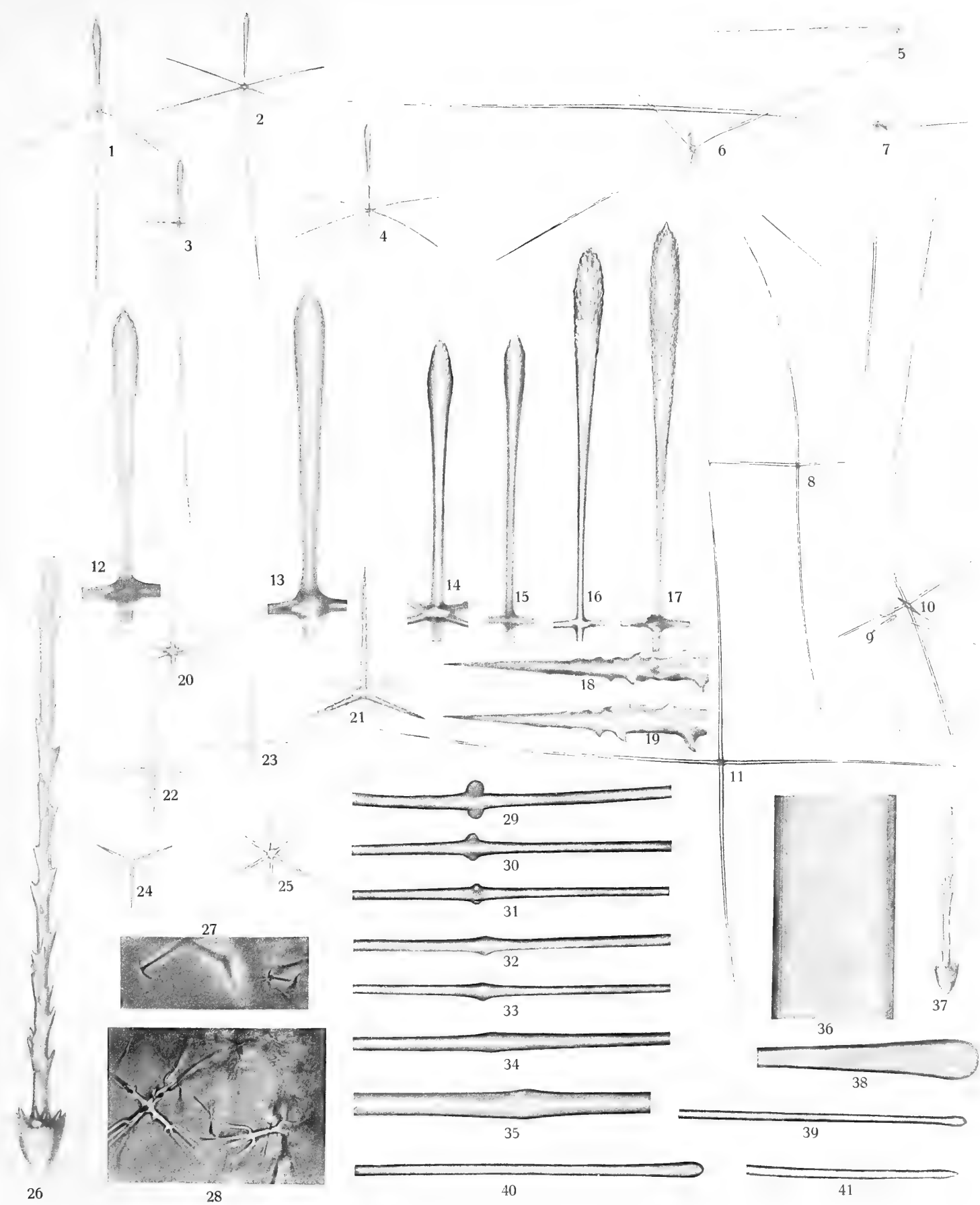


Fig. 1-41 *Holascella taraxacum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 23.

PLATE 23.

**Holascella taraxacum** LENDENFELD.

Figures 1-3.

- 1.— Portion of the distal part of a longitudinal ray of a large choanosomal hexactine; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 2, 3.— Two distal ends (anchor-heads) of anchoring spicules; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.

**Holascella ancorata** LENDENFELD.

Figures 4-25.

- 4.— A part of a ray of a principal tetractine where regeneration took place; magnified 600; u. v. phot. Zeiss, q. monochr. 6, q. oc. 10.
- 5.— A microdiscohexactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 6, 7.— The central parts of a microdiscohexactine (fig. 6) and a hemidiscohexaster (fig. 7); magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 8.— A microoxyhexactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 9.— View of the specimen; magnified 1.4; phot. Zeiss, anastig. 167 mm.
- 10.— Portion of a group of microscleres from a spicule-preparation; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - a, a ray of a microdiscohexactine; b, rays of microonychhexactines.
- 11.— The distal part of a ray of a microonychhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 12, 13.— The distal ray of two superficial hexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - 12, of a hypodermal hexactine; 13, of a hypogastral hexactine.
- 14.— Group of microscleres from a spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - a, microdiscohexactines; b, a microonychhexactine.
- 15.— Fragmentary onychhexasters; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 16.— A ray of a microonychhexactine; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 17-25.— Six distal ends of rays of discohexasters, hemidiscohexasters, or microdiscohexactines; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.

Of four there is only one view (figs. 19-22). Of one (figs. 17, 18) there are two views (fig. 17, focussed lower, fig. 18, focussed higher), and of another (figs. 23-25) there are three views (fig. 23, focussed high, fig. 24, focussed intermediate, fig. 25, focussed low).

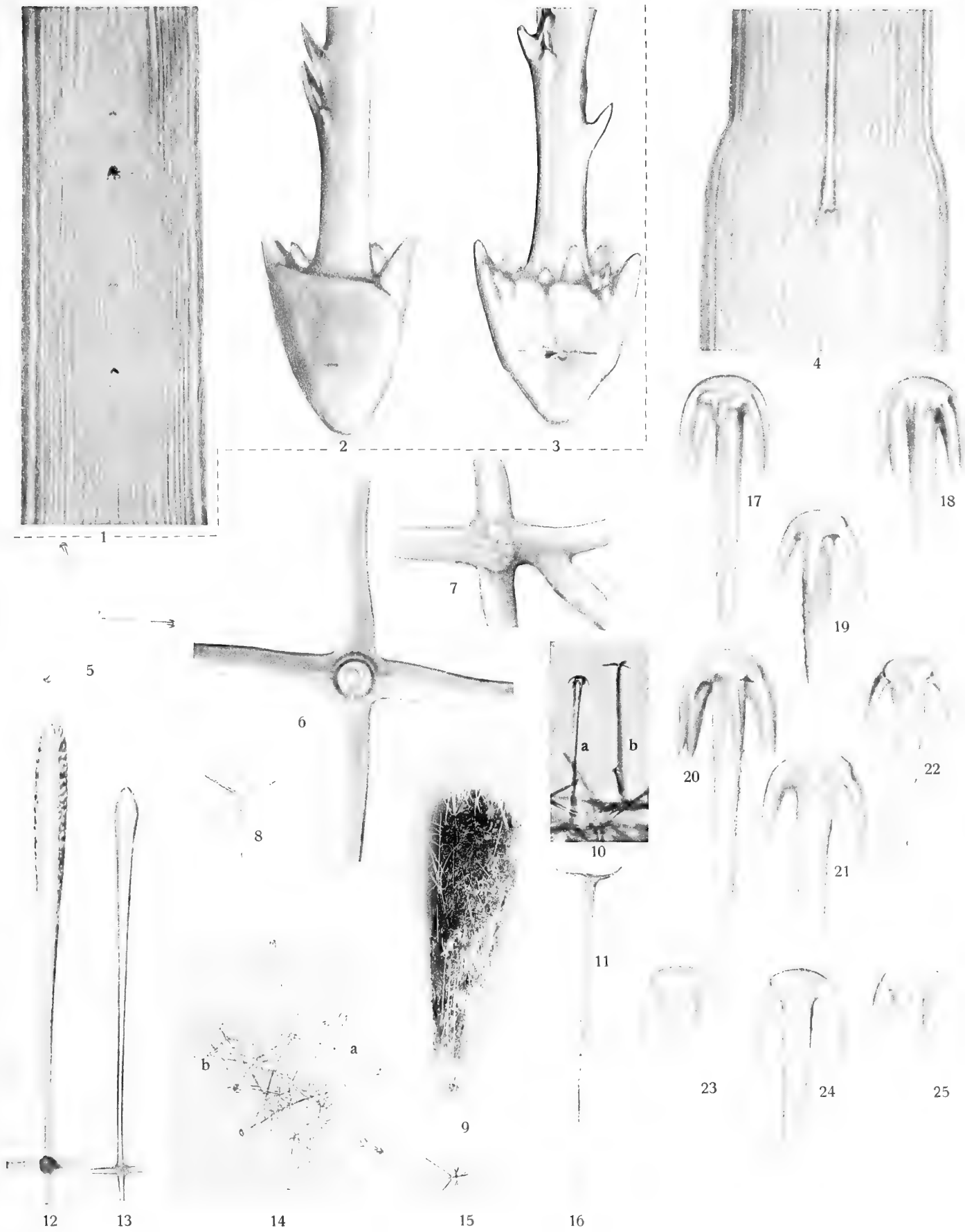


Fig. 1-3 *Holascella taraxacum* n. sp.  
 Fig. 4-25 *Holascella ancorata* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 24.

PLATE 24.

**Holascella ancorata** LENDENFELD.

Figures 1-9.

- 1, 2.— Parts of spiny hexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 3.— Group of principal spicules; magnified 4; phot. Zeiss, planar 100 mm.
- 4.— Two microscleres from a spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
a, a microonychhexactine; b, a floricome.
- 5-7.— Parts of floricomes; magnified 1000; phot. Zeiss, H. I. apochr. 2, compens. oc. 12:  
5, the end of a main-ray with its verticil of end-rays, all of which are broken off rather short, seen from above;  
6, the central part (main-ray cross);  
7, the greater part of a whole floricome.
- 8.— The central part of a tetractine principal spicule; magnified 300; u. v. phot. Zeiss, q. monochr. 6, q. oc. 5.
- 9.— The central part of a triactine comital spicule; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

**Holascella euonyx** LENDENFELD.

Figures 10-17.

- 10, 11.— The central part (main-rays) of two small discohexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 12.— A small discohexaster; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 13, 14.— Group of microscleres from a spicule-preparation; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
13, focussed lower; 14, focussed higher;  
a, part of an onychhexactine; b, small discohexaster.
- 15.— The greater part of a small discohexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 16, 17.— Group of two small discohexasters from a spicule-preparation; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
16, focussed lower; 17, focussed higher.

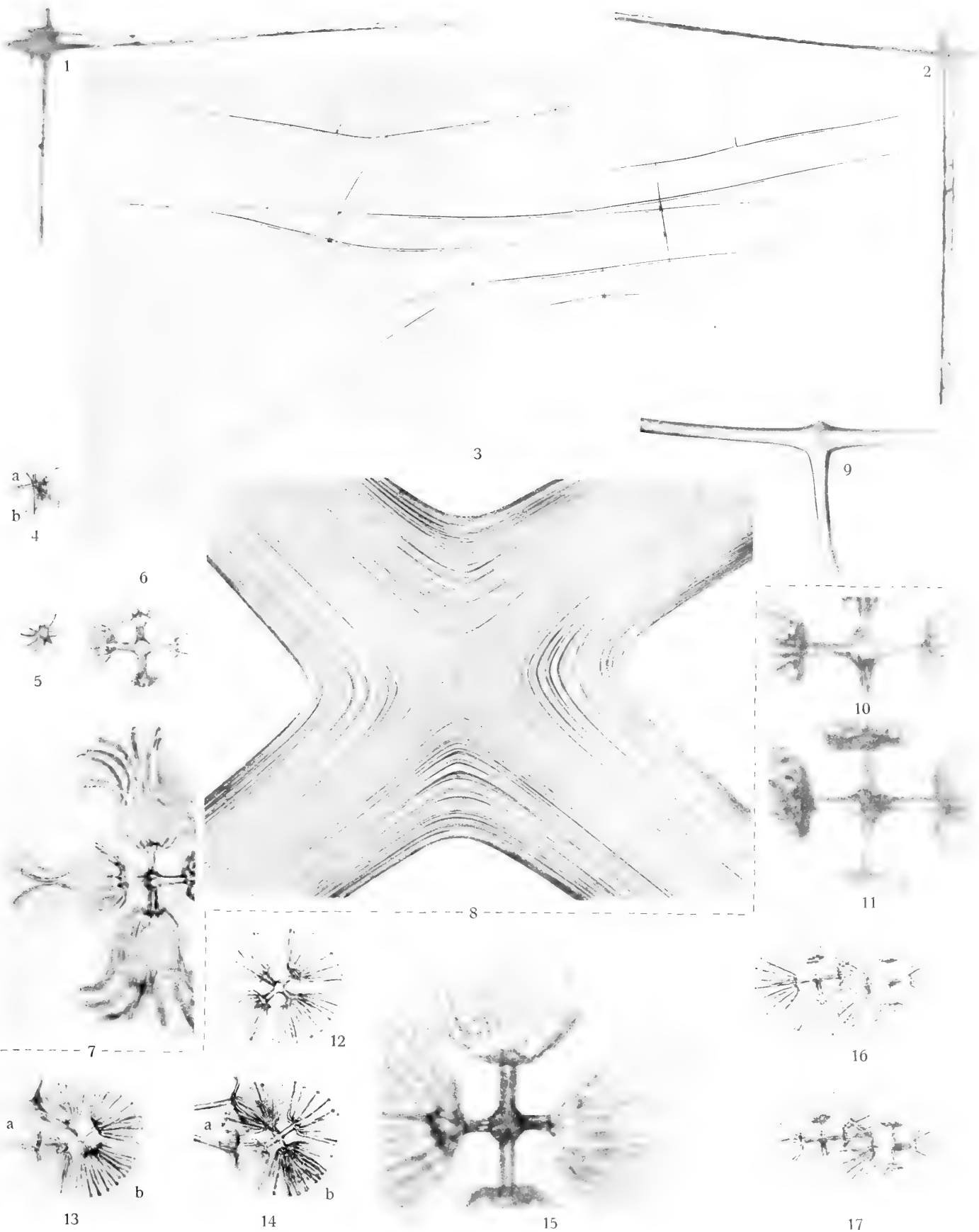


Fig. 1—9 *Holascella ancorata* n. sp.

Fig. 10—17 *Holascella euonyx* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 25.

PLATE 25.

**Holascella euonyx** LENDENFELD.

Figures 1-24.

- 1.— The end of a ray of an onychhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 2, 3.— The end of a ray of a large discohexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
2, focussed higher; 3, focussed lower.
- 4, 5.— The end of a ray of a large discohexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
4, focussed higher; 5, focussed lower.
- 6.— The end of a ray of an onychhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 7-9.— Onychhexactines and hemionychhexaster; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
7, 9, onychhexactines; 8, a hemionychhexaster.
- 10, 11.— Large discohexactines; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 12.— Apical view of the terminal spine-verticil (end-disc) of the upstanding ray of the large discohexactine represented in fig. 11; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 13.— Group of microscleres from a spicule-preparation; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
a, small discohexasters; b, onychhexactine.
- 14, 15.— Side-view of superficial hexactines; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 16.— The central part of a large tetractine principal spicule; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 17.— View of the specimen; reduced 1:0.86; phot. Zeiss, Tessar 250 mm.
- 18.— A tetractine comital spicule; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 19, 20.— Two groups of comital and other medium-sized spicules; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 21, 22.— The distal part of the distal ray of a superficial hexactine; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
21, focussed higher; 22, focussed lower.
- 23, 24.— The distal part of the distal ray of a superficial hexactine; magnified 600; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
23, focussed higher; 24, focussed lower.

**Farrea occa scutella** LENDENFELD.

Figures 25-29.

- 25-29.— Small hexactines, attached and free; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
25, a hexactine attached to a stout beam of the main network;  
26, a free hexactine;  
27, 28, hexactines attached to slender beams;  
29, hexactine attached to a medium beam.

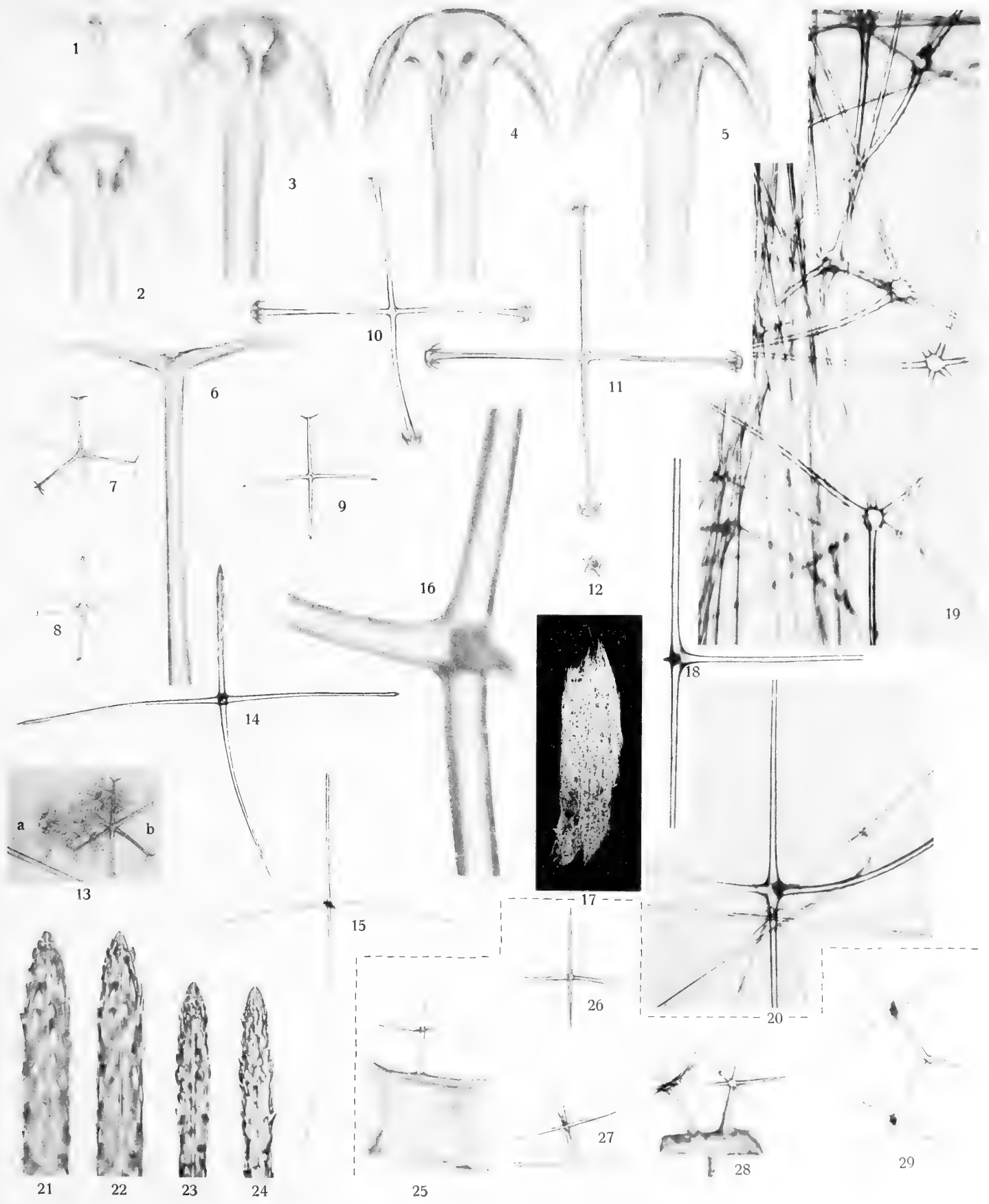


Fig. 1—24 *Holascella euonyx* n. sp.  
Fig. 25—29 *Farrea occa* Bwbk. var. *scutella* n. var.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 26.

PLATE 26.

**Farrea occa scutella** LENDENFELD.

Figures 1-21.

- 1-3.— Parts of oxyhexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, the distal part of a main-ray with the basal parts of the end-rays arising from it;  
2, a whole end-ray;  
3, the centre and one main-ray with its end-rays.
- 4-6.— Oxyhexasters; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 7.— Oxyhexaster; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 8.— Surface-view of a dried portion of the marginal part of the body; magnified 30; phot. Zeiss, planar 30 mm.:  
a, superficial pentactines; b, clavules; c, oxyhexasters.
- 9.— The gastral face of a portion of the skeleton-net of the marginal part of the body; magnified 6.6; phot. Zeiss, planar 50 mm.
- 10.— View of the free upper face of the basal plate of attachment; magnified 6.6; phot. Zeiss, planar 50 mm.
- 11.— View of the previously attached lower face of the basal plate of attachment; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 12, 13.— Portions of the skeleton-net of the upper part of the basal plate of attachment; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 14.— Portion of the skeleton-net of the marginal part of the body; magnified 6.6; phot. Zeiss, planar 50 mm.
- 15.— Apical view of a superficial pentactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 16, 17.— Views of the stalk and central part of the body of a small specimen from opposite sides; magnified 6.6; phot. Zeiss, planar 50 mm.
- 18, 19.— A specimen with two stalks (probably produced by the partial concrescence of two specimens growing near together); magnified 2.1; phot. Zeiss, anastig. 167 mm.:  
18, seen from the side;  
19, seen from above.
- 20, 21.— A regular specimen with a single stalk; magnified 2.1; phot. Zeiss, anastig. 167 mm.:  
20, seen from the side;  
21, seen from above.

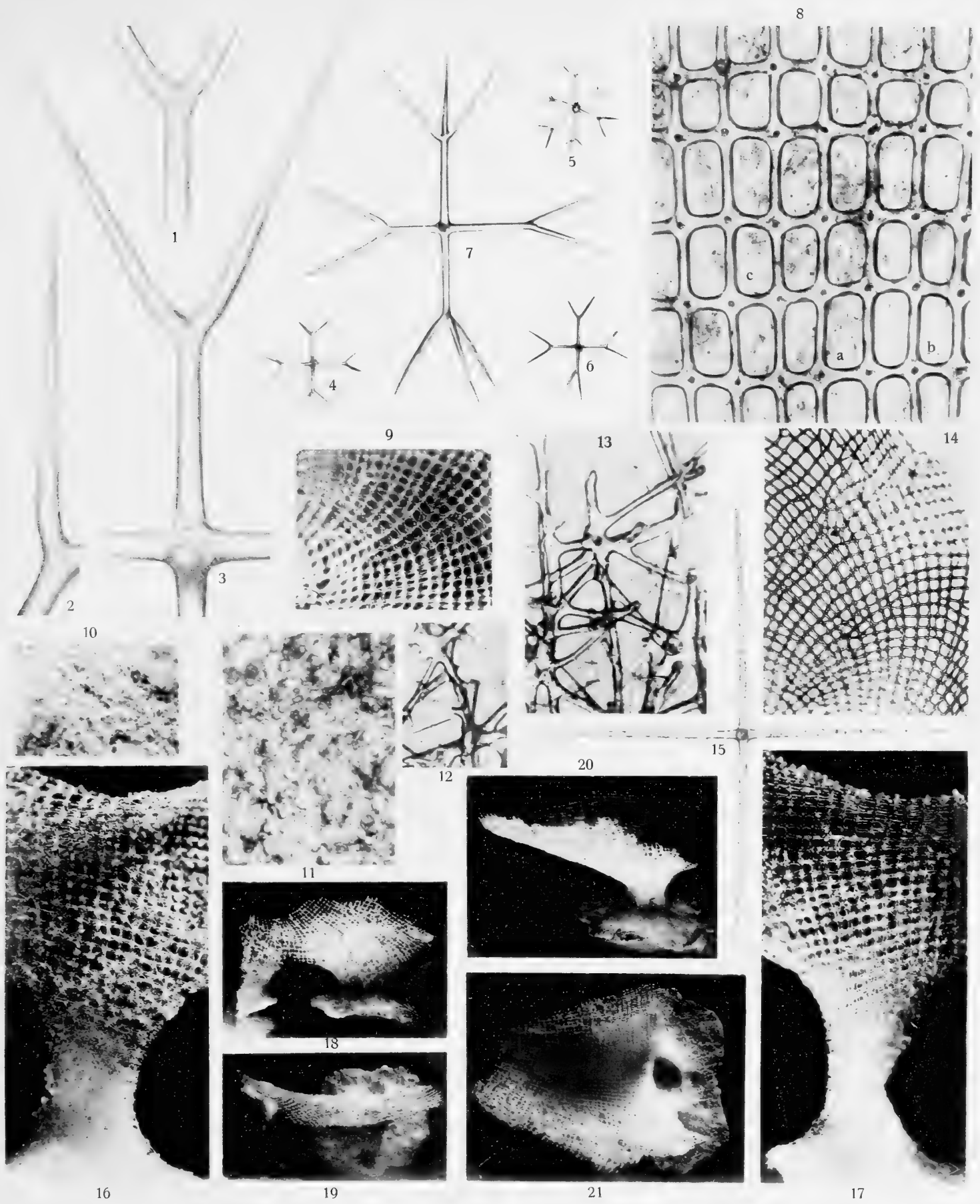


Fig. 1—21 *Farrea occa* Brwbk. var. *scutella* n. var.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 27.

PLATE 27.

**Farrea occa scutella** LENDENFELD.

Figures 1-17.

- 1.— A clavule with large teeth; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 2-5.— Centres (anchor-heads) of two clavules with large teeth; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 2, a clavule-head focussed high;
  - 3, the head of the same clavule focussed lower;
  - 4, another clavule-head focussed high;
  - 5, the head of the same clavule focussed lower.
- 6.— Group of spicules from a spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - a, apical view of a pentactine; b, a clavule with large teeth; c, oxyhexasters.
- 7, 8.— Centre (anchor-head) of a clavule with large teeth; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 7, focussed high; 8, focussed lower.
- 9, 10.— Centre (anchor-head) of a clavule with large teeth and apical protuberance; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 9, focussed high; 10, focussed lower.
- 11.— A clavule with large teeth; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 12.— The centre (anchor-head) of a clavule with small teeth; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 13, 14.— The centre (anchor-head) of a clavule with large, conspicuously spined teeth; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 13, focussed a little higher; 14, focussed a little lower.
- 15.— The apical protuberance of a clavule with large teeth similar to the one whose anchor-head is represented in figs. 9, 10; magnified 2000; phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 16, 17.— The centre (anchor-head) of a clavule with large teeth hardly perceptibly spined; magnified 2000; phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 16, focussed high; 17, focussed low.

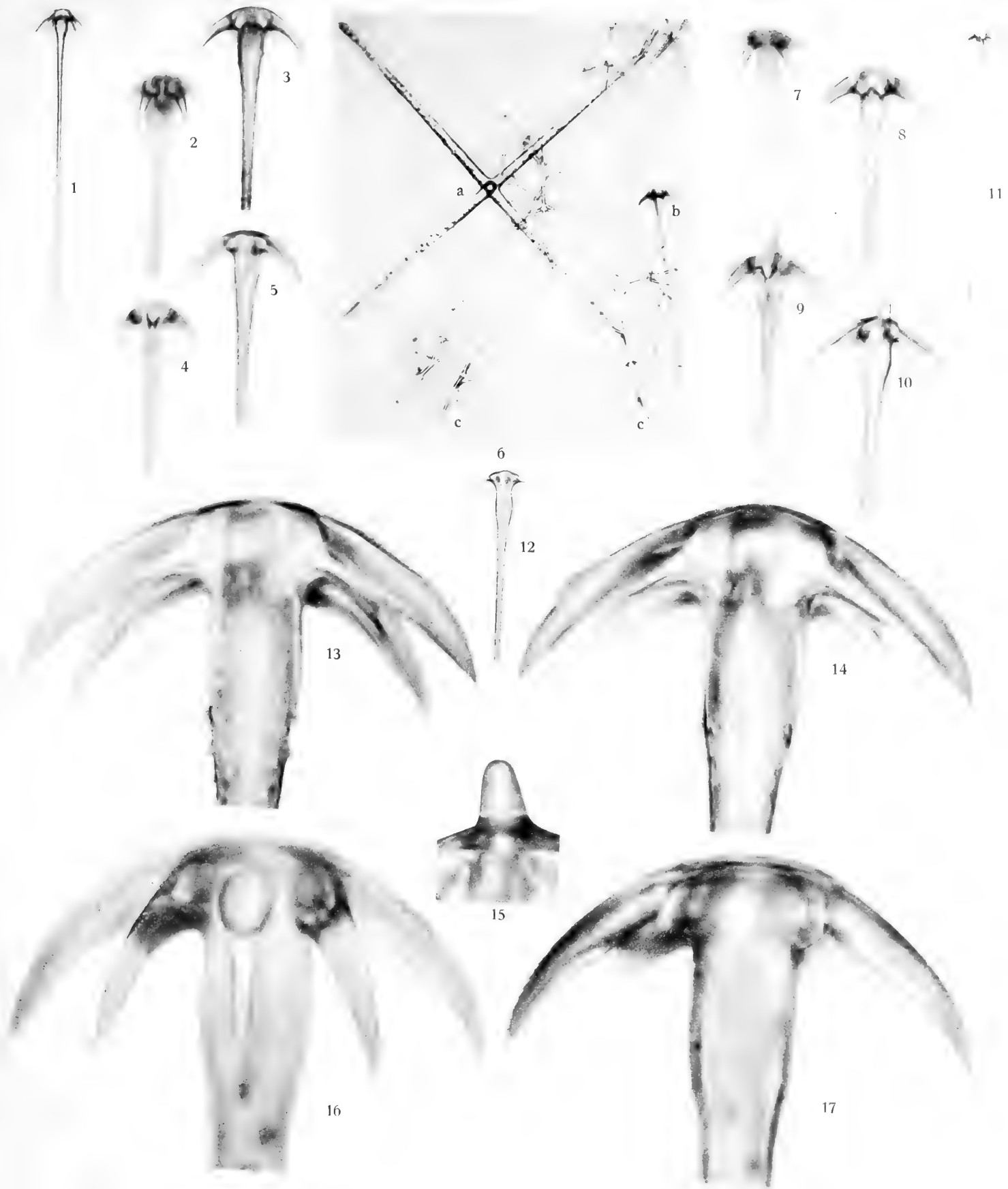


Fig. 1—17 *Farrea occa* Bubb. var. *scutella* n. var.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 28.

PLATE 28.

**Hexactinella monticularis** LENDENFELD.

Figures 1-28.

- 1-4.— Four scopules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
5-7.— The centres and end-rays of three scopules; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
8, 9.— The centre of a scopule; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
8, focussed higher; 9, focussed lower.  
10.— Part of an uncinata; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
11, 12.— Parts of discohexasters; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
11, the end of an end-ray of a small discohexaster seen obliquely from above;  
12, an entire end-ray of a large discohexaster.  
13, 14.— The centres and end-rays of two scopules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
15, 16.— Two large discohexasters; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
17, 18.— Parts of long-spined hexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
19.— Apical view of a superficial pentactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
20.— Part of a small discohexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
21.— Part of the superficial skeleton-net (pentactines soldered together); magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
22.— Part of a beam of the skeleton-net with a spine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
23.— The skeleton-net of part of a specimen; magnified 3.5; phot. Zeiss, planar 100 mm.  
24.— Part of a transverse section through a superficial portion of the skeleton; magnified 20; phot. Zeiss, planar 20 mm.:  
a, internal skeleton-net; b, spines protruding towards the surface.  
25.— Group of discohexasters from a spicule-preparation; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
26.— Portion of the inner, sectioned face of a skeleton-net cut longitudinally in half; magnified 6.6; phot. Zeiss, planar 50 mm.  
27.— Part of the superficial skeleton-net (pentactines soldered together); magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
28.— Surface-view of the skeleton-net of one of the monticular protuberances of the surface; magnified 6.6; phot. Zeiss, planar 50 mm.

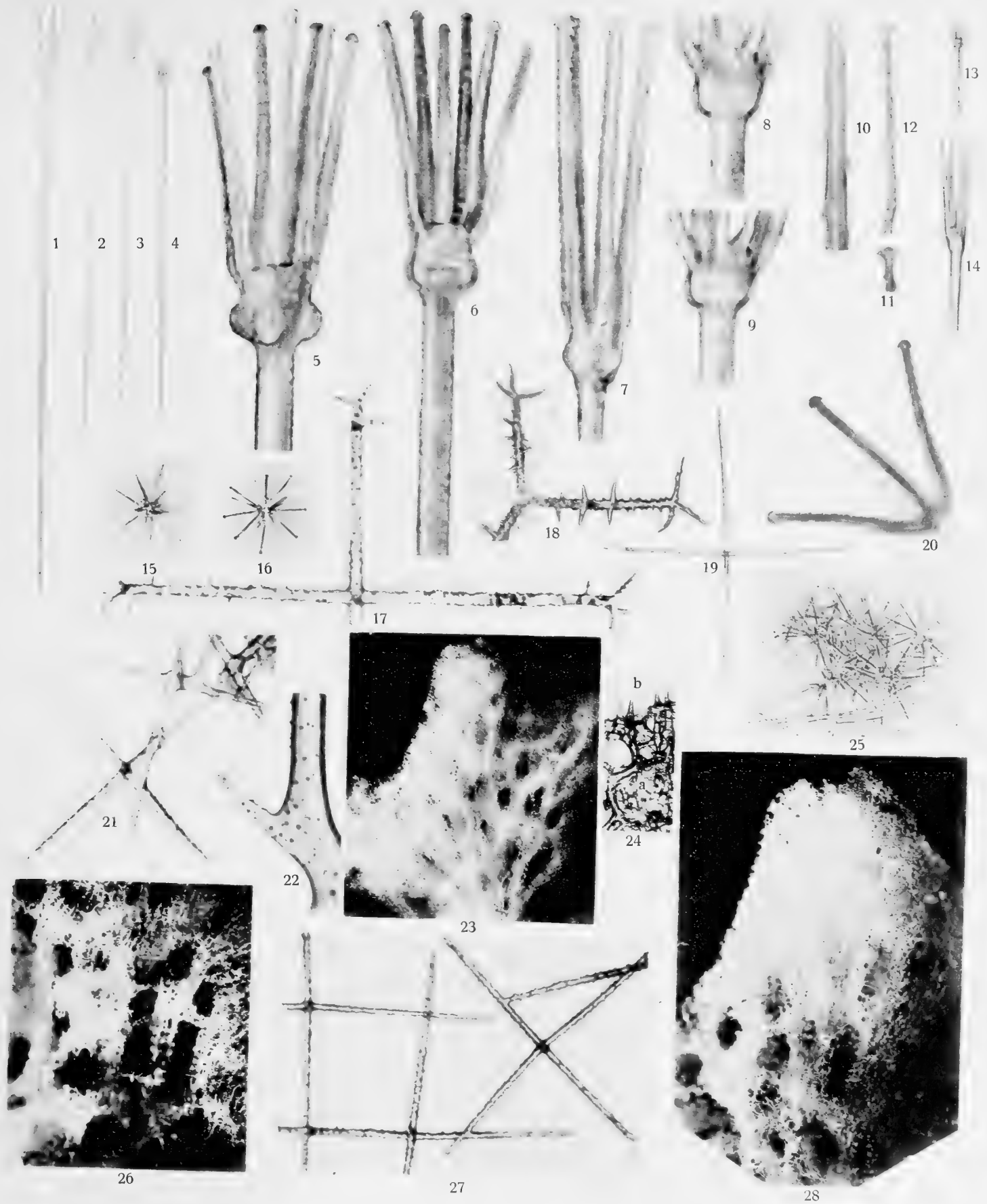


Fig. 1—28 *Hexactinella monticularis* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 29.

PLATE 29.

**Eurete spinosum** LENDENFELD.

Figures 1-26.

- 1, 2.— Scopules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 3-6.— The centres and end-rays of two scopules; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 3, a scopule-centre focussed high;
  - 4, the centre of the same scopule focussed lower;
  - 5, the centre of another scopule focussed high;
  - 6, the centre of the same scopule focussed lower.
- 7, 8.— The centre and end-rays of a scopule; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 7, focussed higher; 8, focussed lower.
- 9.— The central part of a hemioxyhexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 10-13.— Hemioxyhexasters and parts of such; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 10, an ordinary, fairly regular, slender-rayed hemioxyhexaster;
  - 11, 13, parts of ordinary, fairly regular, slender-rayed hemioxyhexasters;
  - 12, a stout-rayed irregular hemioxyhexaster.
- 14-17.— The distal end-parts of main-rays of hemioxyhexasters with one of the end-rays or part of it; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 18, 19.— The two faces of the skeleton-net; magnified 6.6; phot. Zeiss, planar 50 mm.:
  - 18, the dermal face;
  - 19, the gastral face.
- 20, 21.— Apical views of two superficial pentactines (the crosses formed by their lateral rays); magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 22.— A lateral ray of a superficial pentactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 23.— Part of the dermal zone of the skeleton-net; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4.
- 24.— Part of the gastral zone of the skeleton-net; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 25.— Part of the gastral zone of the skeleton-net; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4.
- 26.— Group of spicules from a spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - a, a scopule; b, hemioxyhexasters.

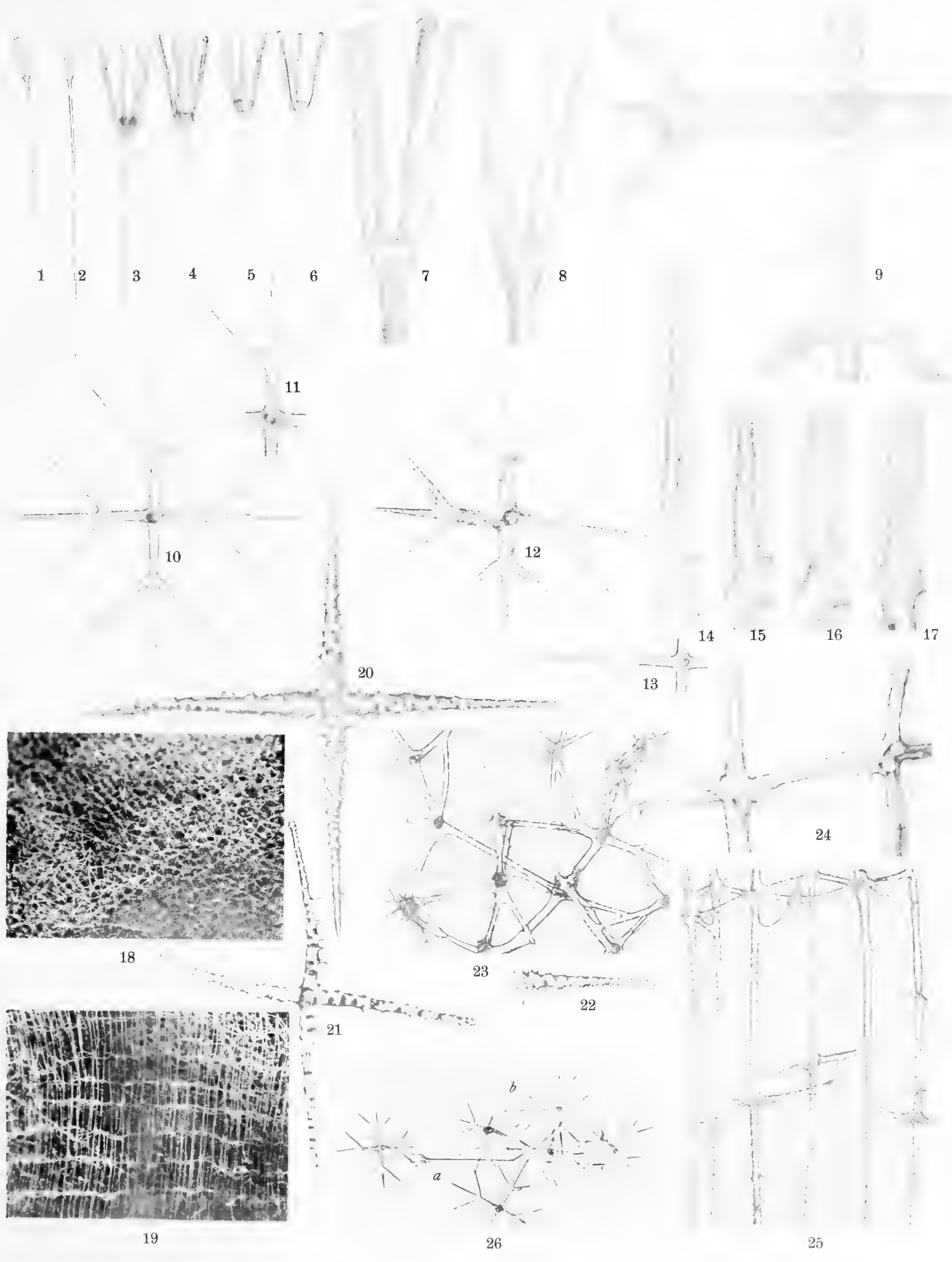


Fig. 1-26 *Eurete spinosum* n. sp.

Lendenfeld photographed





PLATE 30.

PLATE 30.

**Eurete erectum** SCHULZE.

Figures 1-17.

- 1-3.— Side-views of gastral pinules (pinule-derivates); magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 4.— The dermal face of the skeleton-net; magnified 6.6; phot. Zeiss, planar 50 mm.
- 5.— The gastral face of the skeleton-net; magnified 2.1; phot. Zeiss, anastig. 167 mm.
- 6.— The gastral face of the dictyonal skeleton-net; magnified 6.6; phot. Zeiss, planar 50 mm.
- 7.— Transverse section through the dermal zone of the tube-wall; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, lateral rays of dermal pinules; c, flagellate chambers; d, distal ray of a dermal pinule; e, dermal spine of the skeleton-net; f, skeleton-net.
- 8.— Apical view of a gastral pinule-derivate; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 9.— Side-view of a gastral pinule; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 10.— Transverse section through the dermal zone of the tube-wall; methyl-violet; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, lateral rays of dermal pinules; c, flagellate chambers; d, distal ray of dermal pinule; e, dermal spine of the skeleton-net; f, skeleton-net.
- 11.— View of portion of the gastral face of the skeleton-net; magnified 20; phot. Zeiss, planar 20 mm.
- 12.— Transverse section through the tube-wall; magnified 30; phot. Zeiss, planar 20 mm.:  
a, lateral rays of dermal pinules; b, lateral rays of gastral pinules; d, distal ray of dermal pinules; f, skeleton-net; g, gastral spines of the skeleton-net; h, distal rays of gastral pinules.
- 13, 14.— Apical views of gastral pinules (pinule-derivates); magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 15.— Transverse section through the gastral zone of the tube-wall; magenta; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
b, lateral rays of gastral pinules; i, gastral scopules.
- 16.— View of the sponge; magnified 1.2; phot. Zeiss, anastig. 480/412 mm.
- 17.— Transverse section through the tube-wall; magenta; magnified 30; phot. Zeiss, planar 20 mm.:  
a, lateral rays of dermal pinules; b, lateral rays of gastral pinules; c, flagellate chambers; d, distal rays of dermal pinules; f, skeleton-net; g, gastral spines of the skeleton-net; h, distal rays of gastral pinules; i, gastral scopules.

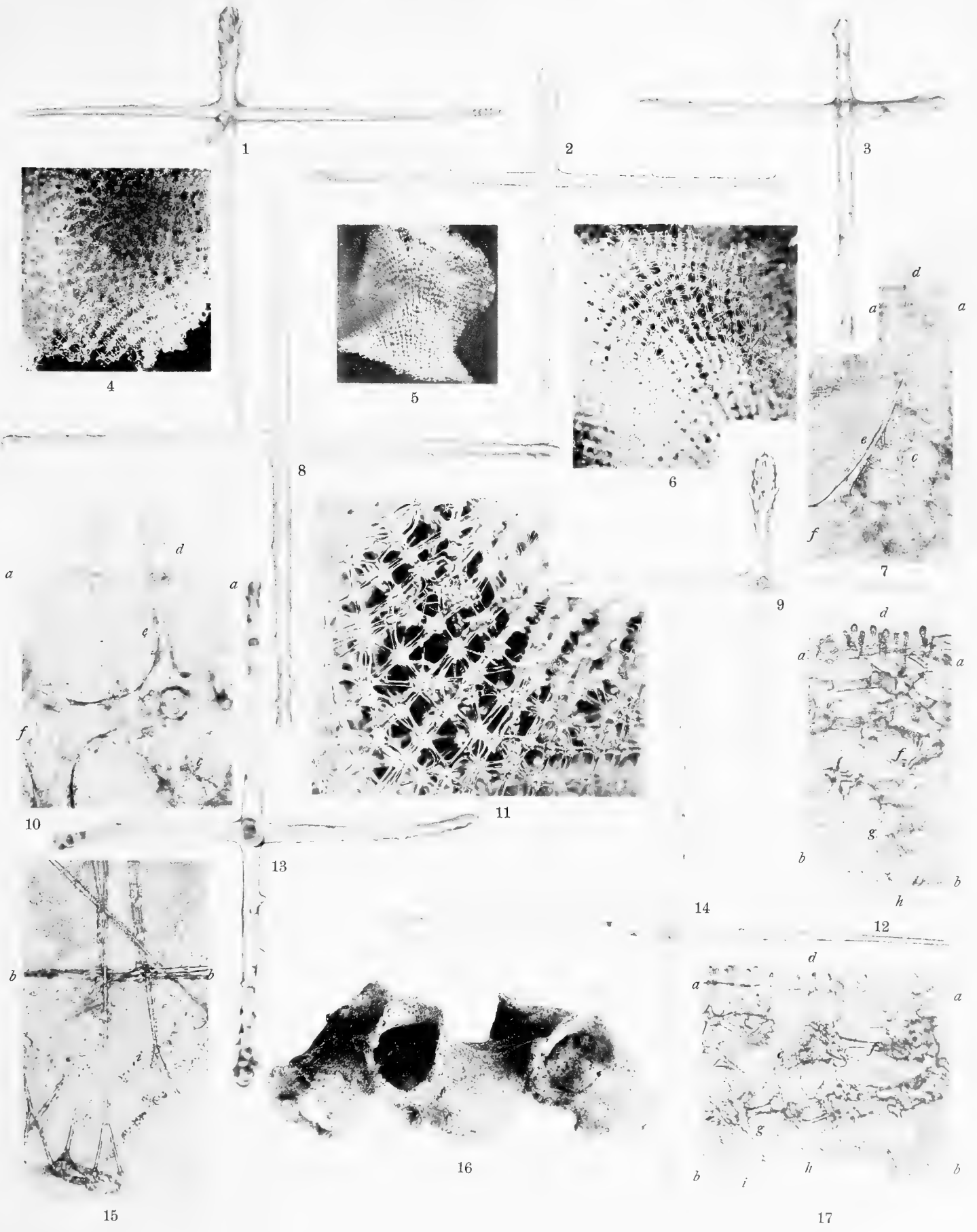


Fig. 1-17 *Eurete erectum* F. E. Sch.

Lendenfeld photographed



PLATE 31.

PLATE 31.

**Eurete erectum** SCHULZE.

Figures 1-28.

- 1.— Centres and end-rays of two gastral scopules with large-headed, strongly divergent end-rays; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 2-5.— Side-views of dermal pinules; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 6-9.— The distal ends of end-rays of two rather large-headed gastral scopules; magnified 1200; phot. Zeiss, H.I. 1/12, compens. oc. 12:
  - 6, an end-ray head focussed high;
  - 7, the head of the same end-ray focussed lower;
  - 8, the head of another end-ray focussed high;
  - 9, the head of the same end-ray focussed lower.
- 10-12.— The centre and the end-rays of a gastral scopule with large-headed, fairly divergent end-rays; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:
  - 10, focussed high; 11, focussed lower; 12, focussed still lower.
- 13.— Part of a large uncinata; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 14.— A small uncinata; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 15.— Part of a discohexaster; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 16.— Group of scopules from a spicule-preparation; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - a, two gastral scopules with strongly divergent, large-headed end-rays; b, a dermal scopule with nearly parallel, terminally not thickened end-rays.
- 17.— The centre and end-rays of a dermal scopule with fairly divergent, terminally only very slightly thickened end-rays; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 18.— An end-ray of a discohexaster; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 19.— The centre and end-rays of a dermal scopule with nearly parallel, terminally not thickened end-rays; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 20.— A gastral scopule with fairly divergent, large-headed end-rays; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 21.— A discohexaster; magnified 600; phot. Zeiss, apochr. 4, compens. oc. 12.
- 22.— Part of the gastral membrane with the crosses formed by the lateral rays of the gastral pinules and pinule-derivates *in situ*; magnified 30; phot. Zeiss, planar 20 mm.
- 23.— Two gastral scopules with fairly divergent, large-headed end-rays; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 24.— Transverse section through the gastral zone of the tube-wall; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - b, lateral rays of gastral pinules; f, skeleton-net; g, gastral spines of the skeleton-net; h, distal rays of the gastral pinules; i, gastral scopules.
- 25-28.— Parts of gastral scopules; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 25, basal part of an end-ray;
  - 26, distal part of an end-ray;
  - 27, 28, centres of two different scopules.



Fig. 1-28 *Eureka erectum* F. E. Sch.

Lendenfeld photographed





PLATE 32.

PLATE 32.

**Farrea** sp. Station 4631.

Figures 1-3.

- 1.— View of the skeleton-net; magnified 2; phot. Zeiss, anastig. 167 mm.  
2, 3.— The two faces of the skeleton-net of the wall of the tubular sponge; magnified 8; phot. Zeiss, planar 50 mm.:  
2, the dermal face;  
3, the gastral face.

**Euretid.** Station 4651.

Figures 4-6.

- 4.— View of the skeleton-net; natural size; phot. Zeiss, anastig. 480/412 mm.  
5, 6.— The two faces of the skeleton-net of the wall of the funnel-shaped sponge; magnified 8; phot. Zeiss, planar 50 mm.:  
5, the inner, concave (gastral?) face;  
6, the outer, convex (dermal?) face.

**Chonelasma** sp. Station 3689.

Figures 7-9.

- 7.— View of the skeleton-net; natural size; phot. Zeiss, anastig. 480/412 mm.  
8, 9.— The two faces of the skeleton-net of the thick, curved, lamellar sponge; magnified 8; phot. Zeiss, planar 50 mm.:  
8, the convex (dermal?) face;  
9, the concave (gastral?) face.

**Caulophacid.** Station 3689.

Figures 10-12.

- 10.— View of the skeleton-net; natural size; phot. Zeiss, anastig. 480/412 mm.  
11, 12.— The two faces of the skeleton-net of the wall of the tubular specimen; magnified 8; phot. Zeiss, planar 50 mm.:  
11, the inner, concave (gastral?) face;  
12, the outer, convex (dermal?) face.

**Hexactinella** sp. Station 4631.

Figures 13-15.

- 13.— View of the skeleton-net; natural size; phot. Zeiss, anastig. 480/412 mm.  
14, 15.— The two faces of the skeleton-net of the thick-walled, funnel-shaped sponge; magnified 8; phot. Zeiss, planar 50 mm.:  
14, the outer, convex face;  
15, the inner, concave face.

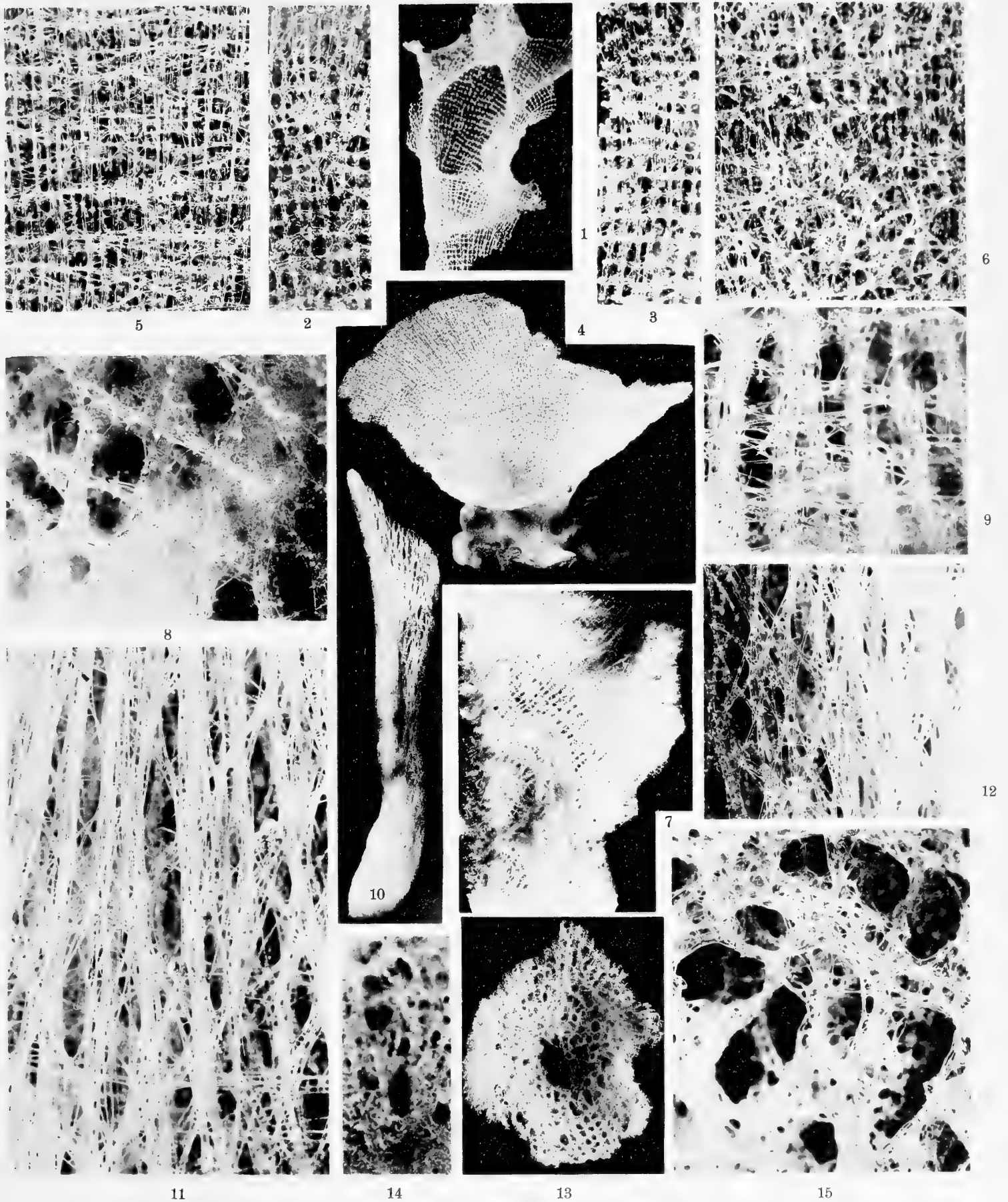


Fig. 1-3 Hexactinellid B (*Farrea* sp.?) from station 4631. Fig. 4-6 Hexactinellid (*Euretid*?) from station 4651.  
 Fig. 7-9 Hexactinellid B (*Chonelasma*?) from station 3689. Fig. 10-12 Hexactinellid A (*Caulophacid*?) from station 3689.  
 Fig. 13-15 Hexactinellid A (*Hexactinella*?) from station 4631.

Lendenfeld photographed



PLATE 33

PLATE 33.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-24.

- 1, 2.— Centrotyle amphioxes; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
3.— Group of small hypodermal amphioxes; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
4.— Small hypodermal amphiox; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
5-14.— Side-views of hypodermal pentactines; magnified 50; phot. Zeiss, achr. aa, compens. oc. 2.  
15.— View of the sponge; magnified 1.1; phot. Zeiss, anastig. 480/412 mm.  
16.— View of the sectioned face of the sponge cut in half longitudinally and axially; magnified 2; phot. Zeiss, anastig. 167 mm.:  
    a, oral cone; b, lower end (place where the stalk is broken off).  
17.— The tip of a lateral ray of a hypodermal pentactine; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
18-23.— Rhabds of the supporting skeleton; magnified 50; phot. Zeiss, achr. aa, compens. oc. 2:  
    18, 19, small, slightly centrotyle amphioxes;  
    20, tylostyle;  
    21, medium centrotyle amphiox;  
    22, medium amphiox;  
    23, large amphiox.  
24.— Oblique apical view of a hypodermal pentactine; magnified 50; phot. Zeiss, achr. aa, compens. oc. 2.

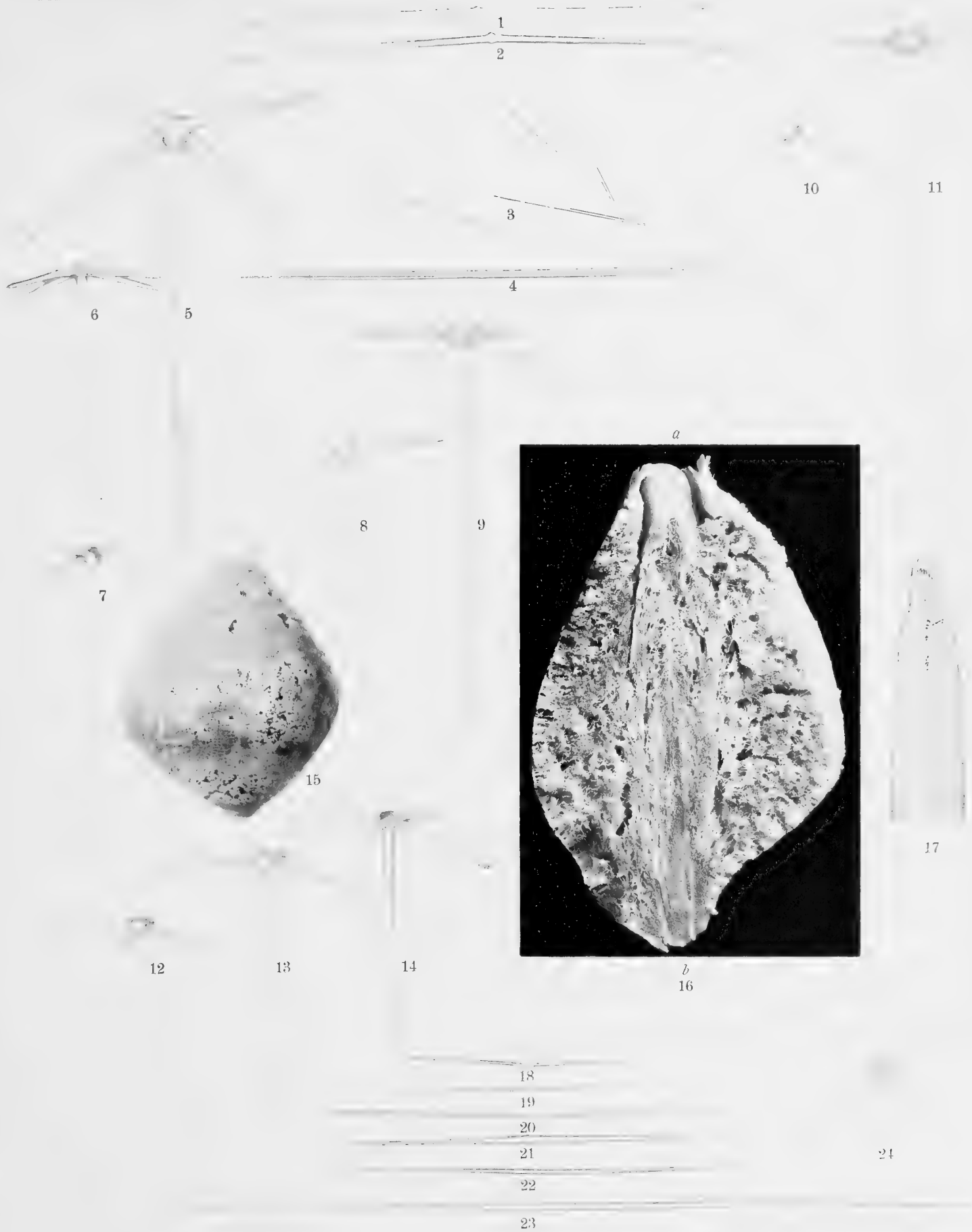


Fig. 1-24 *Hyalonema obtusum* n. sp. var. *gracilis*.





PLATE 34.

PLATE 34.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-19.

- 1.— Section vertical to the surface, through a superficial part of the sponge; magnified 30; phot. Zeiss, planar 20 mm.:  
a, dermal membrane; b, subdermal cavities; c, a hypodermal pentaactine with reduced and terminally rounded apical ray.
- 2.— Radial section through the choanosome; magenta; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 3.— Axial section through the oral cone and the adjacent parts of the upper end of the sponge; magenta; magnified 5; phot. Zeiss, planar 50 mm.:  
a, outer surface (dermal membrane); b, narrow fissure-like gastral cavity between the oral cone and the oral frill; c, summit of the oral cone.
- 4.— Axial section through the lower part of the sponge; magenta; magnified 5; phot. Zeiss, planar 50 mm.
- 5-18.— Choanosomal hexactines of the supporting skeleton; magnified 50; phot. Zeiss, achr. aa, oc. 2:  
5-7, 10, 12, situated with one axis (two rays) parallel to the optical axis, and two axes (four rays) in a plane vertical to the optical axis;  
8, 9, 11, 13-18, situated with the tips of three of the rays in a plane vertical to the optical axis;  
5-7, 11, 15, 16, 18, medium-sized hexactines;  
8, 10, 13, 17, large hexactines;  
9, 12, 14, small hexactines.
- 19.— Radial section through the superficial part of the sponge; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, dermal membrane; b, group of small macramphidises; c, subdermal cavity; d, hexactines of the supporting skeleton.

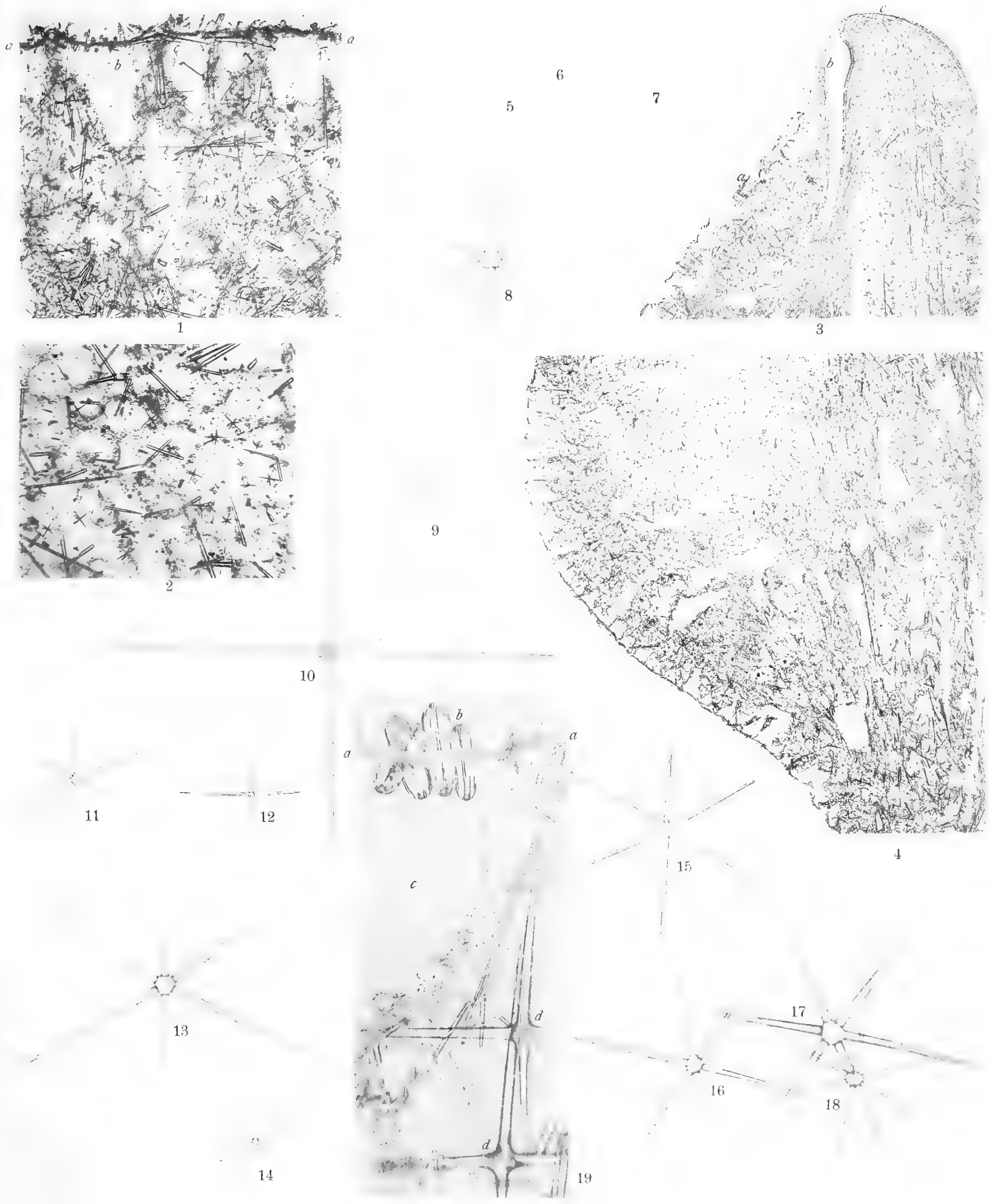


Fig. 1-19 *Hyalonema obtusum* n. sp. var. *gracilis*.

Lendenfeld photographed



PLATE 35.

PLATE 35.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-37.

- 1.— Radial section through the gastral membrane on the outer wall of the gastral cavity; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, pinule-fur.
- 2.— Apical view of the lateral rays of a gastral pentactine pinule; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 3.— Radial section through the gastral membrane on the oral cone; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, pinule-fur.
- 4-9.— Side-views of gastral pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
4, a hexactine gastral pinule;  
5-9, pentactine gastral pinules.
- 10-13.— Diactine pinules of the oral frill; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 14, 15.— The end-part of a ray of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
14, focussed higher; 15, focussed lower.
- 16.— The surface of the oral cone viewed from above; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 17.— Group of microscleres from a centrifuge spicule-preparation; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
a, microhexactines; b, small micramphidiscs.
- 18-22.— Microhexactines and microhexactine-derivates; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
18, 19, regular microhexactines;  
20-22, microhexactine-derivates with two well-developed and four less (20) or more (21) or quite (22) reduced rays.
- 23.— Apical view of the lateral rays of a dermal pentactine pinule; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 24.— Radial section through the dermal membrane on the outer surface; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, pinules; b, small macramphidisc.
- 25.— Dermal pentactine pinule with angularly bent apical (distal) ray; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 26-28.— The distal part (centrum and distal ray) of diactine pinules of the oral frill; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 29-37.— Side-views of dermal pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
29, 30, hexactine dermal pinules;  
31-37, pentactine dermal pinules.

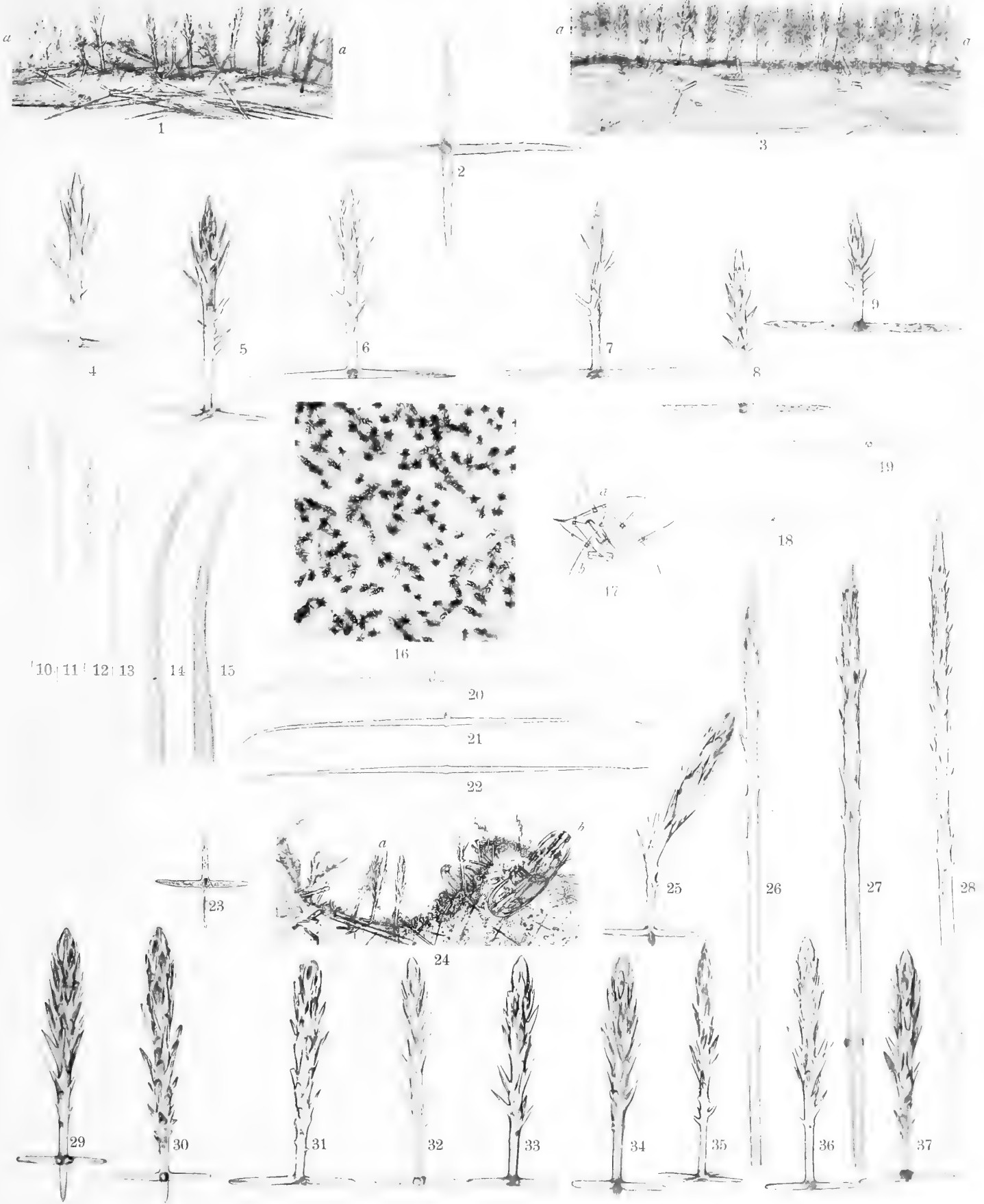


Fig. 1-37 *Hyalonema obtusum* n. sp. var. *gracilis*.

Lendenfeld photographed





PLATE 36.

PLATE 36.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-45.

- 1-25.—Tetractine acanthophores of the sheaths enclosing the large stalk-spicules in the basal part of the sponge-body; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
1-13, forms with rays not very different in size;  
14-25, forms in which one or two of the rays are markedly reduced.
- 26.—Part of an axial section through the basal part of the sponge-body; magnified 30; phot. Zeiss, planar 20 mm.:  
a, space previously occupied by a large stalk-spicule.
- 27, 28.—Ray-ends of the tetractine acanthophore of the sheaths enclosing the large stalk-spicules in the basal part of the sponge-body; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 29-36.—Rhabd-acanthophores of the sheaths enclosing the large stalk-spicules in the basal part of the sponge-body; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
29, 32-36, tylostyles;  
30, amphistrongyle;  
31, centrotyle style.
- 37, 38.—The two ends of the amphistrongyle acanthophore represented in fig. 30; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 39-44.—Diacetine acanthophores of the sheaths enclosing the large stalk-spicules in the basal part of the sponge-body; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
39, an angularly bent, slender, centrotyle diactine;  
40-44, slightly curved, stout, centrotyle diactines.
- 45.—Strongly curved style acanthophore of the sheaths enclosing the large stalk-spicules in the basal part of the sponge-body; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.

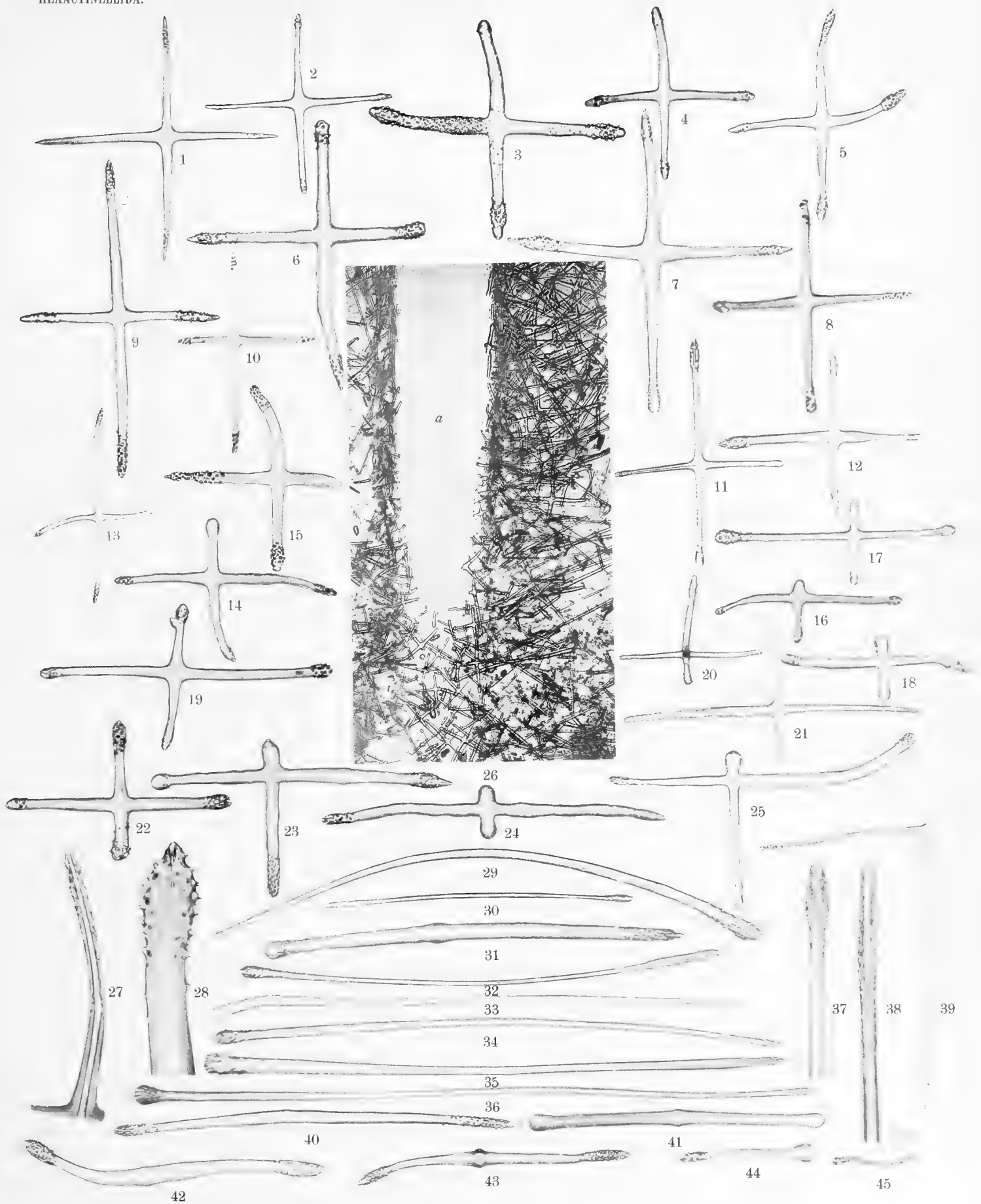


Fig. 1-45 *Hyalonema obtusum* n. sp. var. *gracilis*.

Lendenfeld photographed



PLATE 37.

PLATE 37.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-22.

- 1-5.— Small micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
6-11.— Large micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
12, 13.— A small macramphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
12, focussed higher; 13, focussed lower.  
14-19.— Small macramphidiscs; magnified 500:  
14, 16, 18, 19, phot. Zeiss, H. I. apochr. 1, compens. oc. 6;  
15, 17, phot. Zeiss, apochr. 4, compens. oc. 12.  
20.— A large macramphidisc; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.  
21, 22.— A large macramphidisc; magnified 500:  
21, u. v. phot. Zeiss, q. monochr. 6, q. oc. 10, and focussed higher;  
22, phot. Zeiss, apochr. 4, compens. oc. 12, and focussed lower.

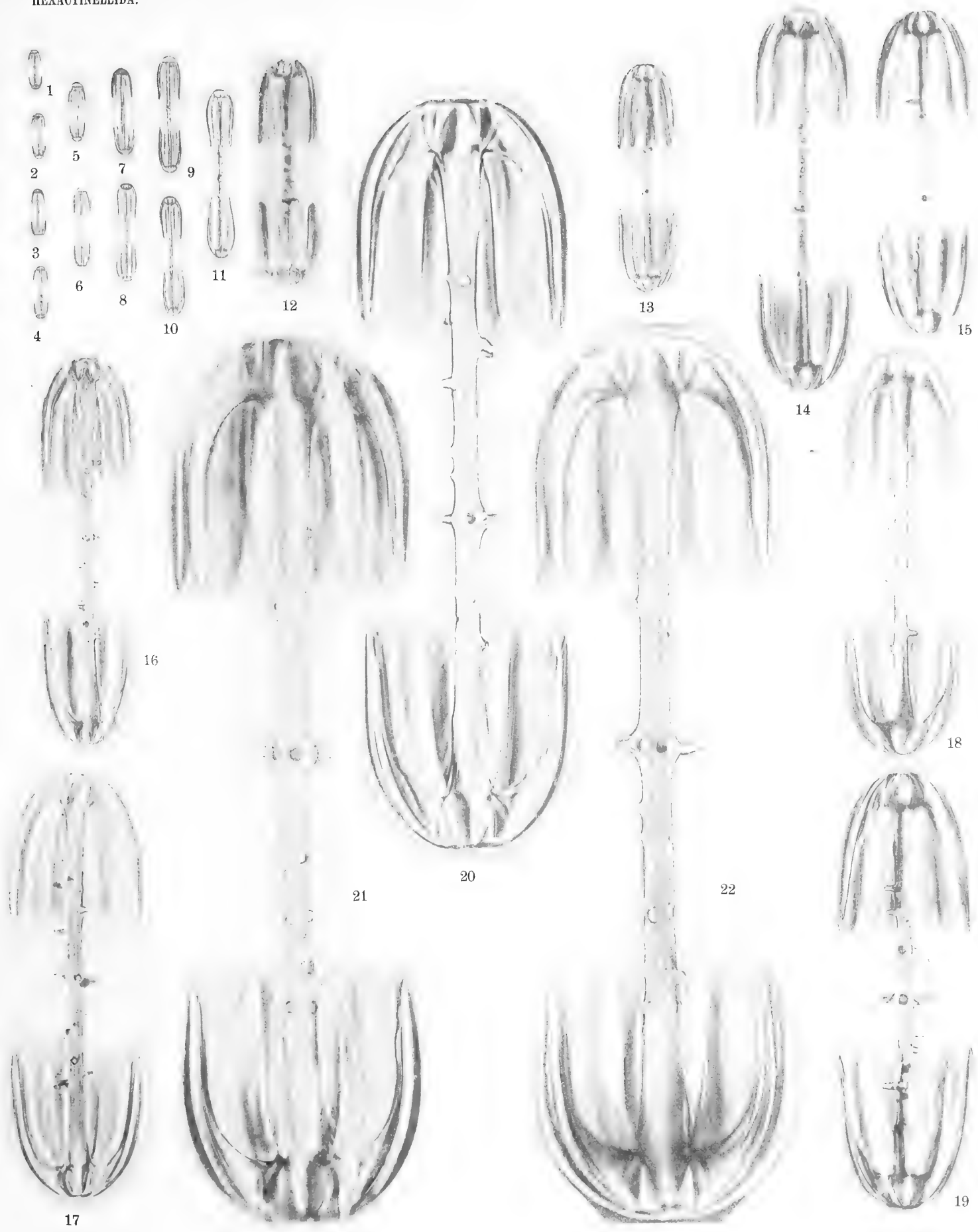


Fig. 1-22 *Hyalonema (Hyalonema) obtusum* n. sp. var. *gracilis*.

Lendenfeld photographed.





PLATE 38.

PLATE 38.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-8.

- 1-3.— A small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, focussed high; 2, focussed lower; 3, focussed still lower.
- 4, 5.— The central part of the shaft of a small macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
4, focussed lower; 5, focussed higher.
- 6.— Part of the tooth-verticil of a small macramphidisc, focussed high to show the two uppermost anchor-teeth: magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 7, 8.— Part of the tooth-verticil of the small macramphidisc, the central part of the shaft of which is shown in figs. 4 and 5; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
7, focussed higher; 8, focussed lower.

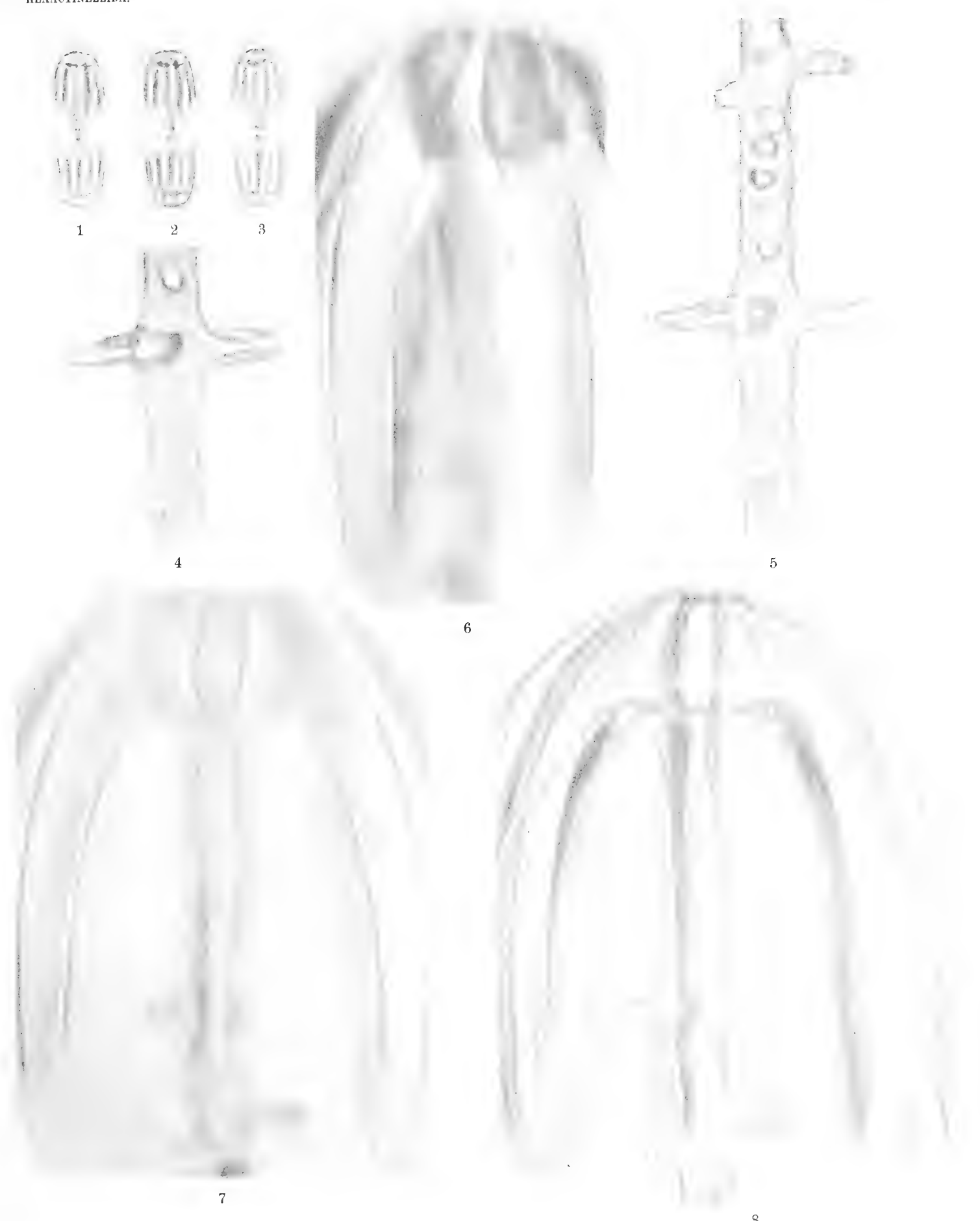


Fig. 1-8 *Hyalonema (Hyalonema) obtusum* n. sp. var. *gracilis*.

Lendenfeld photographed.

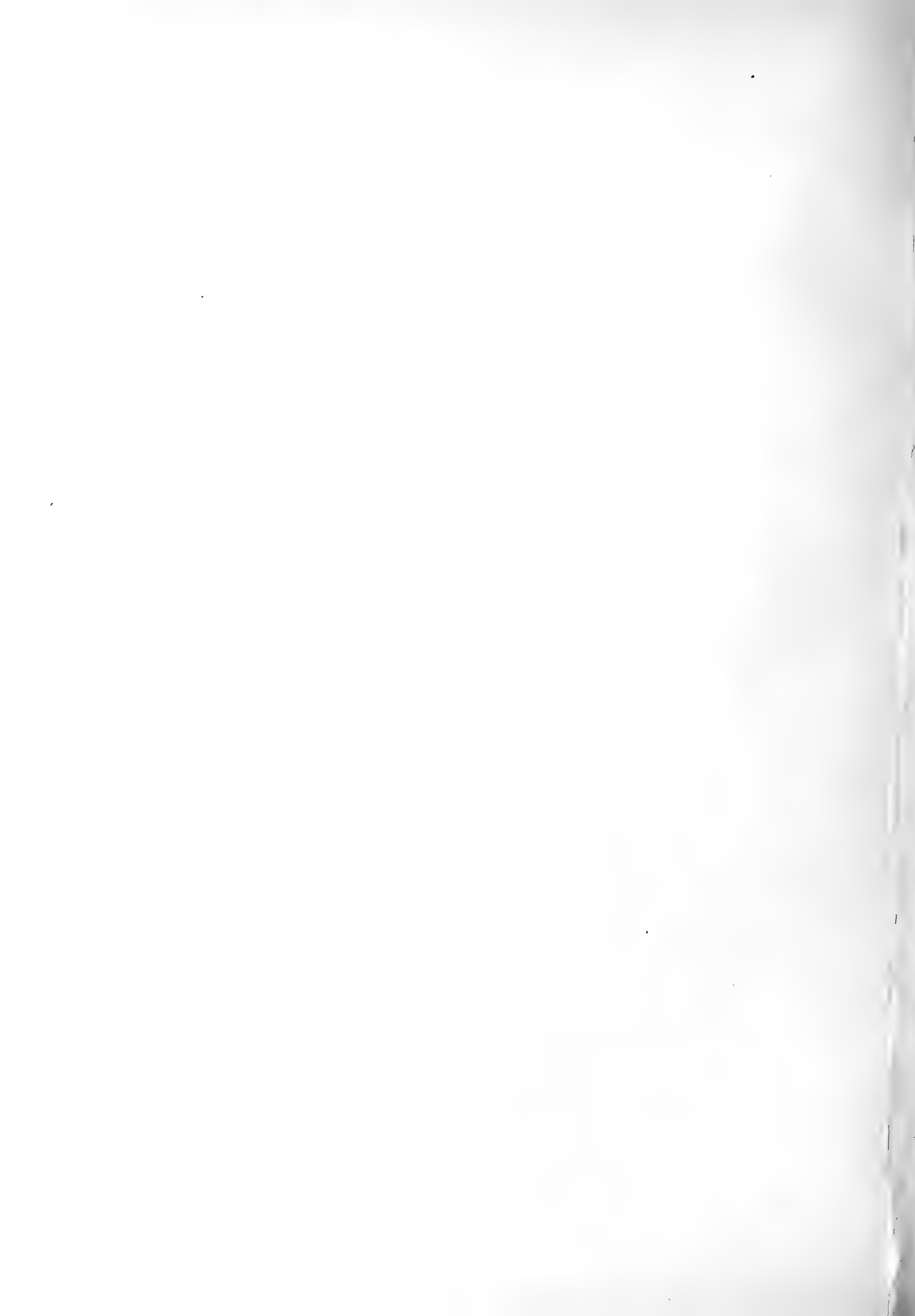


PLATE 39.

PLATE 39.

**Hyalonema (Hyalonema) obtusum gracilis** LENDENFELD.

Figures 1-10.

- 1.— An intermediate acanthophore with large spines, from the basal felt; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 2-4.— Slender-rayed acanthophore with long spines and parts of such, from the basal felt; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 5.— A very young hexactine; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 6.— Part of lean acanthophore from the basal felt; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 7-10.— Pachymicrohexactines from the basal part of the sponge; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:
  - 7, a small one with stout, nearly straight rays;
  - 8, a large one with more slender rays;
  - 9, 10, a large one with very stout rays;
  - 9, focussed higher; 10, focussed lower.

**Hyalonema (Hyalonema) obtusum robusta** LENDENFELD.

Figures 11-41.

- 11, 12.— Parts of intermediate acanthophores with large spines, from the basal felt; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 11, a central part of a triactine;
  - 12, the tip of a ray.
- 13-16.— Parts of slender-rayed acanthophores with large spines, from the basal felt; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 13-15, tips of rays;
  - 16, the central part of a triactine.
- 17-21.— Stout-rayed tetractine and tetractine-derivate acanthophores from the cement surrounding the upper parts of the large stalk-spicule imbedded in the sponge-body; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - 17, an angularly bent diactine;
  - 18-20, tetractines;
  - 21, a triactine.
- 22-24.— Parts of the felt, composed chiefly of the slender-rayed acanthophores with long spines, in the basal part of the sponge:
  - 22, 23, magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6;
  - 24, magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 25, 26.— Uncinate amphioxes; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 27-29.— Parts of the uncinat amphiox represented in fig. 26; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 27, the end from which the spines diverge;
  - 28, the central part;
  - 29, the end towards which the spines are inclined.
- 30.— Part of an uncinat amphiox; magnified 2000; phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 31, 32.— Two small, fairly regular hypodermal pentactines; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4:
  - 31, a side-view;
  - 32, an apical view.
- 33.— View of the specimen; reduced 1:0.85; phot. Zeiss, anastig. 480/412 mm.
- 34-38.— Rhabd-acanthophores; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 39.— An angularly bent diactine; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 40, 41.— Larger hypodermal pentactines; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4:
  - 40, side-view of a fairly regular one;
  - 41, apical view of an irregular one with one of the lateral rays reduced.

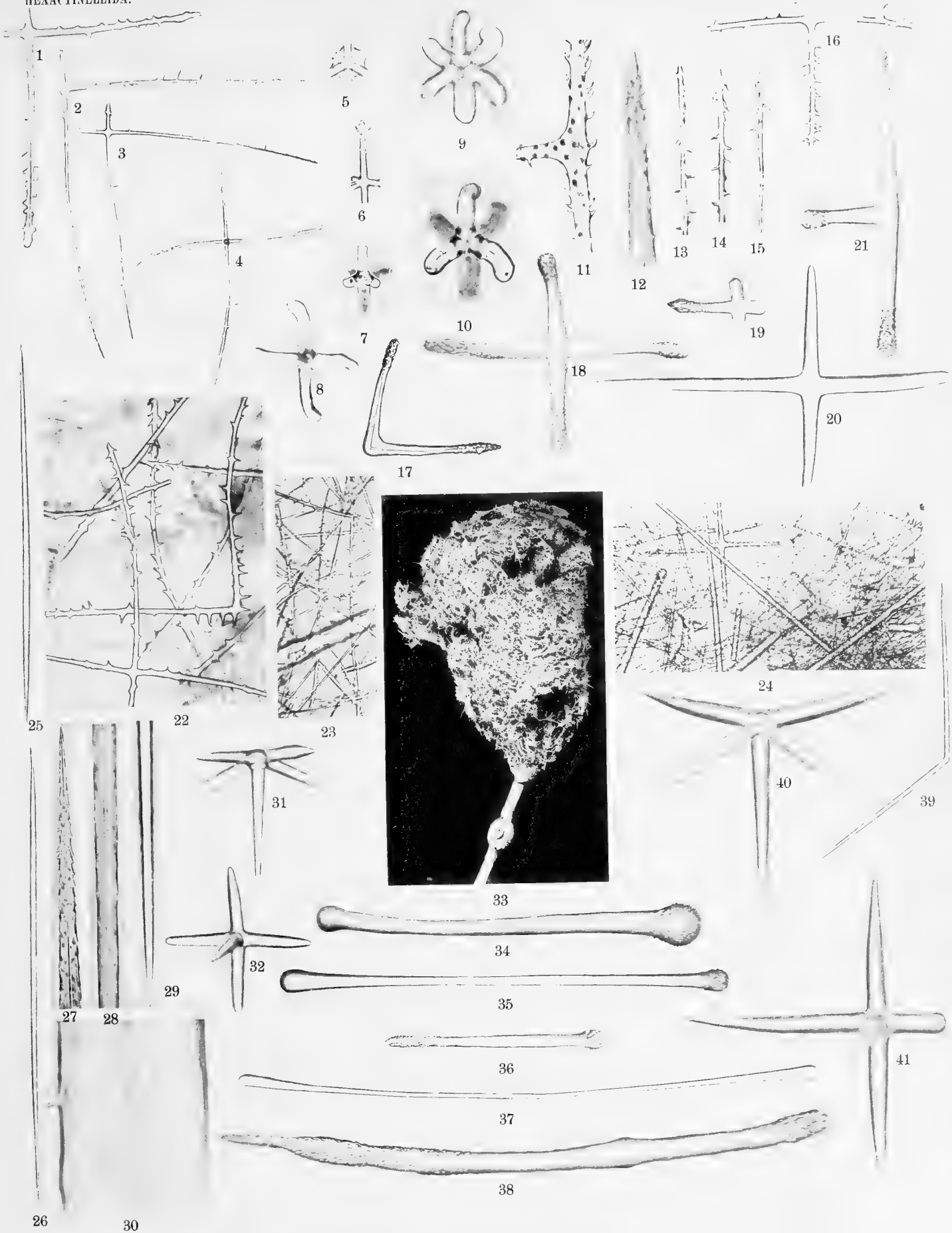


Fig. 1-10 *Hyalonema (Hyalonema) obtusum n. sp. var. gracilis*. Fig. 11-41 *Hyalonema (Hyalonema) obtusum n. sp. var. robusta*.

Lendenfeld photographed.





PLATE 40.

PLATE 40.

*Hyalonema (Hyalonema) obtusum robusta* LENDENFELD.

Figures 1-22.

- 1, 2.— Large macramphidises; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 3-5.— Pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:
- 3, a gastral hexactine pinule;
  - 4, a dermal pentactine pinule with reduced lateral rays;
  - 5, a dermal pentactine pinule.
- 6-15.— Microhexactines and microhexactine-derivates; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:
- 6, 7, regular microhexactines;
  - 8, a pentactine microhexactine-derivate;
  - 9, a microhexactine with two opposite rays much longer than the others;
  - 10, a diactine microhexactine-derivate, the fully developed rays of which are not opposite;
  - 11, a triactine microhexactine-derivate;
  - 12, 13, diactine (centrotyle), microhexactine-derivates, the fully developed rays of which are opposite;
  - 14, 15, monactine (tylostyle or tyle) microhexactine-derivates.
- 16, 17.— Small micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 18.— A young micramphidise; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 19.— Part of an irregular macramphidise; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 20.— Group of microscleres from a centrifuge spicule-preparation; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:
- a, small micramphidises; b, microhexactine; c, microhexactine-derivate with only two opposite, fully developed rays.
- 21, 22.— Parts of the upper end of a large stalk-spicule; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.

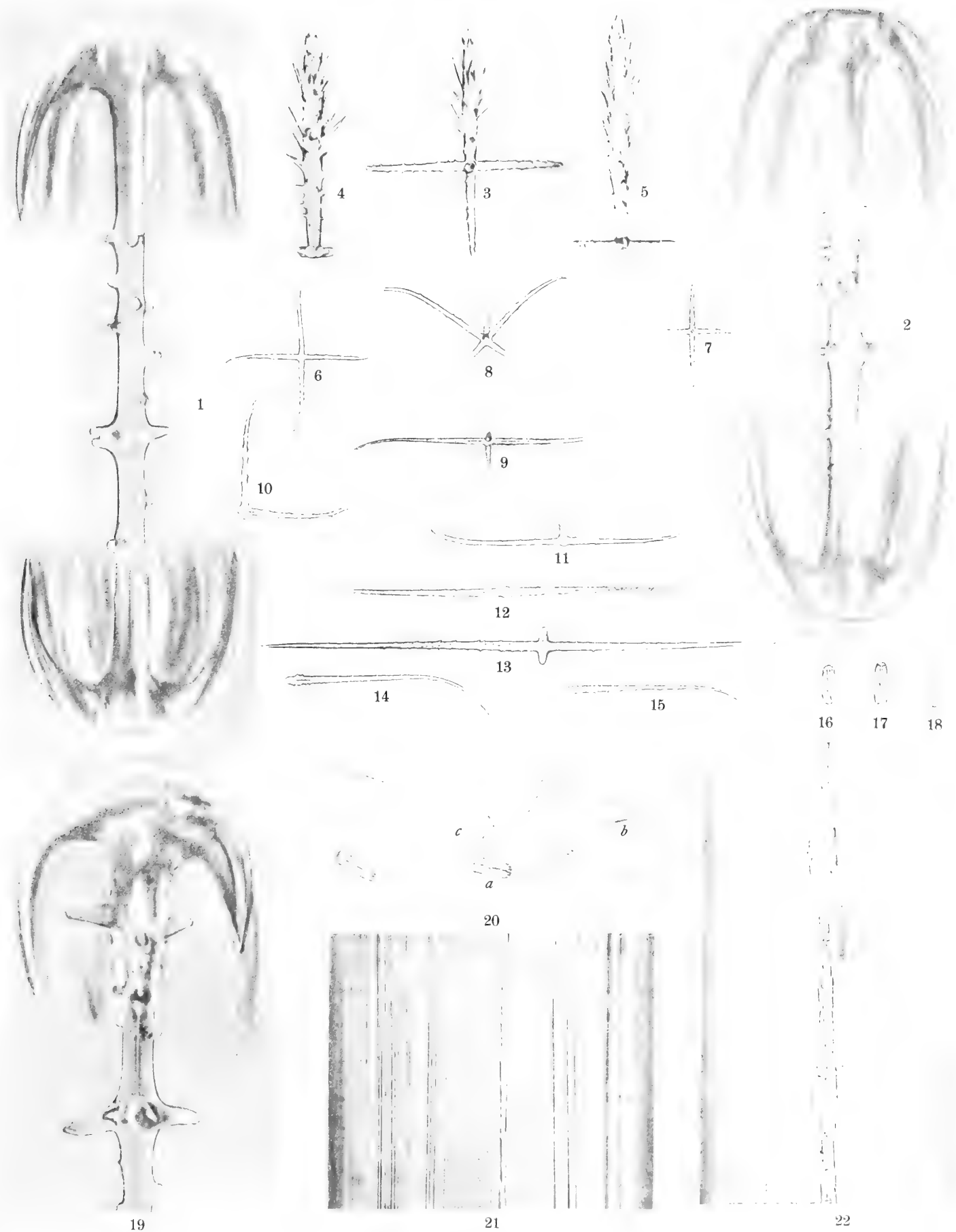


Fig. 1-22 *Hyalonema (Hyalonema) obtusum* n. sp. var. *robusta*.

Lendenfeld photographed.



PLATE 41.

PLATE 41.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

Fig. 1 — form B, Station 4651.  
Figs. 2-11 — form A, Station 4656.  
Fig. 12 — form D, Station 3684 (A. A. 17).  
Figs. 13, 14 — form C, Station 4740.

- 1.— Side-view of the specimen of form B; natural size; phot. Zeiss, anastig. 480/412 mm.
- 2.— Side-view of the specimen of form A; reduced 1:0.83; phot. Zeiss, anastig. 480/412 mm.
- 3-6.— Oblique view of hypodermal pentactines of form A; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
3, 4, 6, larger ones;  
5, a small one.
- 7.— Side-view of a small hypodermal pentactine of form A; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.
- 8.— Apical view of the lateral rays of a large hypodermal pentactine of form A; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.
- 9.— The end-part of a lateral ray of a large hypodermal pentactine of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 10, 11.— Smaller hypodermal pentactines of form A; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
10, apical view of the lateral rays of one;  
11, side-view of another
- 12.— The specimen of form D seen from above; natural size; phot. Zeiss, anastig. 480/412 mm.
- 13, 14.— A specimen of form C; reduced 1:0.83; phot. Zeiss, anastig. 480/412 mm.:  
13, seen from below;  
14, seen from above.



Fig. 1-14 *Hyalonema agassizi* n. sp.  
1 form B; 2-11 form A; 12 form D; 13, 14 form C.

Lendenfeld photographed.





PLATE 42.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

Figs. 1-13, 25-28, 35, 36, 38-41, 49, 51, 52 — form A, Station 4656.  
 Figs. 14, 15, 29, 37, 47, 48, 50, 53, 54 — form B, Station 4651.  
 Figs. 16-23, 43, 44, 55, 56, 58 — form C, Station 4740.  
 Figs. 24, 30-34, 42, 45, 46, 57, 59 — form D, Station 3684 (A. A. 17).

- 1-8.— Side-views of gastral pinules from the surface of the gastral cone of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 1, normal hexactine pinule with long proximal ray;  
 2, normal hexactine pinule with short proximal ray;  
 3-7, normal pentactine pinules;  
 8, abnormal pentactine pinule.
- 9.— Minute pentactine from the surface of the gastral cone of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 10-12.— Apical view of the lateral rays of gastral pinules from the surface of the gastral cone of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 13.— A diactine gastral pinule from the surface of the gastral cone of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 14-19.— Side-views of gastral pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 14, 15, from the surface of the gastral cone of form B;  
 16, 17, from the surface of the gastral cone of form C;  
 18, 19, from the surface of one of the radial walls separating the canalicular diverticula of the gastral cavity of form C.
- 20-23.— Side-views of dermal pinules from the outer surface of form C; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 24.— Side-view of a gastral pinule from the surface of the gastral cone of form D; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 25-34.— Side-views of dermal pinules from the outer surface; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 25-28, of form A;  
 29, of form B;  
 30-34, of form D.
- 35, 36.— Apical views of the lateral rays of two dermal pinules from the outer surface of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 37.— Surface-view of the dermal membrane on the basal part of form B; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
 a, hypodermal pentactines; b, dermal pinules.
- 38-41.— Modified, slender-rayed, long-spined pinules of the basal part of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 38, 39, hexactine forms;  
 40, 41, pentactine forms.
- 42.— Group of spicules from a spicule-preparation of the basal part of form D; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 a, microhexactines; b, dermal pinules.
- 43-45.— Modified, slender-rayed, long-spined pinules from the basal part of the sponge; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 43, 44 of form C;  
 45, of form D.
- 46.— Spined, slender-rayed hexactine acanthophore of form D; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 47, 48.— Modified, slender-rayed, long-spined pinules from the basal part of form B; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 49.— A slender-rayed, long-spined tetractine acanthophore of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 50.— Minute pentactine of the basal part of form B; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 51-59.— Slender-rayed, long-spined tetractine and pentactine acanthophores; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
 51, 52, tetractine ones of form A;  
 53, 54, tetractine ones of form B;  
 55, 56, tetractine ones of form C;  
 57, a pentactine one of form D;  
 58, a pentactine one of form C;  
 59, a tetractine one of form D.

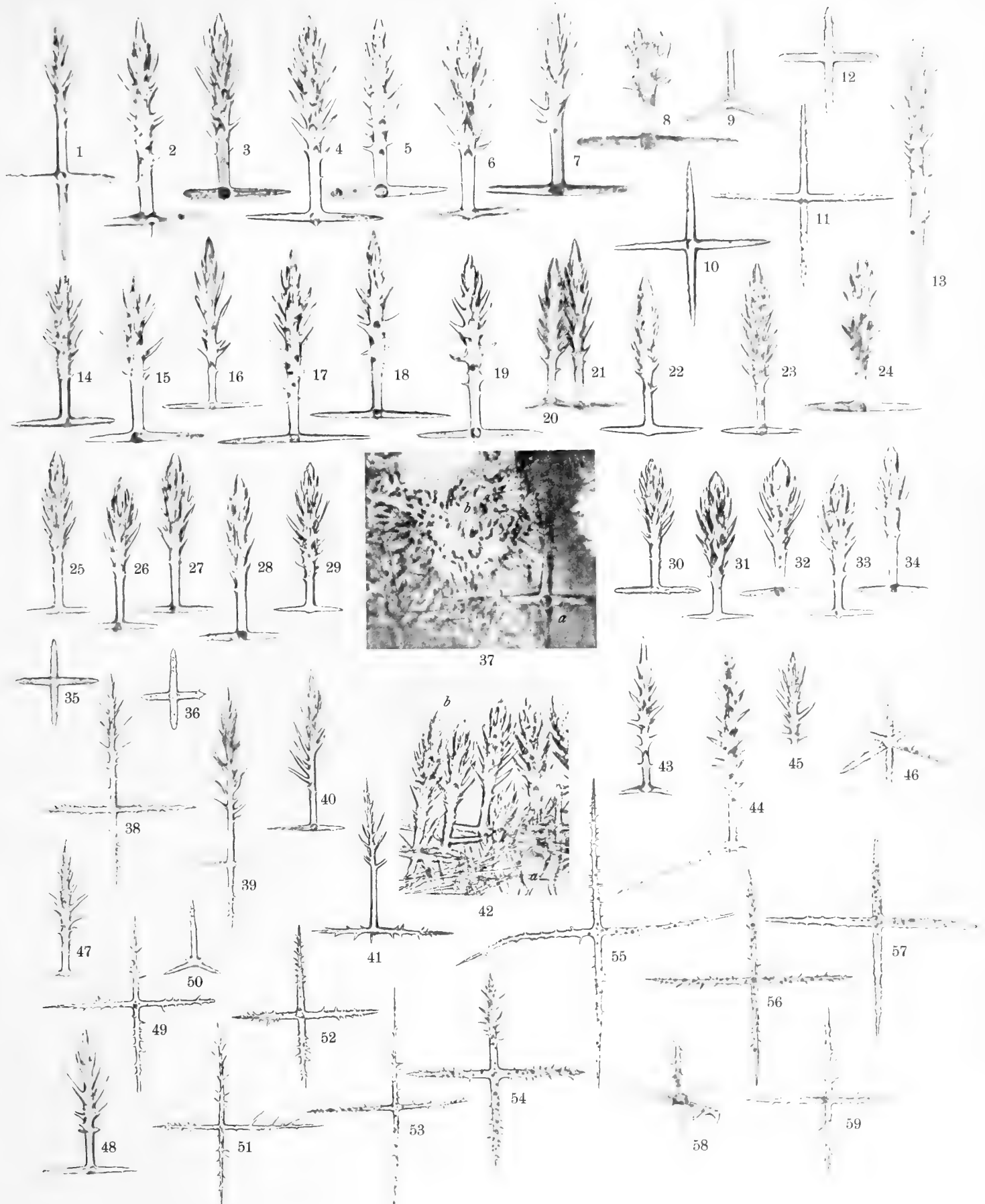


Fig. 1-59 *Hyalonema (Hyalonema) agassizi* n. sp.  
 1-13, 25-28, 35, 36, 38-41, 49, 51, 52 form A; 14, 15, 29, 37, 47, 48, 50, 53, 54 form B; 16-23, 43, 44, 55, 56, 58 form C;  
 24, 30-34, 42, 45, 46, 57, 59 form D.

Lendenfeld photographed.



PLATE 43.

PLATE 43.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

Figures 1-7 — form A, Station 4656.

- 1.— The upper part of a stalk-spicule; reduced 1:0.5; phot. Zeiss, anastig. 480/412 mm.:
  - a, the portion represented in fig. 2; b, the portion represented in fig. 5; c, the portion represented in figs. 6 and 7; d, the portion represented in figs. 3 and 4.
- 2-7.— Parts of the stalk-spicule represented in fig. 1; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - 2, 1 cm. from the upper end (at a in fig. 1) focussed on the axial thread;
  - 3, 4, 41 cm. from the upper end (at d in fig. 1);
    - 3, focussed lower, on the axial thread; 4, focussed higher, on the upper surface;
  - 5, 20 cm. from the upper end (at b in fig. 1) focussed on the axial thread;
  - 6, 7, 29 cm. from the upper end (at c in fig. 1);
    - 6, focussed lower, on the axial thread; 7, focussed higher, on the upper surface.



Fig. 1-7 (*Hyalonema*) *agassizi* n. sp. form A.

Lendenfeld photographed.





PLATE 44.

PLATE 44.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

Figs. 1-20, 22-24, 30 — form A, Station 4656.  
Figs. 21, 25, 27 — form B, Station 4651.  
Fig. 26 — form C, Station 4740.  
Figs. 28, 29 — form D, Station 3684 (A. A. 17).

- 1-5.— Marginal diactine pinules of form A:  
1, 2, two smaller ones; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6;  
3, 4, the distal parts of two larger ones; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6;  
5, a larger one; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 6-10.— Parts of the stoutest portions of uncinat amphioxes of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
6, part of an uncinat focussed lower; 7, the same focussed higher; 8, part of another uncinat focussed lower; 9, the same focussed higher; 10, part of a third uncinat.
- 11, 12.— The distal end-parts of two uncينات of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 13, 14.— Two uncينات of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 15.— A microhexactine with fairly straight rays of form A; magnified 500; u. v. phot. Zeiss, q. monochr. 6, q. oc. 7.
- 16.— The central part of a microhexactine of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 17.— Group of spicules from a centrifuge spicule-preparation of form A; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
a, uncinat amphioxes; b, regular microhexactines; c, irregular microhexactine with two rays much longer than the others; d, micramphidises.
- 18, 19.— Part (three rays and centre) of a regular microhexactine of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
18, focussed higher; 19, focussed lower.
- 20.— A microhexactine with nearly straight rays of form A; magnified 500; u. v. phot. Zeiss, q. monochr. 6, q. oc. 7.
- 21-23.— Microhexactines with more or less curved rays; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:  
21, of form B;  
22, 23, of form A.
- 24.— Microhexactine-derivate diactine of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 25-28.— Microhexactines; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:  
25, 27, of form B;  
26, of form C;  
28, of form D.
- 29.— Part of a microhexactine of form D; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 30.— Part (one ray and centre) of a microhexactine of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.

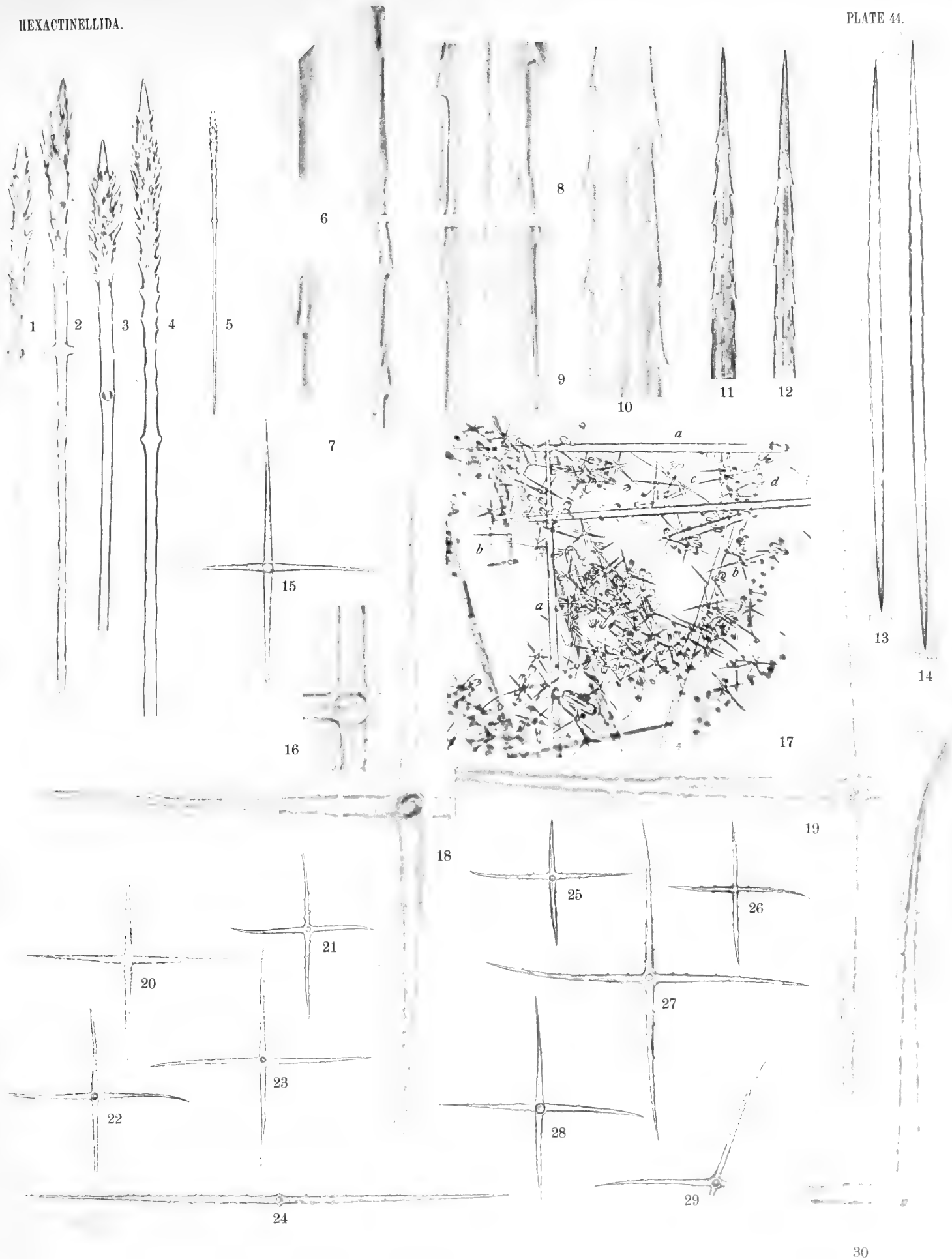


Fig. 1-30 *Hyalonema (Hyalonema) agassizi* n. sp.  
 1-20, 22-24, 30 form A; 21, 25, 27 form B; 26 form C; 28, 29 form D.

Lendenfeld photographed.



PLATE 45.

PLATE 45.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

Figs. 1-38, 40-49 — form A, Station 4656.

Figs. 39, 62-64 — form D, Station 3684 (A. A. 17).

Figs. 50-53 — form B, Station 4651.

Figs. 54-61 — form C, Station 4740.

- 1-4.— Stout-rayed tetractine acanthophores of the spicule-cement in the basal part of form A; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 5.— Part of a rhabd acanthophore of the spicule-cement of the basal part of form A; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 6-13.— Hexactine megascleres of form A; magnified 50; phot. Zeiss,achr. aa, compens. oc. 6:  
6-8, 11, small ones;  
9, 10, large ones;  
12, 13, medium-sized ones.
- 14-17.— Stout-rayed acanthophores of the cement in the basal part of form A; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
14, 15, tetractines with one ray strongly reduced;  
16, 17, diactine tetractine-derivates.
- 18.— Section vertical to the surface through a superficial part of form A; magnified 20; phot. Zeiss, planar 20 mm.:  
a, dermal membrane with pinule-fur.
- 19-22.— Rhabds of the choanosome of form A; magnified 50; phot. Zeiss,achr. aa, compens. oc. 6:  
19, 21, 22, amphioxes;  
20, a tylostyle.
- 23.— Section vertical to the surface through a superficial part of form A; magenta; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, dermal pinule-fur.
- 24, 25.— Stout-rayed tetractines, with rays strongly reduced in length, of the spicule-cement in the basal part of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 26-34.— Spheres of the basal part of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 35, 36.— Stout-rayed tetractine acanthophores of the spicule-cement of the basal part of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
35, a young one;  
36, an adult one.
- 37.— A stout-rayed triactine acanthophore from the spicule-cement of the basal part of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 38.— A stout-rayed pentaactine acanthophore with rays reduced in length, from the spicule-cement in the basal part of form A; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 39.— A stout-rayed tetractine acanthophore from the spicule-cement in the basal part of form D; magnified 30; phot. Zeiss, apochr. 4, compens. oc. 6.
- 40-64.— Amphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:  
40-45, small micramphidises of form A;  
46-49, large micramphidises of form A;  
50-52, small micramphidises of form B;  
53, small macramphidise of form B;  
54-58, small micramphidises of form C;  
59-61, large micramphidises of form C;  
62, small micramphidise of form D;  
63, 64, large micramphidises of form D.

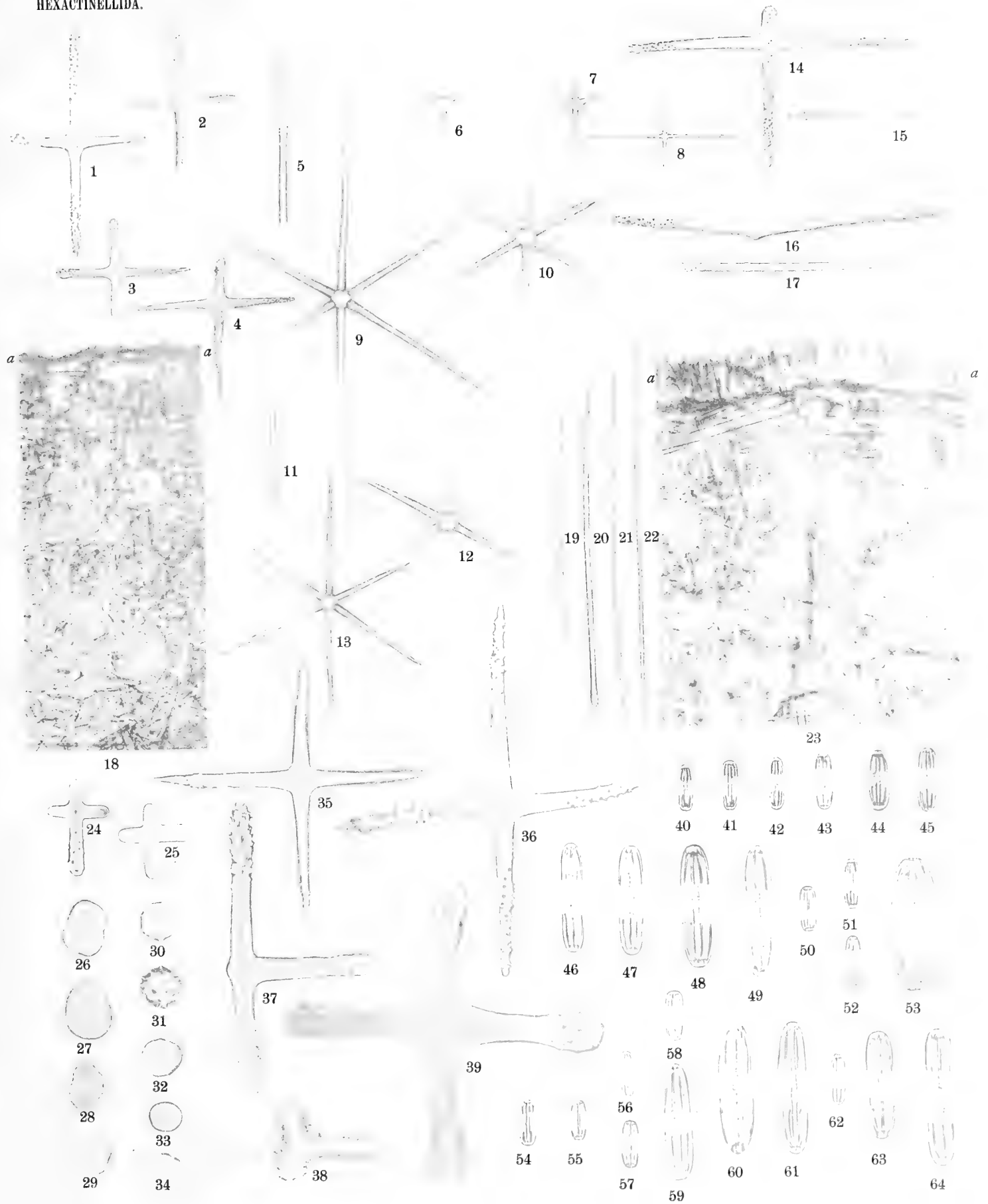


Fig. 1-64 *Hyalonema (Hyalonema) agassizi* n. sp.  
 1-38, 40-49 form A; 39, 62-64 form D; 50-53 form B; 54-61 form C.

Lendenfeld photographed.





PLATE 46.

PLATE 46.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

- Figs. 1-5, 9, 12, 13 — form A, Station 4656.  
Figs. 6-8, 16 — form D, Station 3684 (A. A. 17).  
Figs. 10, 11 — form C, Station 4740.  
Figs. 14, 15 — form B, Station 4651.

1-16.— Macramphidises; magnified 500:

- 1, 3-11, 14-16, phot. Zeiss, apochr. 4, compens. oc. 6;  
2, 12, 13, u. v. phot. Zeiss, q. monochr. 6, q. oc. 7:  
1, an adult normal small macramphidise of form A;  
2, an adult normal large macramphidise of form A;  
3, 4, an adult normal large macramphidise of form A;  
3, focussed high; 4, focussed lower;  
5, an adult normal large macramphidise of form A;  
6, an adult normal large macramphidise of form D;  
7, an adult abnormal spiny large macramphidise of form D;  
8, a young normal large macramphidise of form D;  
9, a young normal large macramphidise of form A;  
10, 11, adult normal large macramphidises of form C;  
12, 13, adult normal large macramphidises of form A;  
14, 15, adult normal large macramphidises of form B;  
16, an adult normal large macramphidise of form D.

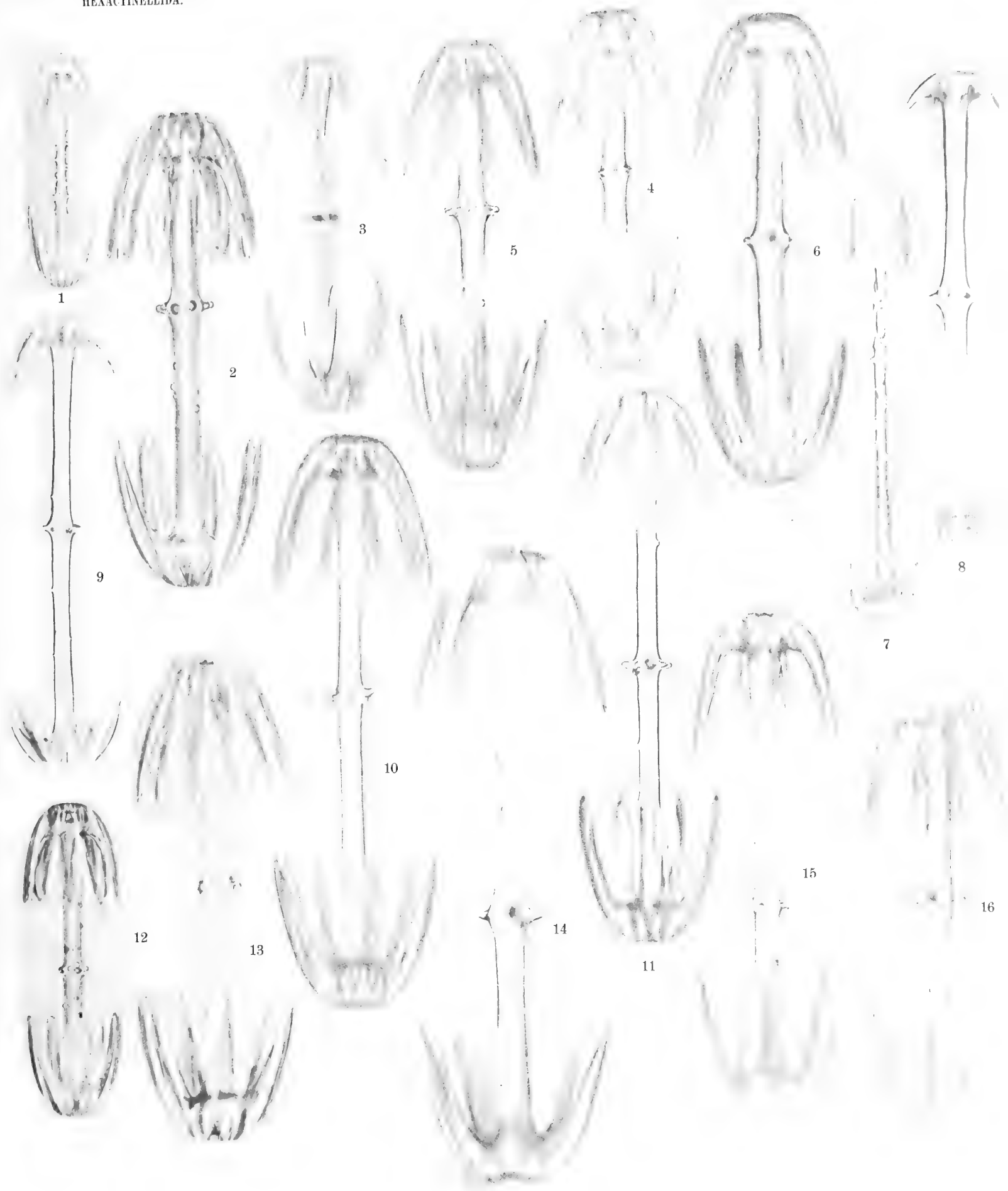


Fig. 1-16 *Hyalonema (Hyalonema) agassizi* n. sp.  
 1-5, 9, 12, 13 form A; 6-8, 16 form D; 10, 11 form C; 14, 15 form B.

Lendenfeld photographed.



PLATE 47.

PLATE 47.

**Hyalonema (Hyalonema) agassizi** LENDENFELD.

Figures 1-13—form A, Station 4656.

- 1, 2.— Side-view of an anchor of a large macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, focussed lower; 2, focussed high.
- 3.— Group of three small micramphidises; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 4.— Side-view of part of a small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 5, 6.— Apical view of a large macramphidisc; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:  
5, focussed lower; 6, focussed higher.
- 7.— Side-view of a small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 8, 9.— Side-view of a small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
8, focussed higher; 9, focussed lower.
- 10.— The central part of the shaft of a large macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 11-13.— Side-view of a larger macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
11, focussed high; 12, focussed low; 13, focussed intermediate, on the axis of the shaft.

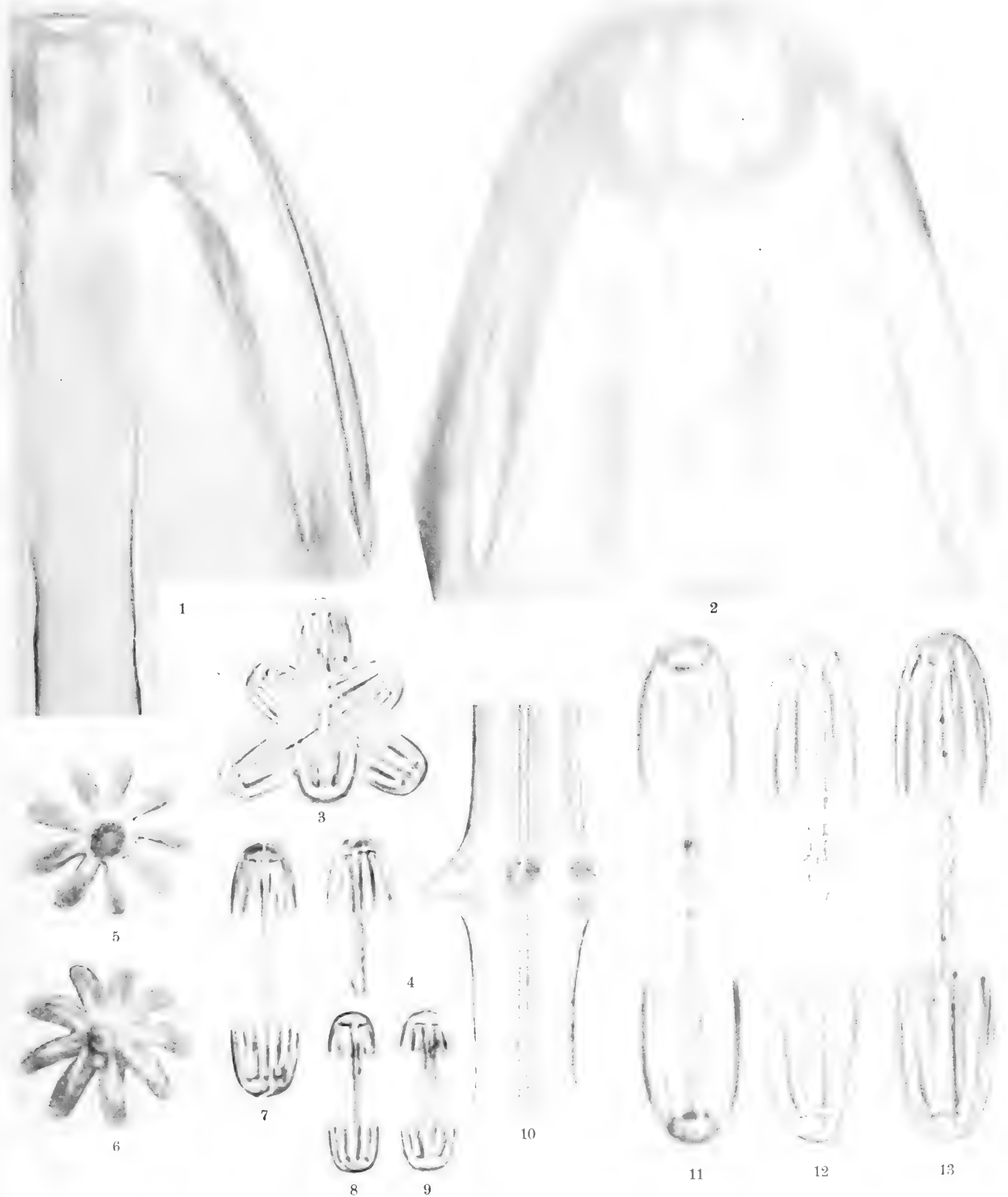


Fig. 1-13 *Hyalonema (Hyalonema) agassizi* n. sp.  
form A.

Lendenfeld photographed.





PLATE 48.

PLATE 48.

**Hyalonema (Prionema) spinosum** LENDENFELD.

Figures 1-31.

- 1-10.— Acanthophores; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
1-5, tetractines;  
6, a triactine;  
7-9, diactines;  
10, a monactine.
- 11, 12.— Views of the two specimens; reduced 1:0.9; phot. Zeiss, anastig. 480/412 mm.:  
11, side-view of the smaller specimen;  
12, the larger specimen seen from above.
- 13.— Part of an axial section of the smaller specimen; magenta; magnified 10; phot. Zeiss, planar 50 mm.
- 14-16.— The central part of the shaft of a large macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
14, focussed high; 15, focussed low; 16, focussed intermediate.
- 17-22.— Side-views of dermal pinules; magnified 300; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
17-19, 21, 22, pentactine pinules;  
20, a hexactine pinule.
- 23.— Part of the gastral pinule-fur in an axial section; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 24, 25.— Gastral pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
24, apical view of the lateral rays of one;  
25, side-view of another.
- 26, 27.— Part of the distal ray of a gastral pinule; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
26, focussed lower; 27, focussed higher.
- 28-31.— Small micramphidiscs; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
28, a larger one with slightly curved shaft;  
29, a smaller one with broad anchors;  
30, 31, a smaller one with narrow anchors;  
30, focussed higher; 31, focussed lower.

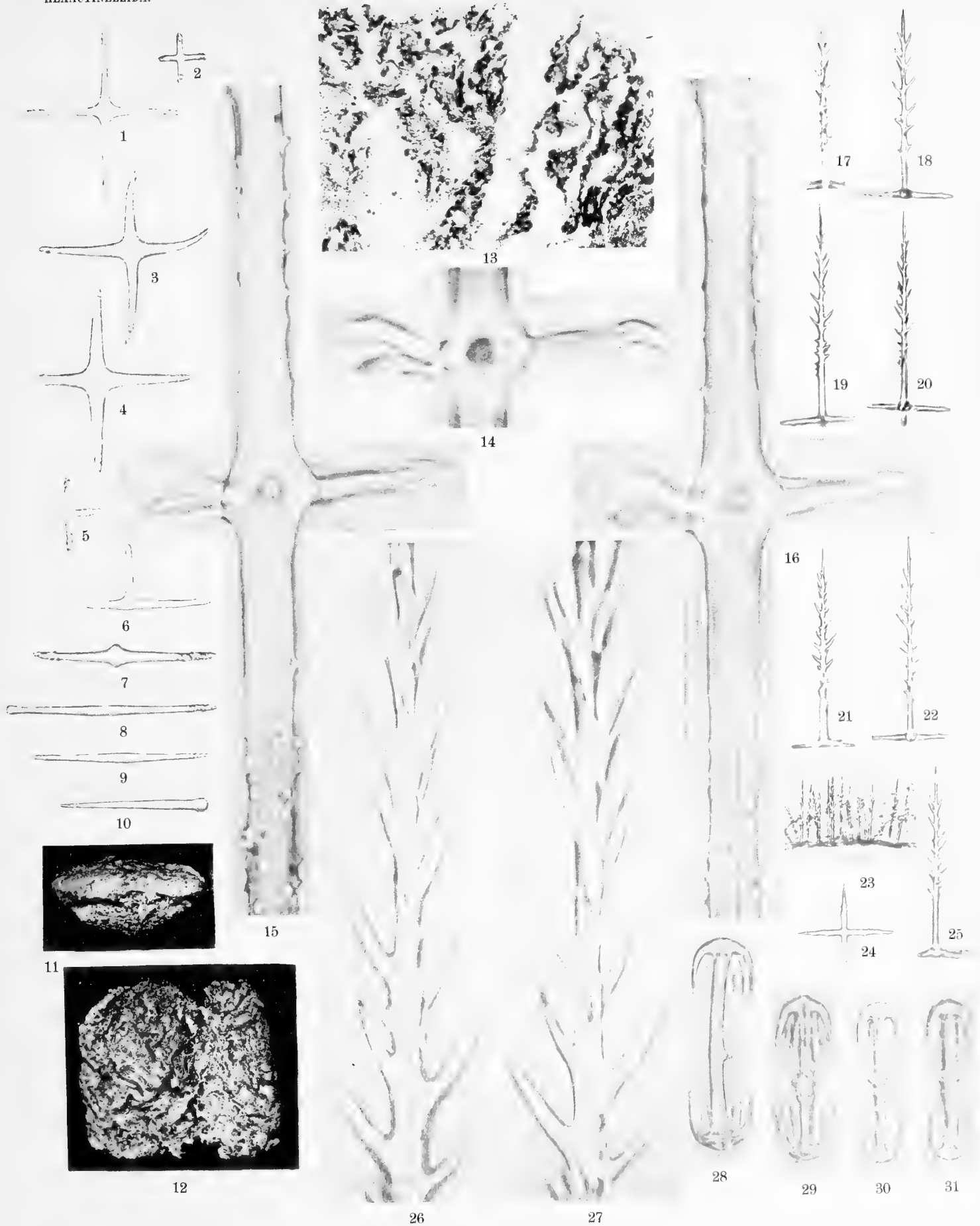


Fig. 1-31 *Hyalonema (Prionema) spinosum* n. sp.

Lendenfeld photographed.



PLATE 49.

PLATE 49.

**Hyalonema (Prionema) spinosum** LENDENFELD.

Figures 1-23.

- 1-11.— Amphidises; magnified 500:  
1-4, small micramphidises; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
5, small macramphidises; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
6, small macramphidise; u. v. phot. Zeiss, q. monochr. 6, q. oc. 7;  
7, 8, normal large macramphidise; phot. Zeiss, H. I. apochr. 2, oc. 4;  
7, focussed high; 8, focussed low;  
9, normal large macramphidise; u. v. phot. Zeiss, q. monochr. 6, q. oc. 7;  
10, abnormal large macramphidise; phot. Zeiss, apochr. 4, compens. oc. 6;  
11, normal large macramphidise; phot. Zeiss, apochr. 4, compens. oc. 6.
- 12-14.— Side-views of hypodermal pentaactines; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.
- 15-18.— Microhexactines and parts of such; magnified 500:  
15, 18, u. v. phot. Zeiss, q. monochr. 6, q. oc. 7;  
16, 17, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 19.— A hexactine megasclere; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.
- 20-22.— Part of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
20, focussed high; 21, focussed intermediate; 22, focussed low.
- 23.— Part of a ray of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.



Fig. 1—23 *Hyalonema (Prionema) spinosum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 50.

PLATE 50.

**Hyalonema (Prionema) spinosum** LENDENFELD.

Figures 1-5.

- 1-5.— Anchor-teeth of large macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, slightly oblique view of an anchor-tooth focussed high; 2, the same focussed lower;  
3, the uppermost two teeth of an anchor, nearly *en face*;  
4, an anchor-tooth *en profile*, focussed lower; 5, the same, focussed higher.

**Hyalonema (Phialonema) pateriferum** WILSON.

Figures 6-15 — form E.

- 6-8.— Ordinary pentaactine pinules; magnified 300; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
9, 10.— Parts of microhexactines; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
9, the central part of a microhexactine;  
10, the central part and one ray of a microhexactine.  
11-14.— Micramphidises; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
11, a small micramphidisc with short anchors;  
12, 13, a small micramphidisc with longer anchors;  
12, focussed lower; 13, focussed higher;  
14, a large micramphidisc.  
15.— The central part of the shaft of a large macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.



Fig. 1—5 *Hyalonema (Prionema) spinosum* n. sp.  
 Fig. 6—15 *Hyalonema (Phialonema) pateriferum* Wilson form E.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 51

PLATE 51.

**Hyalonema (Phialonema) pateriferum** WILSON.

Figures 1-28.

- 1.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm.
- 2.— Groups of large macramphidises from a spicule-preparation; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 3-6.— Small micramphidises; magnified 500:
  - 3, 5, phot. Zeiss, H. I. apochr. 2, compens. oc. 4;
  - 4, 6, phot. Zeiss, apochr. 4, compens. oc. 12.
- 7-12.— Large micramphidises; magnified 500:
  - 7, 8, 10-12, phot. Zeiss, H. I. apochr. 2, compens. oc. 4;
  - 9, u. v. phot. Zeiss, q. monochr. 6, q. oc. 7.
- 13, 14.— A large micramphidise; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:
  - 13, focussed higher; 14, focussed lower.
- 15.— Side-view of a small macramphidise, with regular anchors; magnified 500; u. v. phot. Zeiss, q. monochr. 6, q. oc. 7.
- 16.— Side-view of a large macramphidise with spirally twisted anchors; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 17, 18.— Side-views of large macramphidises; with regular anchors; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 19, 20.— Side-views of a large macramphidise with regular anchors; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:
  - 19, focussed lower; 20, focussed higher.
- 21, 22.— Apical views of anchors of large macramphidises; magnified 500:
  - 21, u. v. phot. Zeiss, q. monochr. 6, q. oc. 7;
  - 22, phot. Zeiss, apochr. 4, compens. oc. 12.
- 23-28.— Microhexactines; magnified 500:
  - 23, 24, 26, 28, ordinary microhexactines with strongly and regularly curved rays; phot. Zeiss, apochr. 4, compens. oc. 12;
  - 25, an exceptionally large microhexactine with irregularly curved rays; u. v. phot. Zeiss, q. monochr. 6, q. oc. 7;
  - 27, a microhexactine with rays only slightly curved; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.

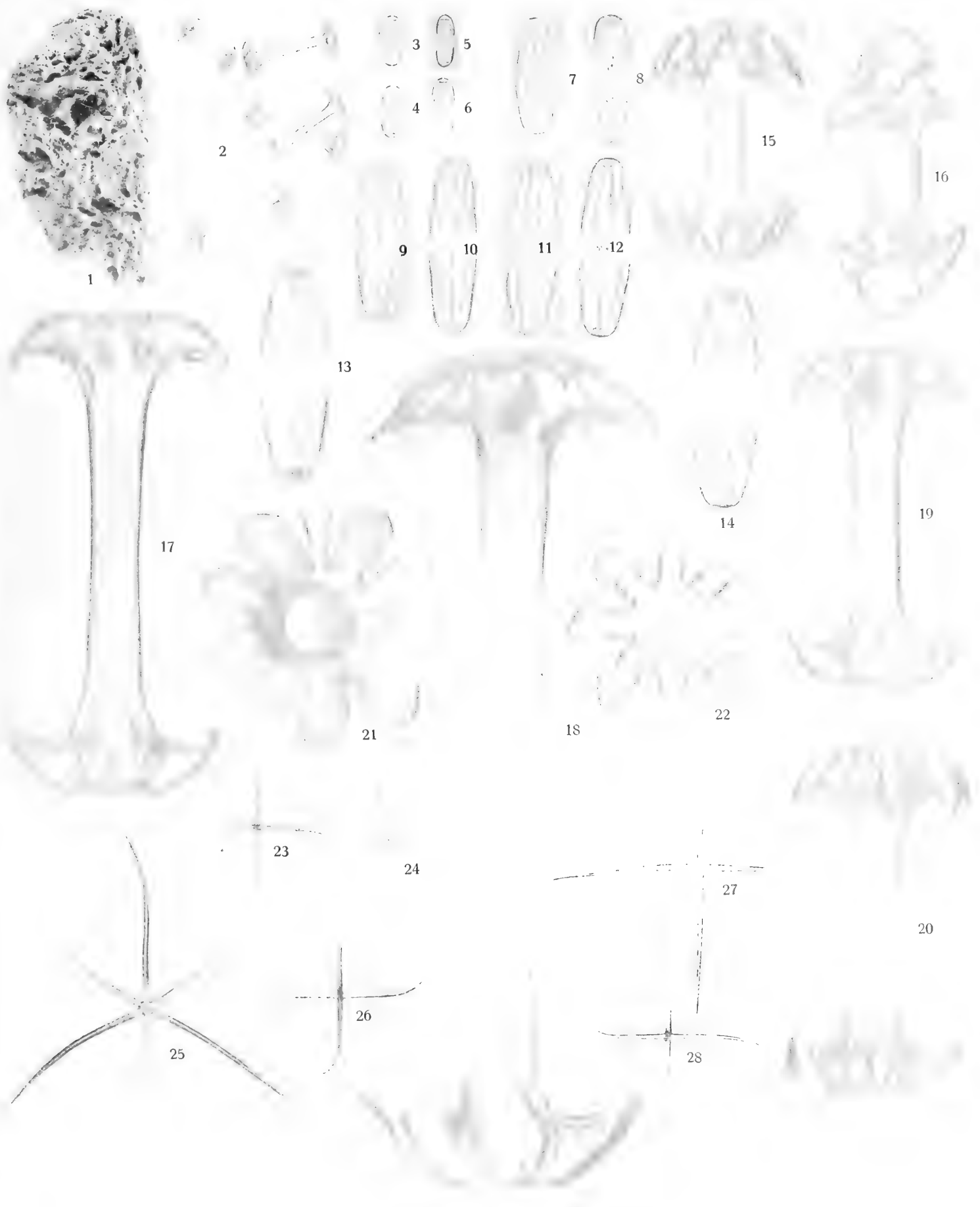


Fig. 1-28 *Hyalonema (Phialonema) pateriferum* Wilson, form E.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 52.

PLATE 52.

**Hyalonema (Phialonema) pateriferum** WILSON.

Figs. 1-14, 16, 21-29 — form D.  
Figs. 15, 17-19 — form F.  
Fig. 20 — form C.

- 1, 2.— Microhexactines of form D; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.  
3-10.— Macramphidises of form D; magnified 500:  
3-9, phot. Zeiss, apochr. 4, compens. oc. 12;  
10, phot. Zeiss, apochr. 4, compens. oc. 6;  
3, 4, 9, 10, large macramphidises;  
5-8, small macramphidises.  
11-14.— Ordinary pentactine pinules of form D; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
15.— A pentactine pinule with long distal ray of form F; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
16.— A diactine pinule of form D; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.  
17-19.— Acanthophores of form F; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
17, a diactine;  
18, a pentactine;  
19, a triactine.  
20.— View of the specimen of form C; natural size; phot. Zeiss, anastig. 480/412 mm.  
21.— View of the specimen of form D; reduced 1:0.84; phot. Zeiss, anastig. 480/412 mm.  
22, 23.— Parts of radial sections through superficial portions of the marginal region of form D; magnified 30; phot. Zeiss, planar 20 mm.:  
22, part of an unstained section;  
23, part of a section stained with magenta.  
24-29.— Micramphidises of form D; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:  
24-26, small micramphidises;  
27-29, large micramphidises.

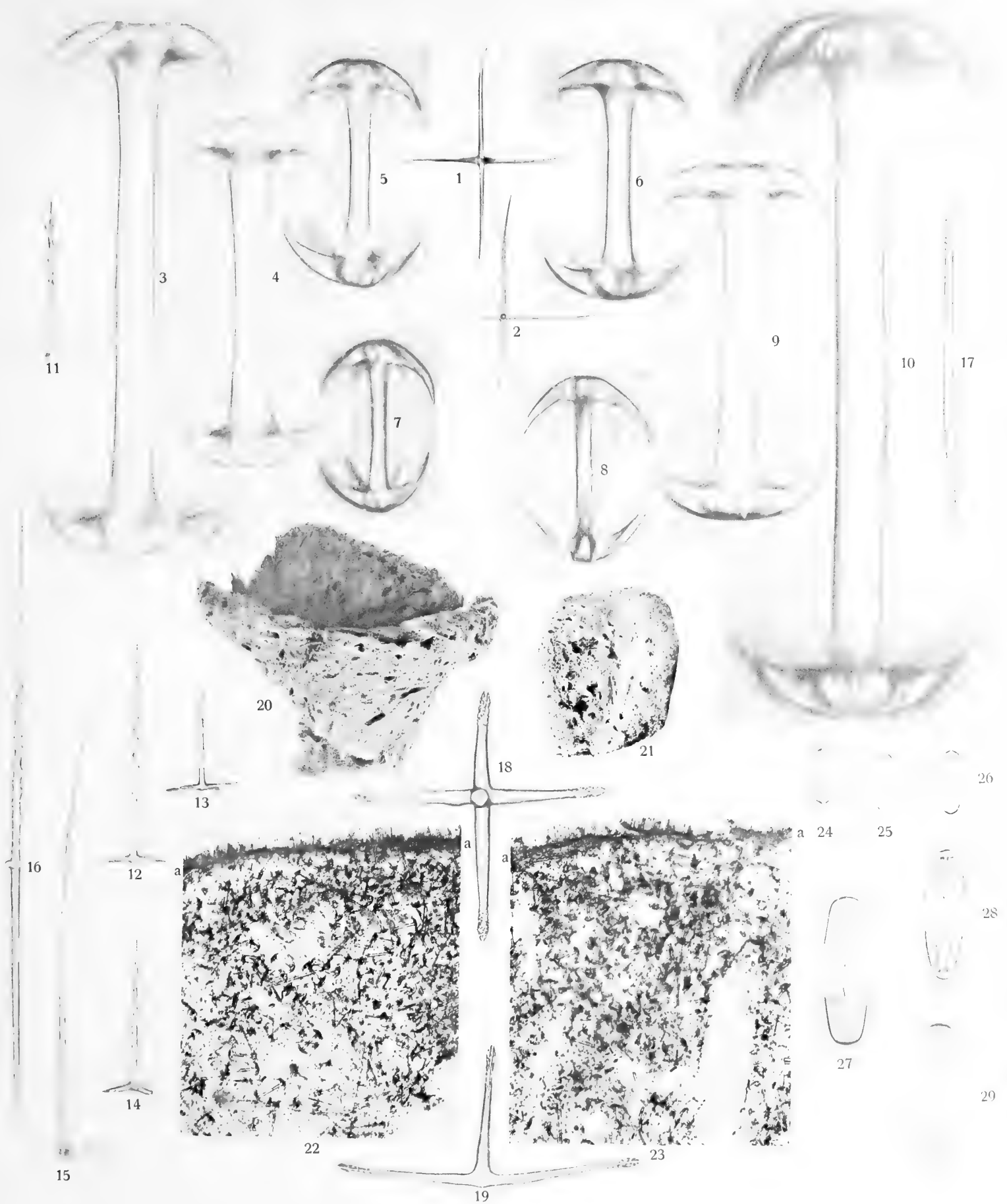


Fig. 1—29 *Hyalonema (Phialonema) pateriferum* Wilson. 1—14, 16, 21—29 form D; 15, 17—19 form F; 20 form C.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 53.

PLATE 53.

**Hyalonema (Hyalonema) polycaulum** LENDENFELD.

Figures 1-17.

- 1-3.— Parts of a macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
1, part of a terminal anchor, with the shaft in focus;  
2, the central part of the shaft;  
3, part of a terminal anchor with the uppermost teeth in focus.
- 4.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm.
- 5, 6.— A large micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
5, focussed higher; 6, focussed lower.
- 7.— A small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 8.— A hexactine megasclere; magnified 50; phot. Zeiss,achr. aa., compens. oc. 6.
- 9-12.— Parts of microhexactines; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
9, 10, the centrum and one ray of a smaller microhexactine;  
9, focussed higher; 10, focussed lower;  
11, 12, the centrum and one ray of a larger microhexactine;  
11, focussed higher; 12, focussed lower.
- 13.— Group of macramphidiscs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 14-16.— Microhexactines; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 17.— A strongly bent rhabd from one of the hard superficial knobs; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.



Fig. 1-17 *Hyalonema (Hyalonema) polycaulum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 54.

PLATE 54.

**Hyalonema (Hyalonema) polycaulum** LENDENFELD.

Figures 1-45.

- 1-15.— Stout-rayed tetractine and monactine to triactine tetractine-derivate acanthophores from the hard superficial knobs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
1-8, tetractines;  
9, 10, triactines;  
11, a rectangularly bent centrotyle diactine;  
12, a straight centrotyle diactine;  
13-15, tylostyle monactines.
- 16-20.— Rhabd, apparently diactine-derivate acanthophores of the hard superficial knobs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
16, 18, 19, cylindrical forms;  
17, 20, centrotyle forms.
- 21-25.— Small micramphidises; magnified 500:  
21, apical view of a terminal anchor; phot. Zeiss, H. I. apochr. 2, compens. oc. 4;  
22, side-view of a micramphidisc; phot. Zeiss, apochr. 4, compens. oc. 12;  
23, 24, side-view of micramphidises; phot. Zeiss, H. I. apochr. 2, compens. oc. 4;  
25, group of micramphidises from a centrifuge spicule-preparation; phot. Zeiss, apochr. 4, compens. oc. 12.
- 26, 27.— Large micramphidises; magnified 500:  
26, phot. Zeiss, apochr. 4, compens. oc. 12;  
27, phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 28, 29.— Macramphidises; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 30-33.— Small, slender-rayed, long-spined acanthophores from the hard superficial knobs; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 34.— A dermal pinule from one of the hard superficial knobs; magnified 300; phot. Zeiss, apochr. 4; compens. oc. 6.
- 35.— A dermal pinule; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 36, 37.— Apparently pinule-derivate, spiny pentactine acanthophores from the hard superficial knobs; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 38-40.— Dermal pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 41-45.— Gastral pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.

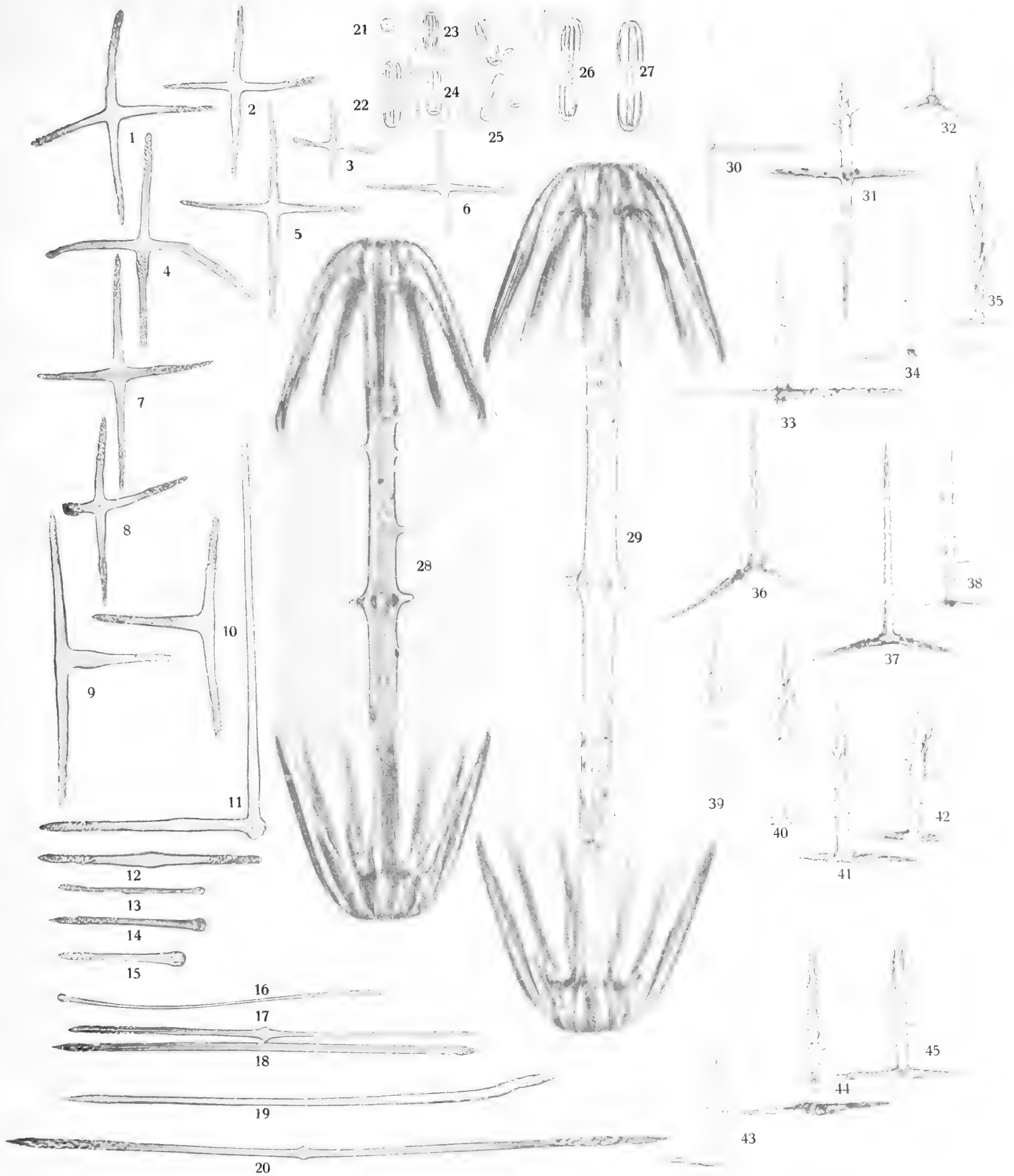


Fig. 1—45 *Hyalonema (Hyalonema) polycantum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 55.

PLATE 55.

**Hyalonema (Phialonema) brevancora** LENDENFELD.

Figures 1-37.

- 1.— View of the larger fragment; natural size; phot. Zeiss, anastig. 480/412 mm.
- 2, 3.— Pentactine megascleres; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 4.— An angularly bent diactine megasclere; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 5.— The centrum of the shaft of a macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 6.— One end of an abnormal rhabd; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 7-12.— Micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 7-9, small micramphidises;
  - 10-12, large micramphidises.
- 13.— A small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 14, 15.— Macramphidises; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 16-18.— A terminal anchor of a macramphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 16, focussed high; 17, focussed intermediate; 18, focussed low.
- 19, 20.— Part of a distal ray (19) and a whole distal ray (20) of a pinule; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 21-30.— Side-views of pinules; magnified 300; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:
  - 21-28, of pentactine pinules with long-spined distal ray;
  - 29, of a pentactine pinule with short-spined distal ray;
  - 30, of a hexactine pinule with long-spined distal ray.
- 31.— A hexactine megasclere; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 32, 33.— Apical views of the lateral rays of pentactine pinules; magnified 300; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 34, 35.— A whole microhexactine (34) and part of one (35); magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 36, 37.— Parts of microhexactines; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.

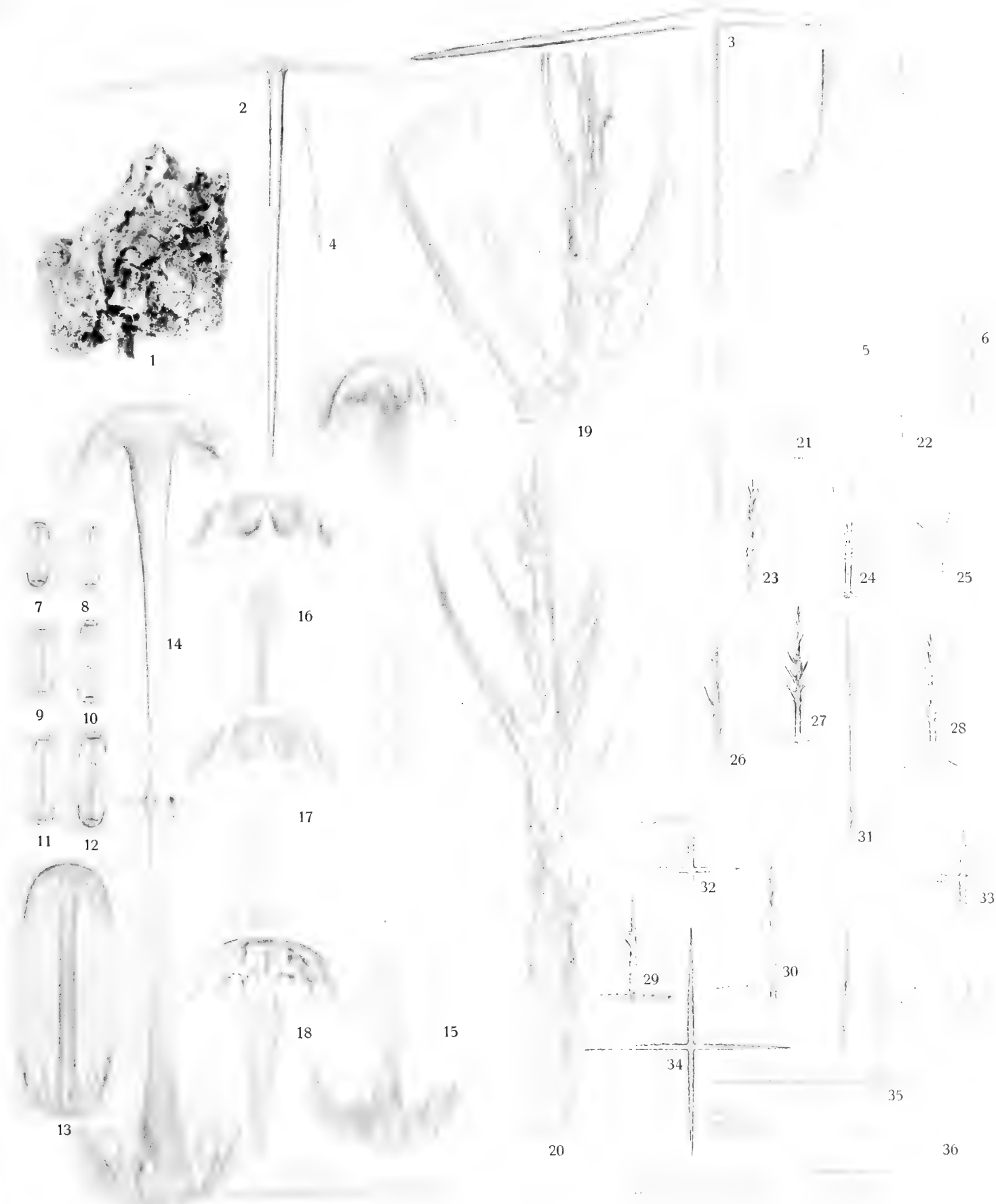


Fig. 1—37 *Hyalonema (Phialonema) brevancora* n. sp.





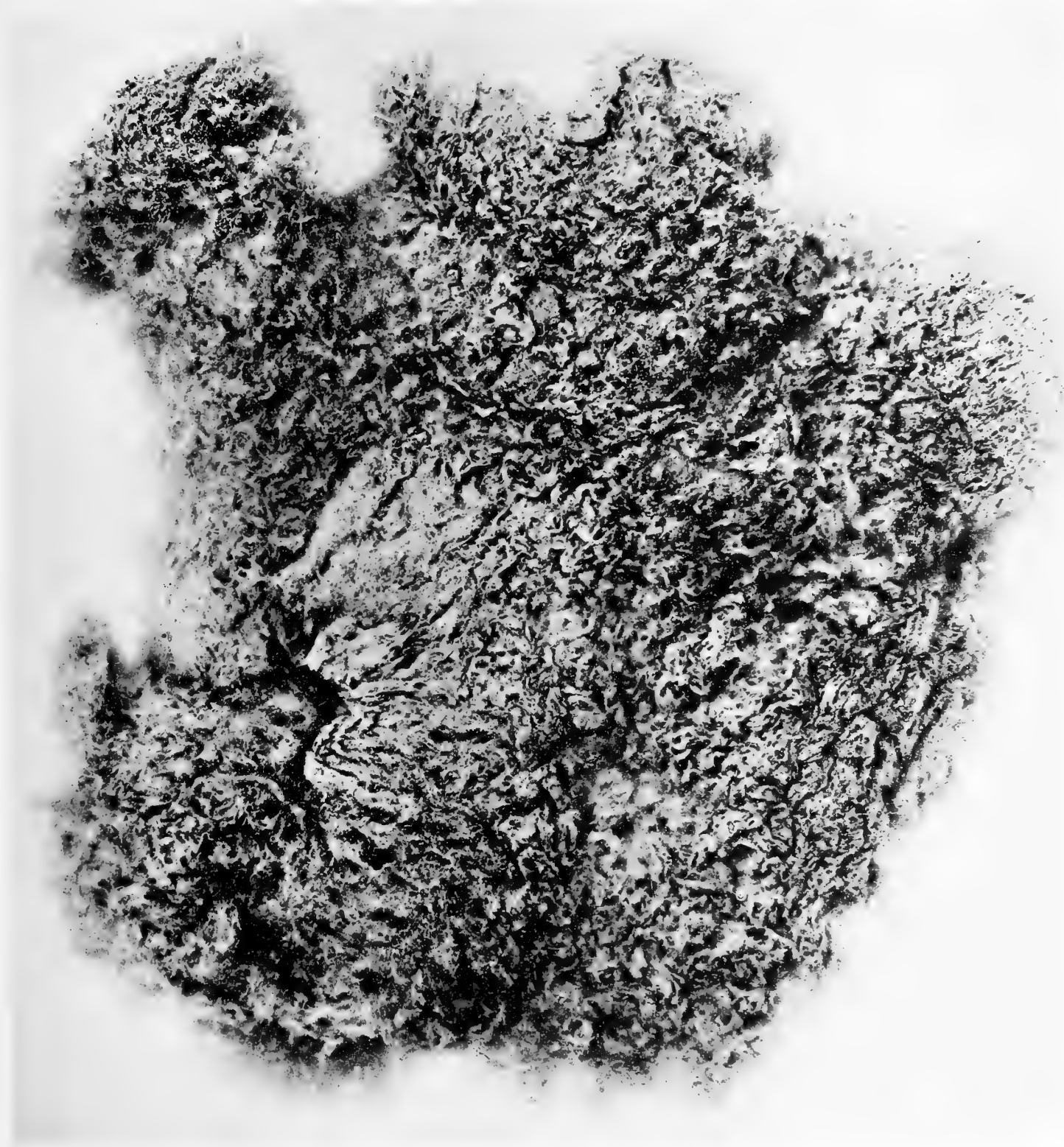
PLATE 56.

PLATE 56.

**Hyalonema (Prionema) azuerone** LENDENFELD.

Figure 1.

- 1.— View of the lower side of the specimen, floating in water and spread out flat; reduced 1:0.8; phot. Zeiss, anastig. 480/412 mm.



1

*Fig. 1 Hyalonema (Prionema) azuerone n. sp.*

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 57.

PLATE 57.

**Hyalonema (Prionema) azuerone** LENDENFELD.

Figures 1-23.

- 1-5.— Macramphidiscs and parts of such; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
1, a large macramphidisc with broad anchors; focussed lower (the shaft in focus);  
2, the broad terminal anchor represented in fig. 3, focussed high (the uppermost teeth in focus);  
3, the broad terminal anchor represented in fig. 2, focussed low (the shaft in focus);  
4, one (the upper) terminal anchor of the macramphidisc represented in fig. 5, focussed higher (the uppermost teeth in focus);  
5, a large macramphidisc with narrow anchors, focussed lower (the shaft in focus).
- 6-8.— Mesamphidiscs; magnified 500:  
6, 7, medium mesamphidiscs; phot. Zeiss, apochr. 4, compens. oc. 12;  
8, large mesamphidisc; phot. Zeiss, apochr. 8, compens. oc. 12.
- 9-12.— Stout-shafted micramphidiscs; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:  
9, a large one;  
10-12, small ones.
- 13-17.— Slender-shafted micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 18.— The central part of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 19-22.— Microhexactines; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 23.— The centrum and one ray of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.

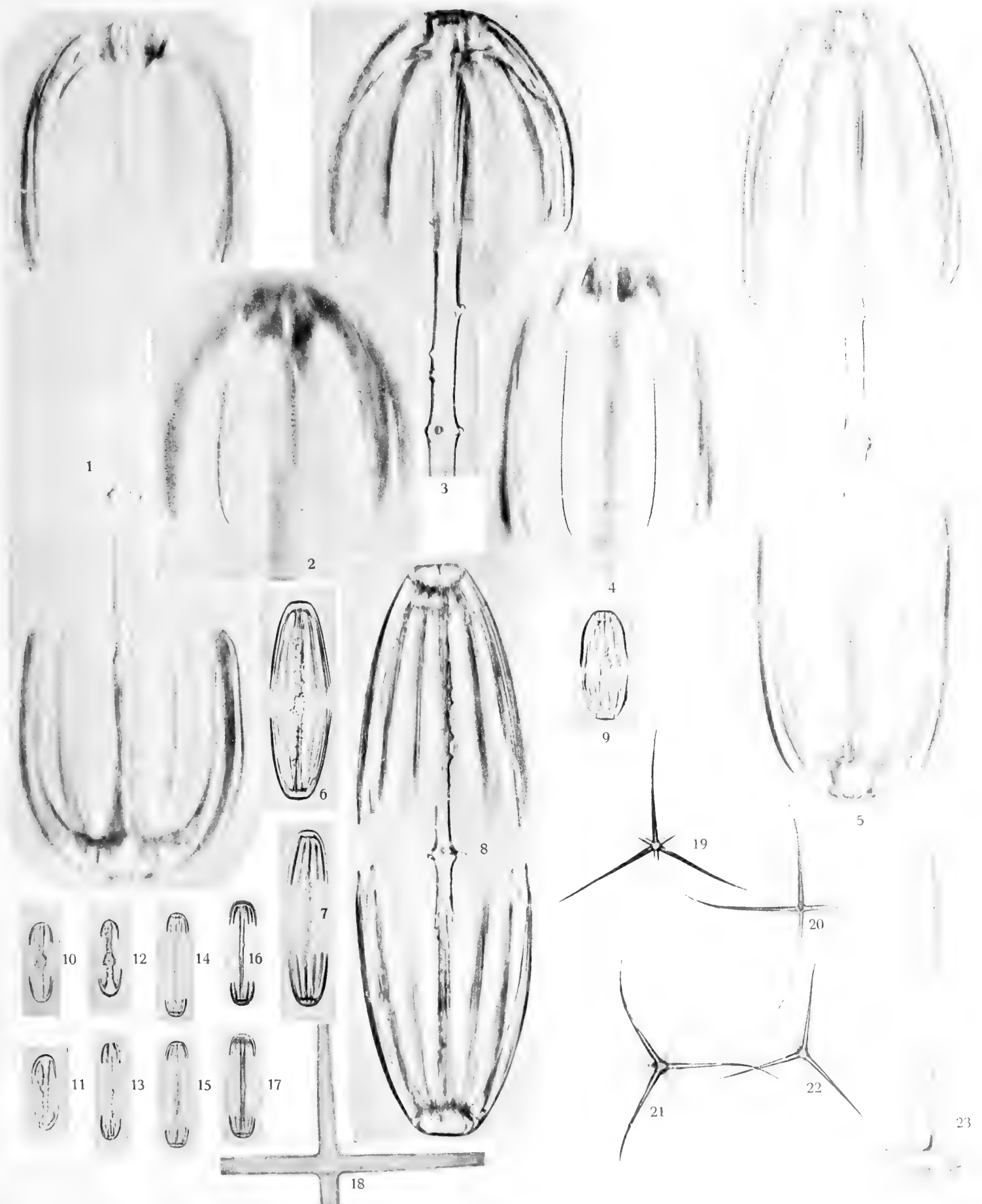


Fig. 1—23 *Hyalonema (Prionema) azneroni* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.







PLATE 58.

**Hyalonema (Prionema) azuerone** LENDENFELD.

Figures 1-22.

- 1.— Part of a section through the choanosome, showing a canal-wall; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, canal-wall; b, canalar pinules; c, microhexactines; d, micramphidiscs.
- 2.— Part of a section through the choanosome, showing a region particularly rich in small micramphidiscs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 3.— Section vertical to the surface through the superficial part of the sponge; magenta; magnified 30; phot. Zeiss, planar 20 mm.:  
a, outer surface with pinule-fur; b, group of flagellate chambers; c, wall of a canal.
- 4.— Surface-view of a pore-sieve on the lower side of the sponge; magnified 20; phot. Zeiss, planar 20 mm.
- 5-9.— Parts of anchor-teeth of micramphidiscs; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
5, a portion of the middle-part of a tooth;  
6, 7, the end-part of a tooth;  
6, focussed lower; 7, focussed higher;  
8, the end-part of a tooth;  
9, portion of the basal part of a tooth.
- 10.— Part of the superficial pinule-fur, from a section vertical to the surface; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 11.— Surface-view of a portion of the superficial pinule-fur on the lower side of the sponge; magnified 20; phot. Zeiss, planar 20 mm.
- 12.— A slender-shafted micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 13.— A medium mesamphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 14, 15.— Apical views of the crosses formed by the lateral rays of the superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 16-22.— Side-views of pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
16, 19, canalar pinules;  
17, 18, 20-22, superficial pinules.

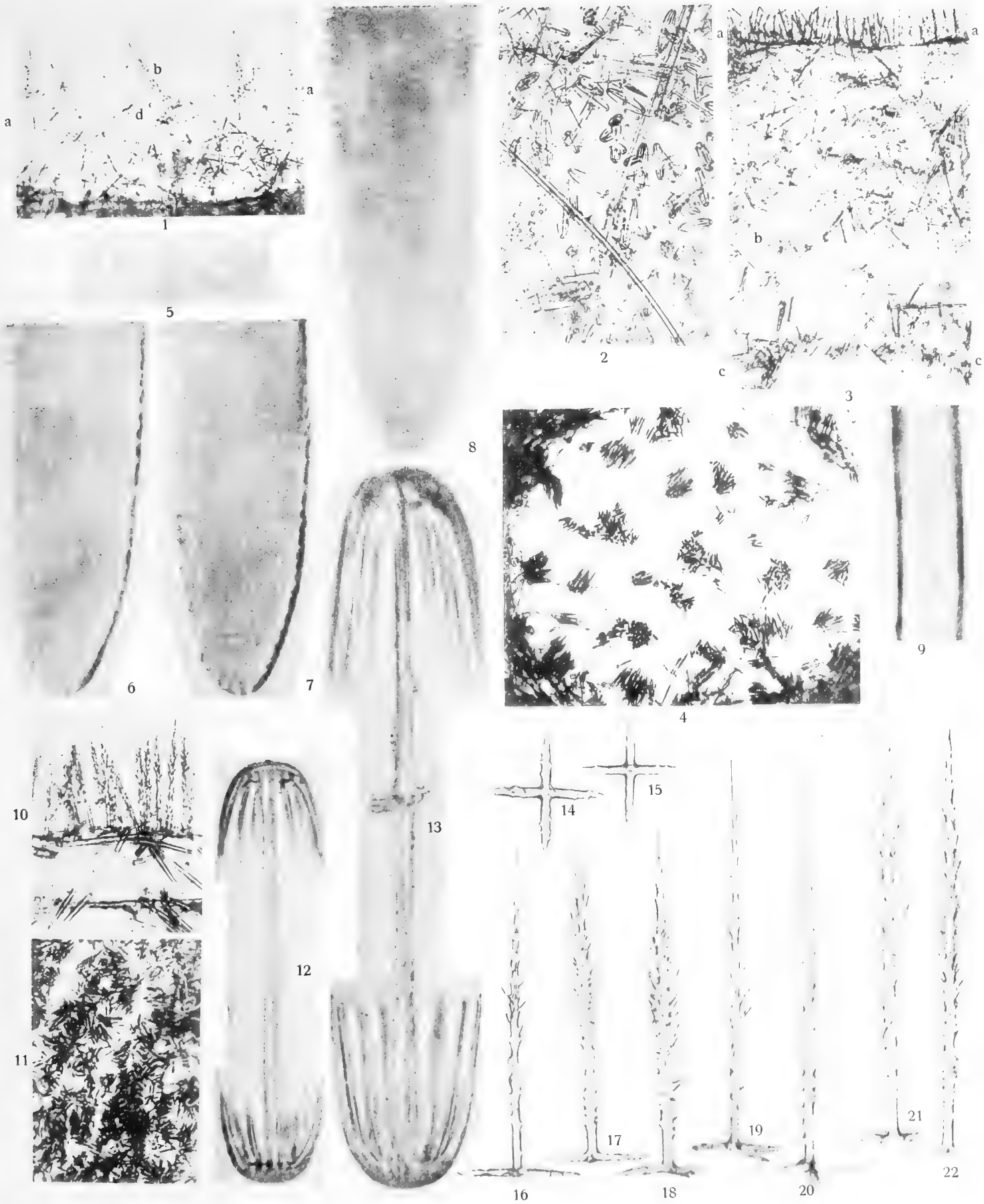


Fig. 1—22 *Hyalonema (Prionema) azuerone* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 59.

PLATE 59.

**Hyalonema (Prionema) fimbriatum** LENDENFELD.

Figures 1-6.

- 1-3.— Three macramphidises with the shaft in focus; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 6.
- 4-6.— Three anchor-heads of macramphidises, with the uppermost teeth in focus; magnified 500:  
4, an anchor with teeth terminating with two lobes; phot. Zeiss, apochr. 4, compens. oc. 12;  
5, an anchor with normal teeth; phot. Zeiss, apochr. 8, compens. oc. 6;  
6, an anchor with the ends of some of the teeth bent towards one side; phot. Zeiss, apochr. 8, compens. oc. 6.  
(Figs. 5 and 6 represent the two anchors of the same amphidisc).

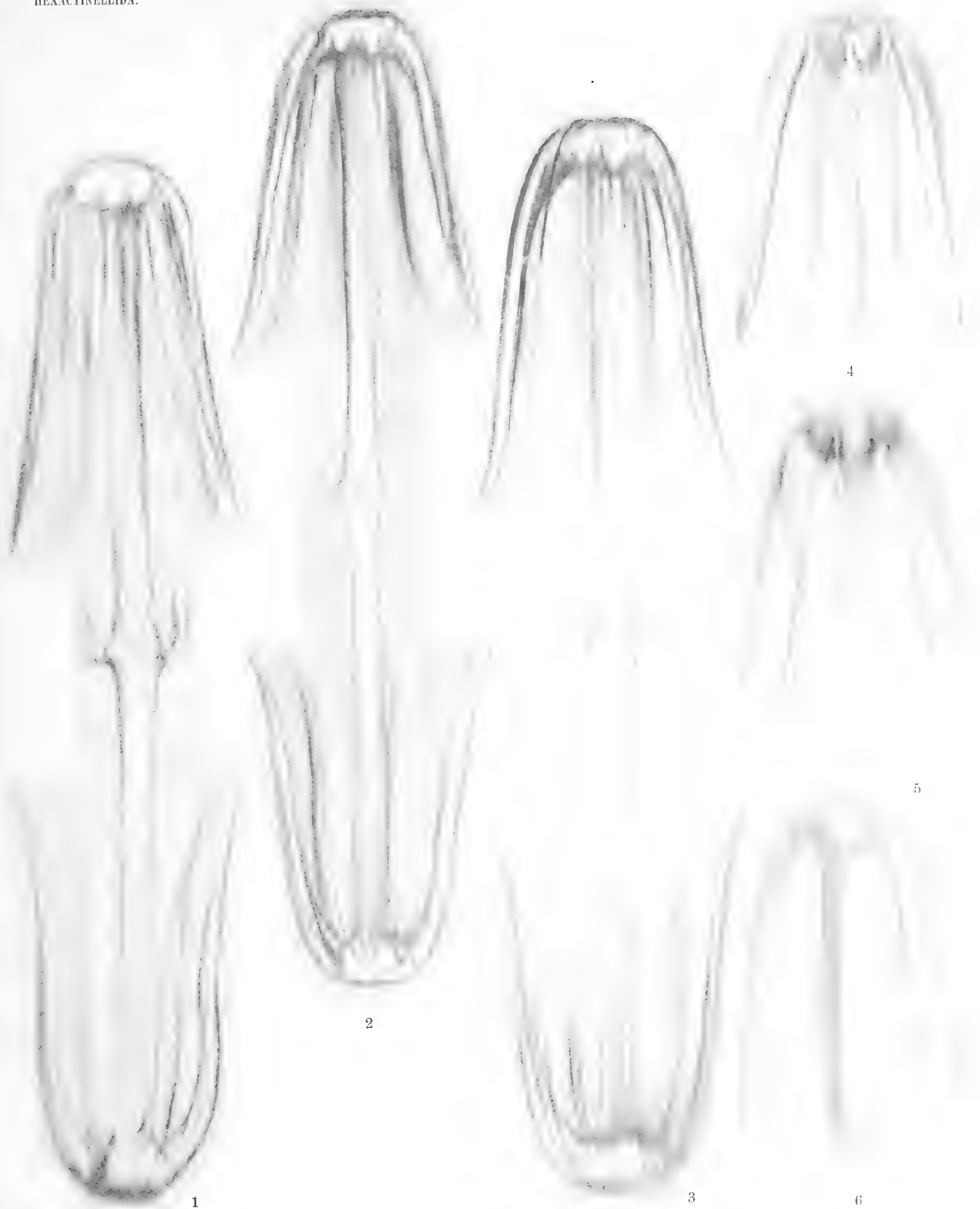


Fig. 1-6 *Hyalonema (Prionema) fimbriatum n. sp.*

Lendenfeld photographed.





PLATE 60.

PLATE 60.

**Hyalonema (Prionema) fimbriatum** LENDENFELD.

Figures 1-34.

- 1, 2.— Anchors of largest fimbriate amphidiscs with the upper teeth in focus; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6 (fig. 1 is the upper of the two anchors of the amphidisc represented in fig. 3, focussed higher).
- 3-6.— Largest fimbriate amphidiscs with the shaft in focus; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 7, 8.— A large fimbriate amphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
.7, focussed higher, on the uppermost teeth; 8, focussed lower, on the shaft.
- 9, 10.— A large fimbriate amphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
9, focussed higher, on the uppermost teeth; 10, focussed lower, on the shaft.
- 11, 12.— Large fimbriate amphidiscs; magnified 5000; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 13, 14.— Small fimbriate amphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 15.— A smallest fimbriate amphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 16, 17.— A micramphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
16, focussed higher; 17, focussed lower.
- 18-23.— Micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 24.— Group of largest fimbriate amphidiscs of the subgastral zone *in situ* in a section; magnified 100;  
phot. Zeiss, apochr. 16, compens. oc. 6.
- 25.— Group of microhexactines in a centrifuge preparation; magnified 100; phot. Zeiss, apochr. 16,  
compens. oc. 6.
- 26-30.— Microhexactines; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 31.— A lateral ray of a micropentactine; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 32-34.— The lateral ray-crosses of micropentactines; magnified 500; phot. Zeiss, H. I. apochr. 2,  
compens. oc. 6.

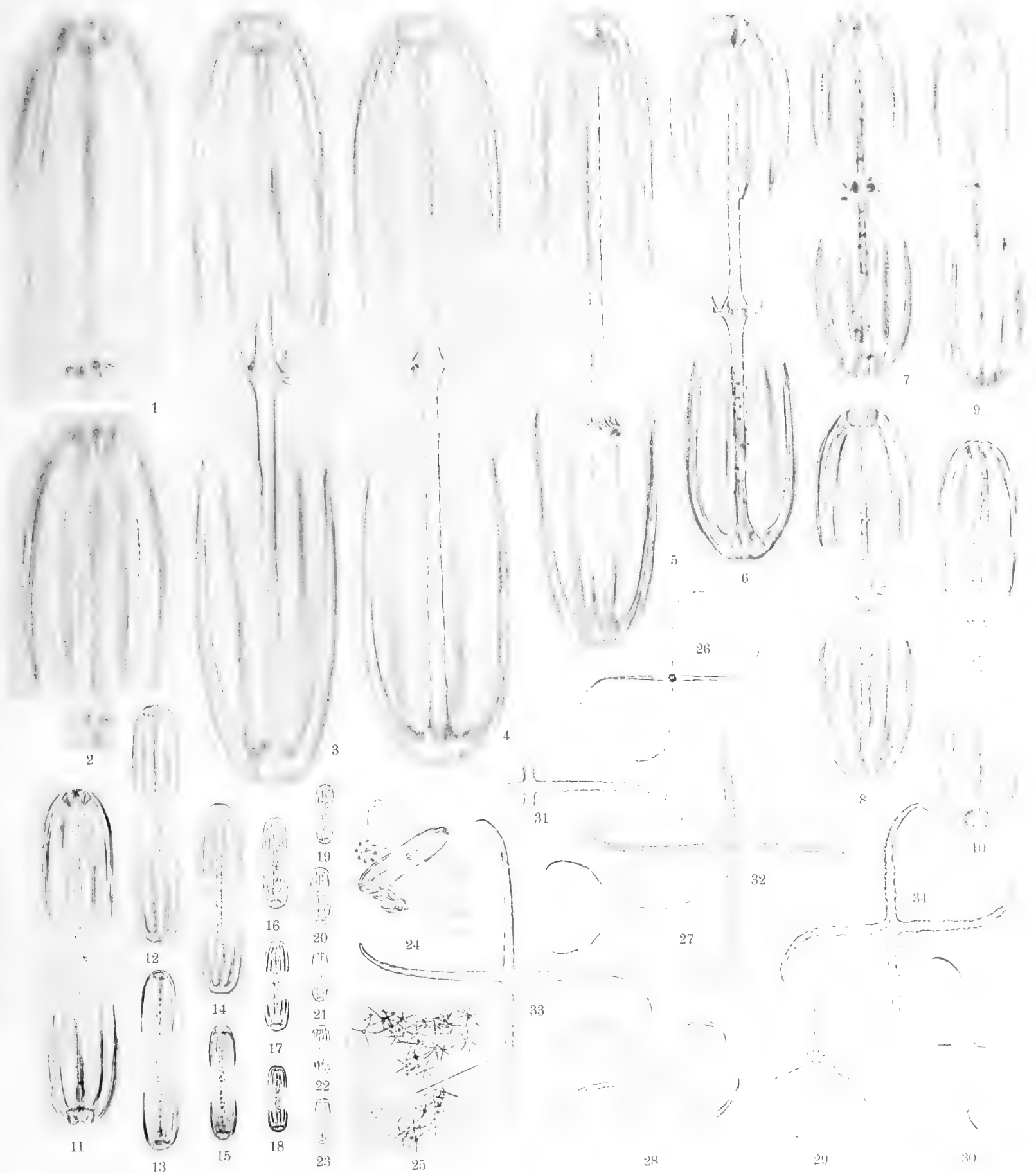


Fig. 1-34 *Hyalonema (Prionema) fimbriatum* n. sp.

Lendenfeld photographed.



PLATE 61.

PLATE 61.

**Hyalonema (Prionema) fimbriatum** LENDENFELD.

Figures 1-11.

- 1-10.— Parts of anchor-teeth of largest fimbriate amphidiscs; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
- 1-3, the larger, middle-part of a tooth;
    - 1, focussed low; 2, focussed intermediate; 3, focussed high (intervals  $2 \mu$ );
  - 4, 5, the basal part of a tooth;
    - 4, focussed higher; 5, focussed lower;
  - 6, 7, the end-part of a tooth;
    - 6, focussed higher; 7, focussed lower;
  - 8, 9, the basal part of a tooth;
    - 8, focussed higher; 9, focussed lower;
  - 10, the end-part of a tooth.
- 11.— Part of an anchor of a largest fimbriate amphidisc, with the uppermost teeth in focus; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.

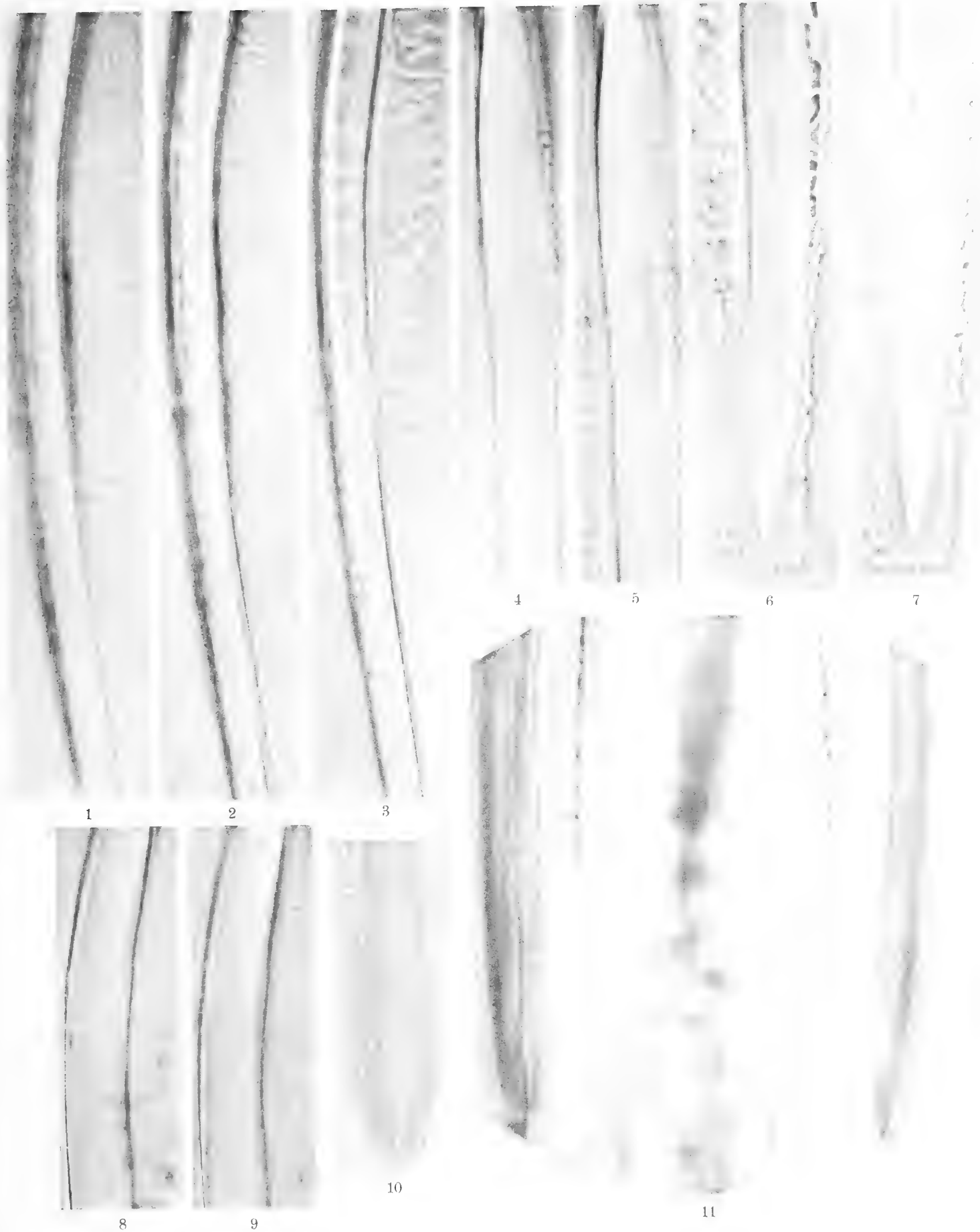


Fig. 1-11 *Hyalonema (Prionema) fimbriatum n. sp.*

Lendenfeld photographed.





PLATE 62.

PLATE 62.

**Hyalonema (Prionema) fimbriatum** LENDENFELD.

Figures 1-45.

- 1-4.— Side-views of dermal pinules; magnified 300; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
5-9.— The distal parts of basal anchors; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
10, 11.— Parts of shafts of basal anchors; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
12.— Part of a micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
13, 14.— Micramphidiscs; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
15.— A smallest fimbriate amphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
16-18.— Lateral ray-crosses of dermal pinules; magnified 300; phot. Zeiss, H. I. apochr. 2, comp. oc. 6.  
19.— A lateral ray-cross of a canalar pinule; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
20-26.— Slender-rayed, long-spined, tetractine to hexactine acanthophores; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
27.— The central part of the shaft of the largest fimbriate amphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
28.— The central part of a micropentaactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
29, 30.— Two of the specimens; reduced 1:0.92; phot. Zeiss, anastig. 480/412 mm.:  
29, an irregularly outlined one seen from below;  
30, a regularly outlined one seen from above.  
31.— The end-part of an anchor-tooth of a macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.  
32-41.— Side-views of canalar pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.  
42-45.— Parts of microhexactines; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
42, the centrum and one ray of one, focussed lower;  
43, the centrum of the same, focussed higher;  
44, the centrum and four rays of another;  
45, the centrum and two rays of a third.

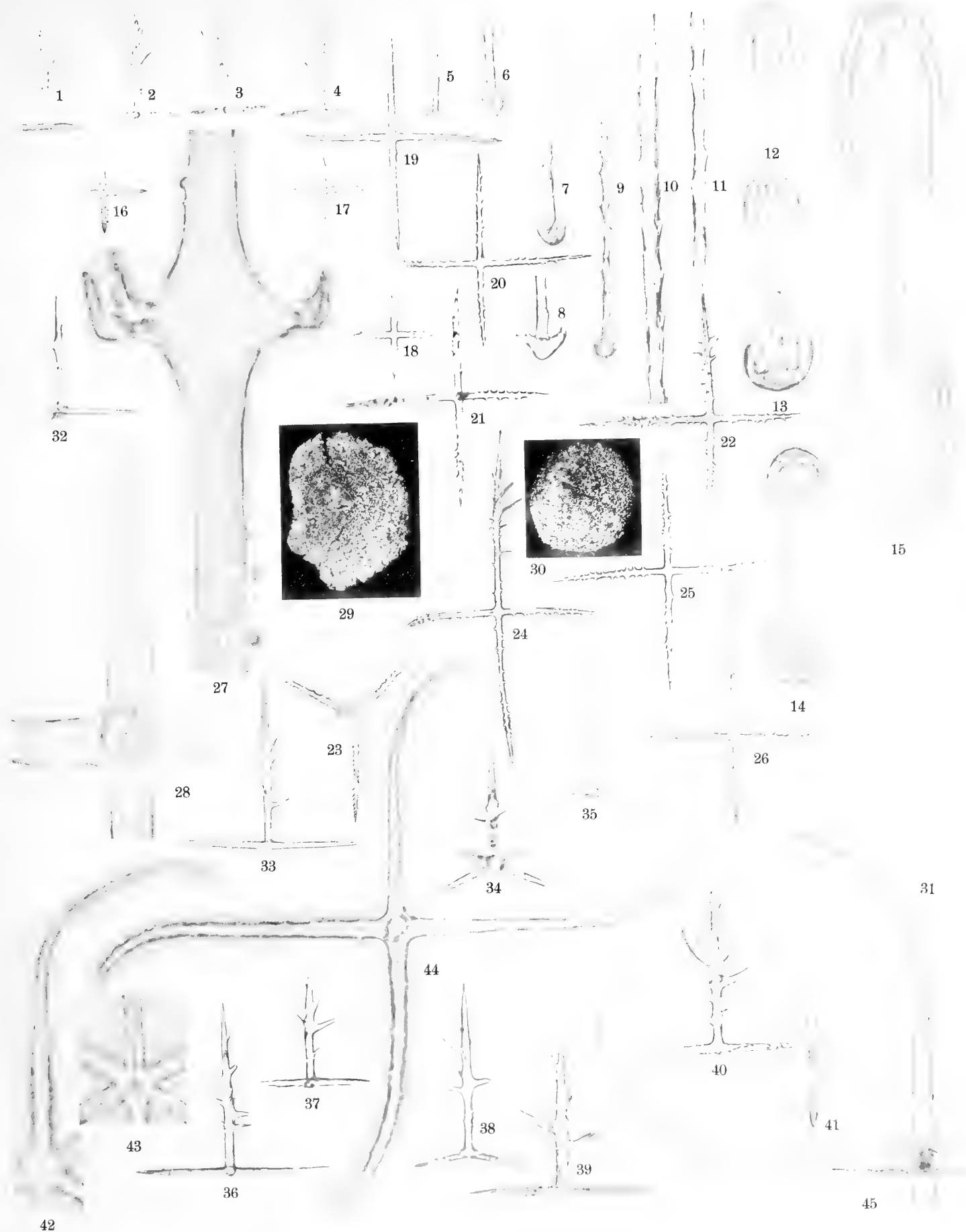


Fig. 1-45 *Hyalonema (Prionema) fimbriatum* n. sp.

Lendenfeld photographed.



PLATE 63.

PLATE 63.

**Hyalonema (Prionema) fimbriatum** LENDENFELD.

Figures 1-28.

- 1-5.— Hexactine megascleres; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.  
6-9.— Hypodermal pentactines; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
6, apical view;  
7-9, side-views.  
10-14.— Rhabd megascleres; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
10, 11, amphiox rhabds;  
12-14, rhabds rounded and thickened at one end.  
15-28.— Acanthophores; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
15, a small tetractine;  
16-18, large tetractines with fairly equal rays;  
19, a large tetractine with unequal rays;  
20-24, straight or only slightly curved, more or less centrotyle diactines;  
25, 26, slender, strongly curved, terminally thickened rhabds;  
27, 28, stout, curved, terminally thickened rhabds.

**Hyalonema (Hyalonema) placuna** LENDENFELD.

Figs. 29-34, 36-41, 51 — form B.  
Figs. 35, 42-50 — form A.

- 29-34.— Mesamphidises of form B; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.  
35.— A mesamphidisc of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
36-41.— Micramphidises of form B; magnified 500:  
36, 39, phot. Zeiss, apochr. 4, compens. oc. 12;  
37, 38, 40, 41, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
42-45.— Micramphidises of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
46, 47.— Centrotyle amphioxes of form A; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
48-50.— Hypodermal pentactines of form A; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
48, an apical view;  
49, 50, side-views.  
51.— Part of a tetractine mesamphidisc-derivate (tetradisc) of form B; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.

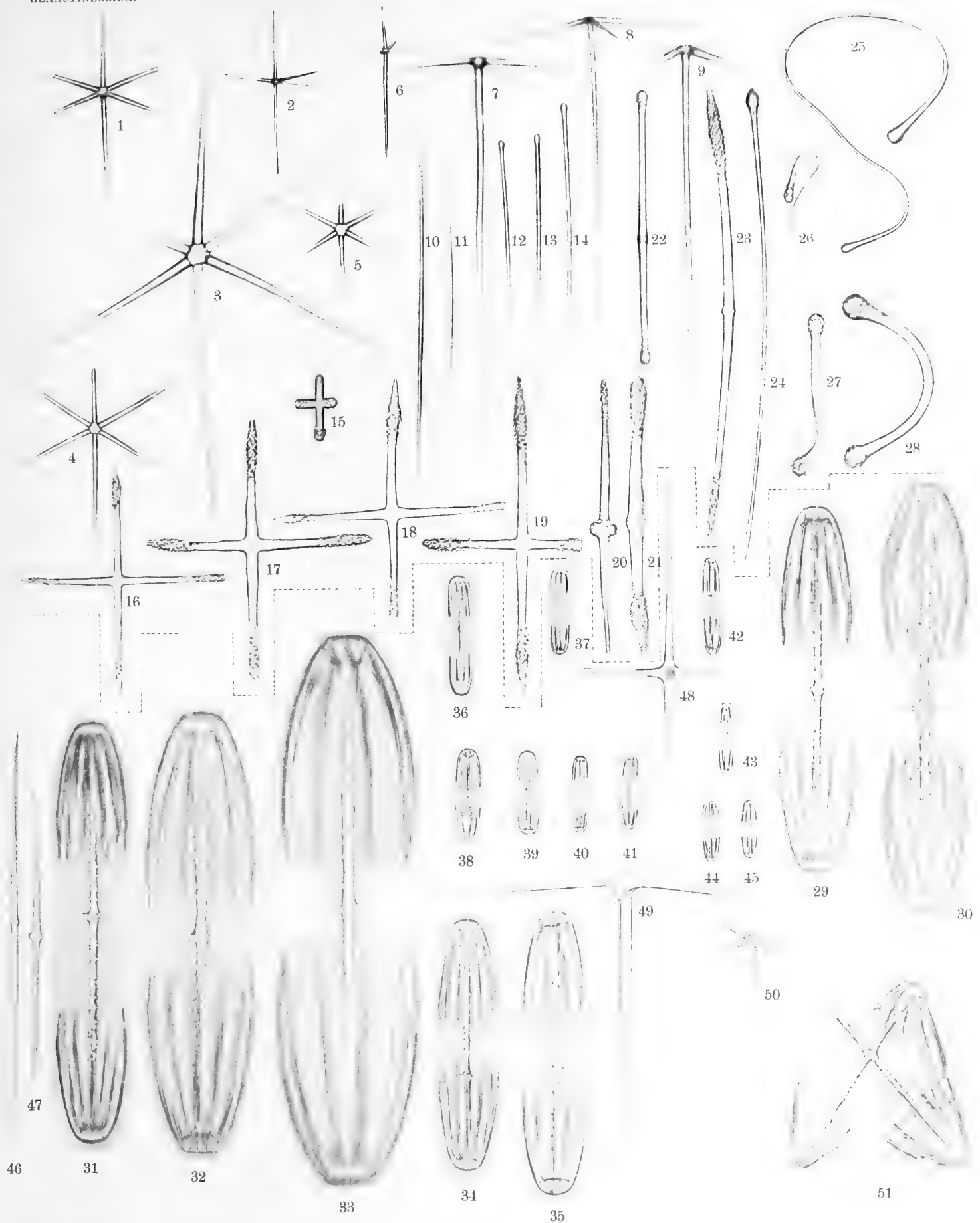


Fig. 1-28 *Hyalonema (Prionema) fimbriatum* n. sp. Fig. 29-51 *Hyalonema (Hyalonema) placuna* n. sp.  
 29-34, 36-41, 51 form B; 35, 42-50 form A.

Lendenfeld photographed.





PLATE 64.

PLATE 64.

**Hyalonema (Hyalonema) placuna** LENDENFELD.

Figs. 1-3, 5, 6, 9, 10, 12, 17-19 — form B.  
Figs. 4, 7, 8, 11, 13-16 — form A.

- 1.— Centrotyle diactine spicule of form B; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 2-7.— Microhexactines and pentactine microhexactine-derivates; magnified 500:
  - 2, 6, 7, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;
  - 3-5, phot. Zeiss, apochr. 8, compens. oc. 12;
    - 2, 3, 5, 6, of form B;
    - 4, 7, of form A.
- 8.— Part of a paratangential section of the dermal membrane of form A, showing the lateral ray-crosses of the dermal pinules *in situ*; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 9, 10.— Two lateral ray-crosses of dermal pinules; magnified 300:
  - 9, of form B; phot. Zeiss, apochr. 4, compens. oc. 6;
  - 10, of form B; phot. Zeiss, apochr. 8, compens. oc. 12.
- 11.— View of the specimen of form A; natural size; phot. Zeiss, anastig. 480/412 mm.
- 12.— View of the specimen of form B; natural size; phot. Zeiss, anastig. 480/412 mm.
- 13.— Part of the oscular frill of form A; magnified 30; phot. Zeiss, planar 20 mm.:
  - a, dermal pinules; b, longitudinal rhabds.
- 14-19.— Side-views of dermal pinules; magnified 300:
  - 14-16, of form A;
  - 17-19, of form B;
    - 14-17, phot. Zeiss, apochr. 8, compens. oc. 12;
    - 18, 19, phot. Zeiss, apochr. 4, compens. oc. 6.

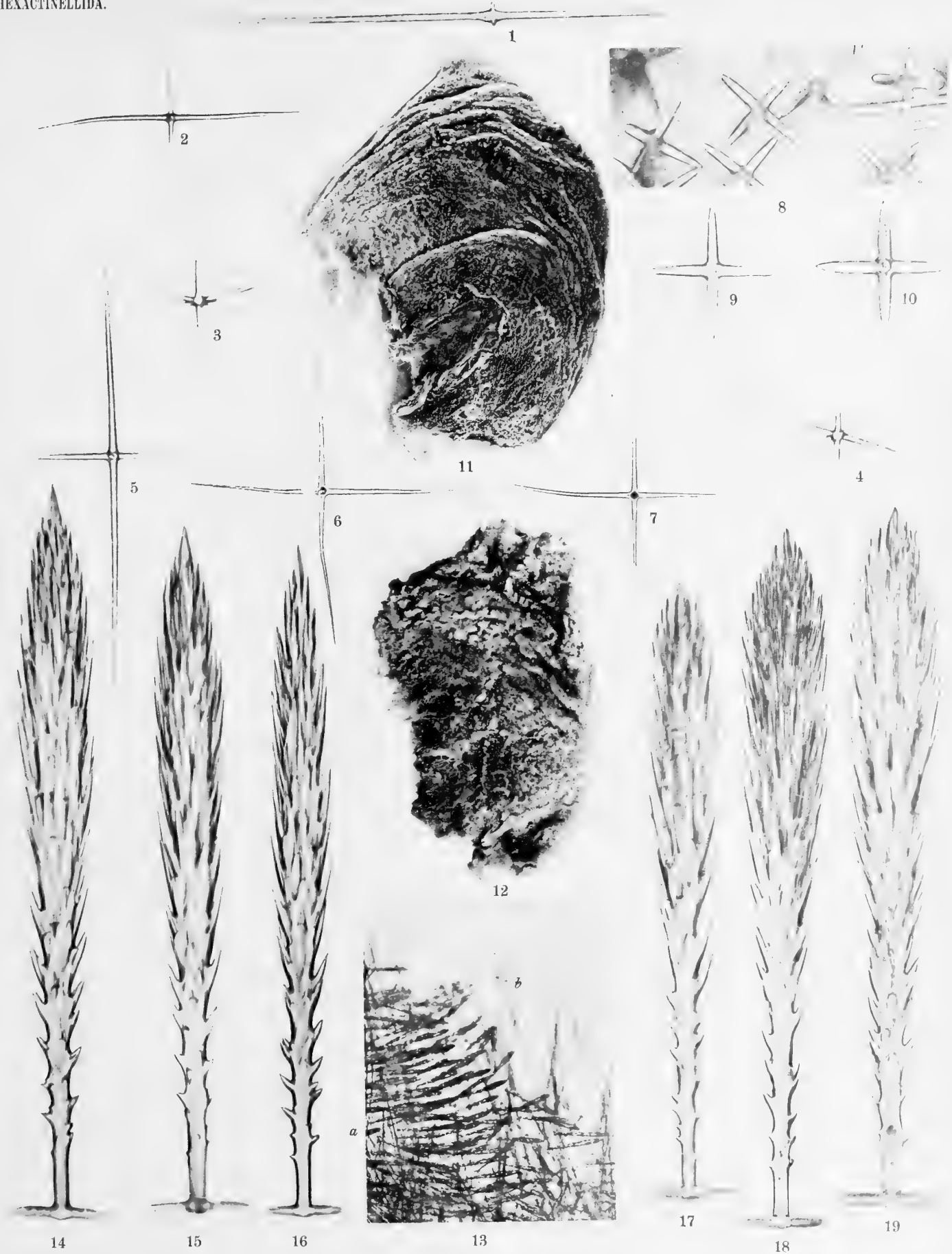


Fig. 1-19 *Hyalonema (Hyalonema) placuna* n. sp.  
 1-3, 5, 6, 9, 10, 12, 17-19 form B; 4, 7, 8, 11, 13-16 form A.

Lendenfeld photographed.



PLATE 65.

PLATE 65.

**Hyalonema (Hyalonema) placuna** LENDENFELD.

Figs. 1, 3-13, 16-18, 23 — form B.  
Figs. 2, 14, 15, 19-22 — form A.

- 1.— A terminal anchor of a macramphidisc of form B, with a supernumerary tooth arising some distance below the others; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 2.— Part of a mesamphidisc of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 3-8.— Parts of a microhexactine of form B; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 3, the centrum and a ray of the spicule, focussed high (the tip of the ray in focus);
  - 4, part of the distal portion of the same ray, focussed lower (a region about 17  $\mu$  from the tip in focus);
  - 5, part of the middle-portion of the same ray, focussed still lower (a region about 32  $\mu$  from the tip in focus);
  - 6, part of the middle-portion of the same ray, focussed still lower (a region about 42  $\mu$  from the tip in focus);
  - 7, part of the proximal portion of the same ray, focussed still lower (a region about 53  $\mu$  from the tip in focus);
  - 8, the basal part of the same ray and the centrum of the spicule, focussed lowest (the base of the ray in focus).
- 9-12.— Small internal pinules of form B; magnified 300:
  - 9, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;
  - 10-12, phot. Zeiss, apochr. 4, compens. oc. 12.
- 13-15.— Micramphidiscs; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 13, a micramphidisc of form B;
  - 14, a micramphidisc of form A, focussed higher; 15, focussed lower.
- 16-21.— Internal pinules; magnified 300:
  - 16-18, of form B;
  - 19-21, of form A;
    - 16, 20, 21, phot. Zeiss, apochr. 8, compens. oc. 12;
    - 17-19, phot. Zeiss, apochr. 4, compens. oc. 6.
- 22, 23.— Radial sections through a superficial part of the sponge; magnified 30; phot. Zeiss, planar 20 mm.:
  - 22, of form A;
  - 23, of form B;
    - a, dermal pinule-fur; b, choanosome,

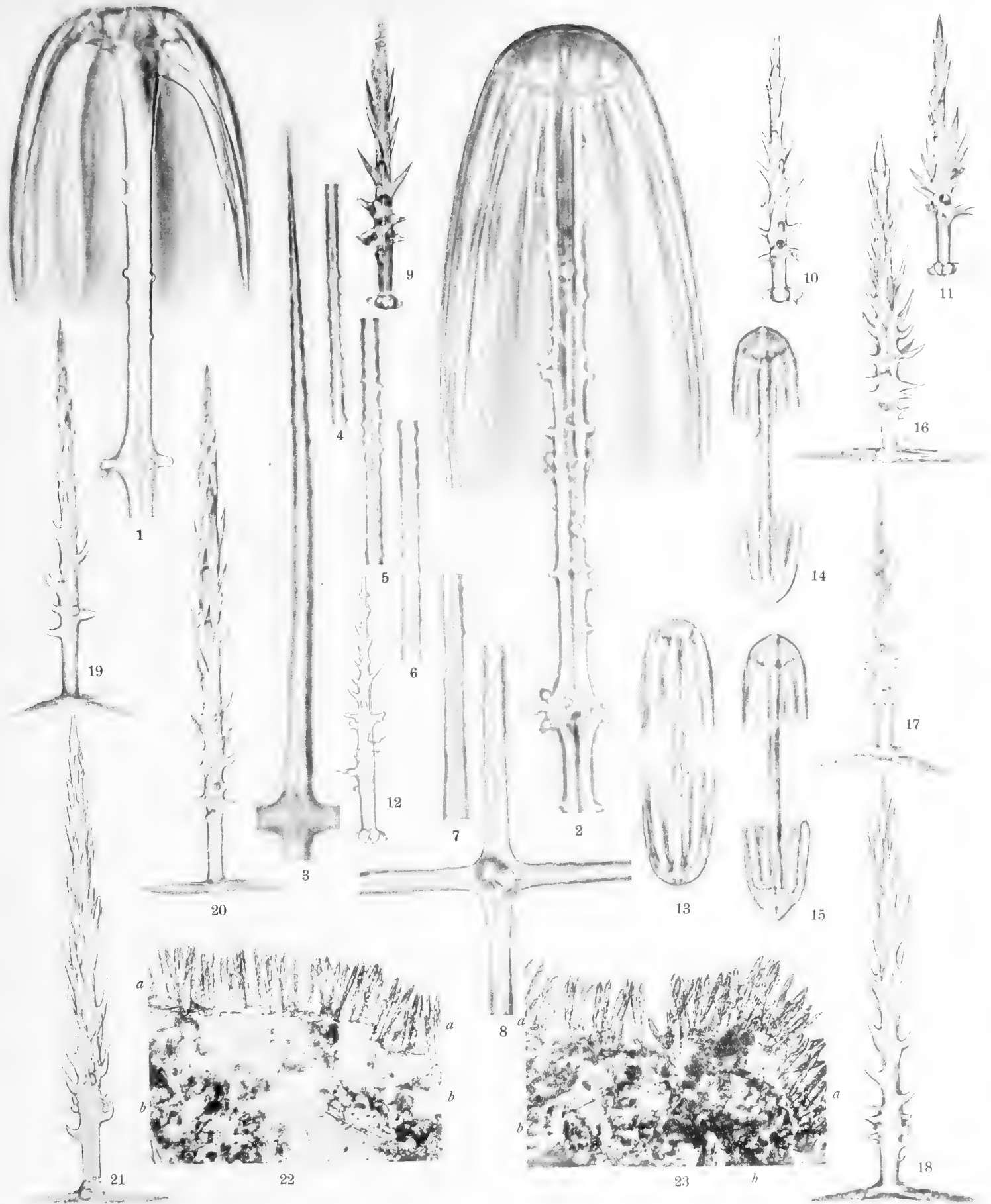


Fig. 1-23 *Hyalonema (Hyalonema) placuna* n. sp.  
 1, 3-13, 16-18, 23 form B; 2, 14, 15, 19-22 form A.

Lendenfeld photographed.





PLATE 66.

PLATE 66.

**Hyalonema (Hyalonema) placuna** LENDENFELD.

Figs. 1, 2, 5 — form A.

Figs. 3, 4, — form B.

- 1-5.— Macramphidises and parts of same; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6:
- 1, a terminal anchor of a macramphidise of form A; focussed low (the shaft in focus);
  - 2, the same anchor; focussed high (the upper teeth in focus);
  - 3, a macramphidise of form B; focussed low (the shaft in focus);
  - 4, the same macramphidise; focussed high (the upper teeth in focus);
  - 5, a macramphidise of form A.

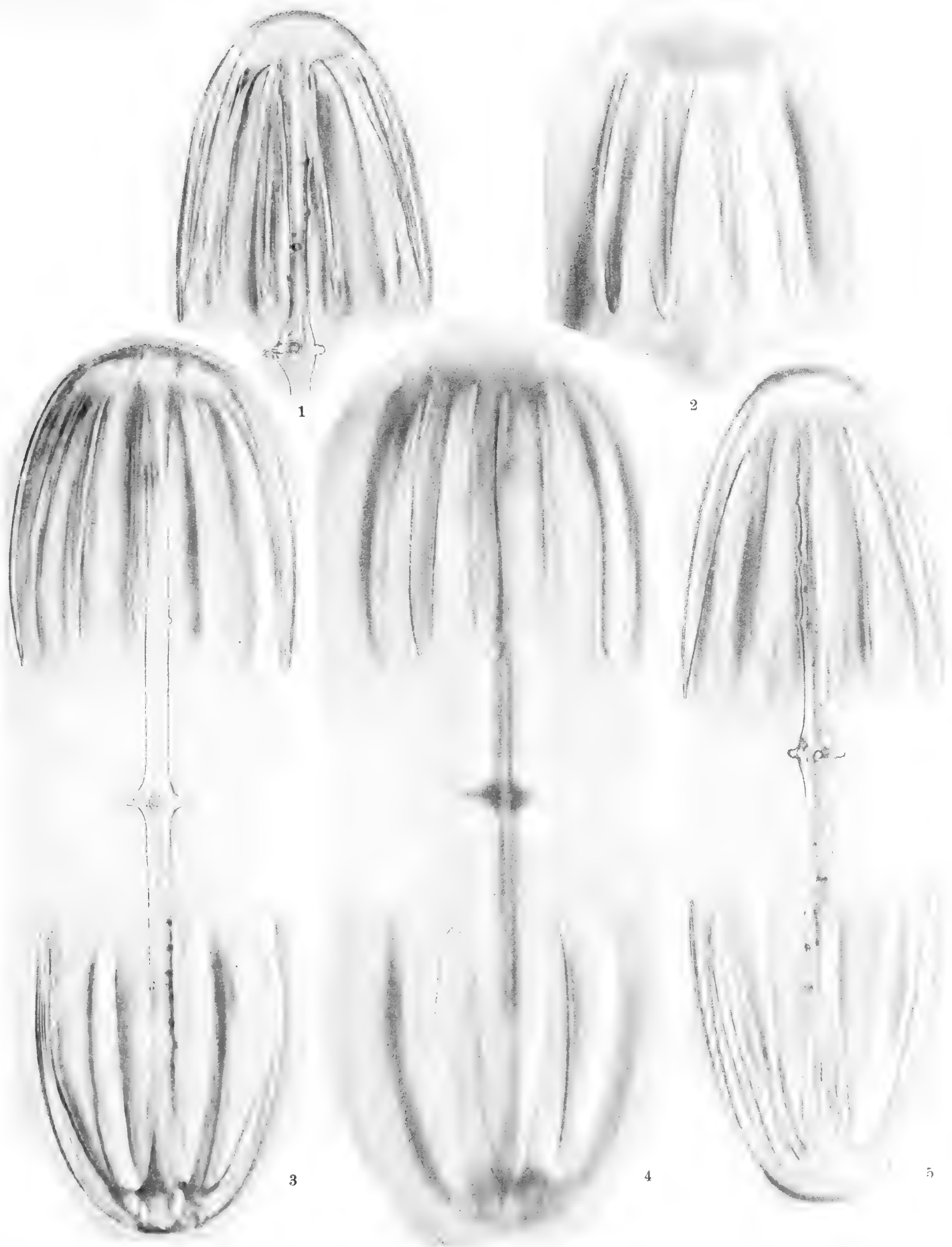


Fig. 1-5 *Hyalonema (Hyalonema) placuna* n. sp.  
1, 2, 5 form A; 3, 4 form B.

Lendenfeld photographed.



PLATE 67

PLATE 67.

**Hyalonema (Hyalonema) tenuifusum** LENDENFELD.

Figs. 1-7, 9, 13-17 — specimen a.

Figs. 8, 10-12, 18-26 — specimen b.

- 1.— View of specimen a; reduced 1:0.84; phot. Zeiss, anastig. 480/412 mm.
- 2-5.— Large macramphidiscs and parts of same of specimen a; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6:
  - 2, a whole macramphidisc focussed low (on the shaft);
  - 3, one of the terminal anchors of the same spicule, focussed high (on the tips of the uppermost teeth);
  - 4, a terminal anchor of another macramphidisc, focussed high (on the tips of the uppermost teeth);
  - 5, the same terminal anchor, focussed low (on the shaft).
- 6, 7.— Acanthophores of specimen a; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - 6, a tetractine;
  - 7, a diactine.
- 8.— Tetractine microhexactine-derivates of specimen b; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 9.— Microhexactine of specimen a; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 10, 11.— Parts of a tetractine microhexactine-derivate of specimen b; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 10, part of the distal portion of a ray;
  - 11, the central part of the spicule.
- 12.— The central part with the tyle of a minute centrotyle amphiox of specimen b; magnified 2000, u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 13-26.— Amphidiscs; magnified 500:
  - 13-17, of specimen a;
  - 18-26, of specimen b;
    - 13, 14, 16-21, 25, phot. Zeiss, H. I. apochr. 2, compens. oc. 4;
    - 15, 22-24, 26, phot. Zeiss, apochr. 4, compens. oc. 12;
      - 13, 14, 22-25, small macramphidiscs;
      - 15, 26, large macramphidiscs;
      - 16-21, micramphidiscs.

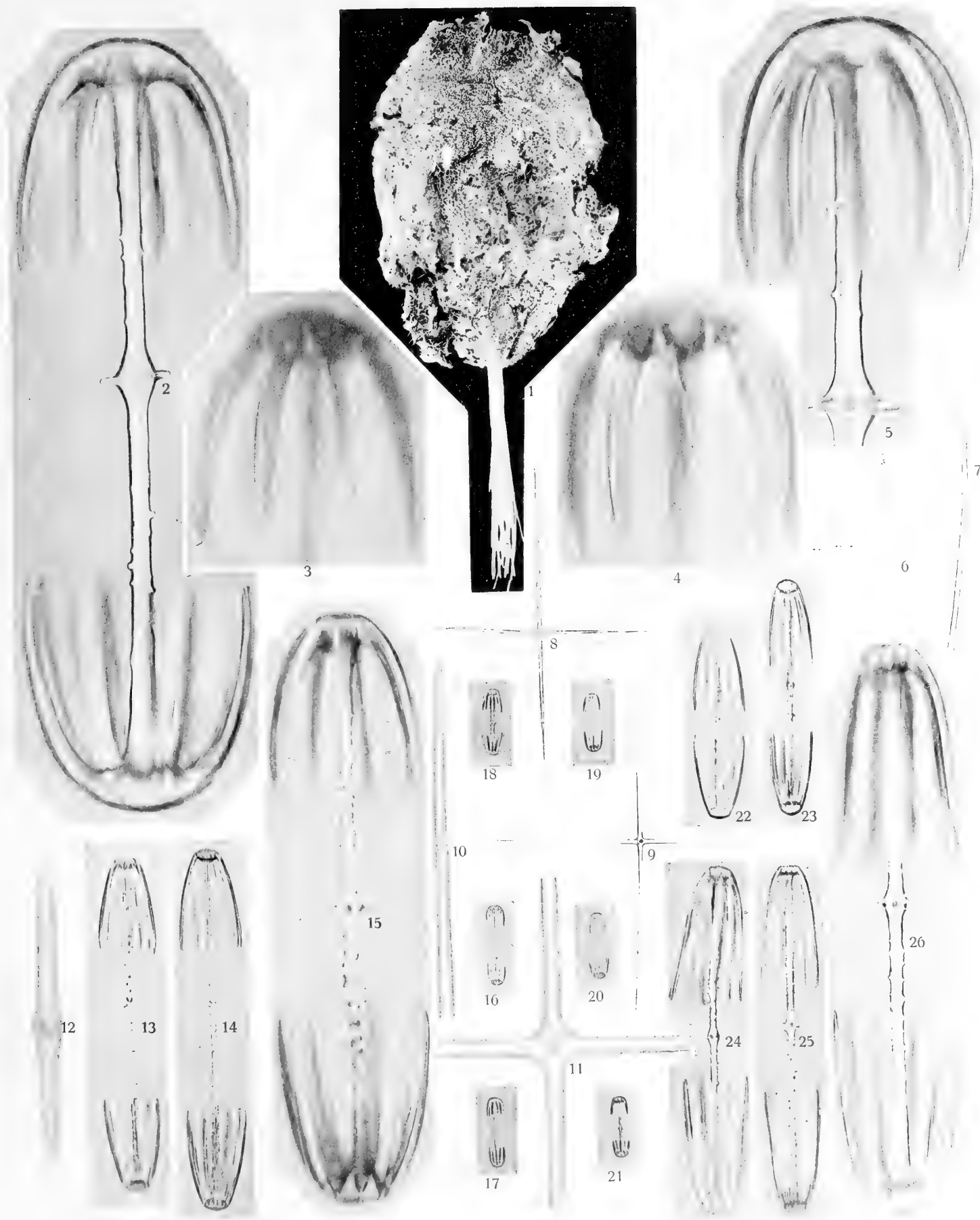


Fig. 1—26 *Hyalonema (Hyalonema) tenuifusum* n. sp. 1—7, 9, 13—17 specimen a; 8, 10—12, 13—26 specimen b.





PLATE 68.

PLATE 68.

**Hyalonema (Hyalonema) tenuifusum** LENDENFELD.

Figs. 1, 3-10, 20, 22, 23, 25 — specimen b.  
Figs. 2, 11-19, 21, 24 — specimen a.

- 1.— The end-part of an anchor-tooth of a large macramphidisc of specimen b; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 2-4.— Gastral (and canalar ?) pinules; magnified 300:
  - 2, of specimen a; phot. Zeiss, apochr. 16, compens. oc. 12;
  - 3, 4, of specimen b; phot. Zeiss, apochr. 8, compens. oc. 12.
- 5, 6.— Micramphidiscs of specimen b; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 7-9.— Microhexactine-derivates of specimen b; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 10, 11.— Fairly regular microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - 10, of specimen b;
  - 11, of specimen a.
- 12-15.— Microhexactine-derivates of specimen a; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 16, 17.— Minute centrotyle amphioxes of specimen a; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 18-21.— Side-views of large dermal pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 6:
  - 18, 20, 21, pentactine pinules;
  - 19, a hexactine pinule;
    - 18, 19, 21, of specimen a;
    - 20, of specimen b.
- 22, 23.— Parts of the shafts of two small macramphidiscs of specimen b; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 24.— Side-view of a small pentactine dermal pinule of specimen a; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 25.— Apical view of the lateral rays of a dermal pinule of specimen b; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.

**Hyalonema (Hyalonema) sp.**

Figs. 26-33. Station 4656.

- 26.— View of the specimen; reduced 100:91; phot. Zeiss, anastig. 480/412 mm.
- 27, 28.— Rhabd acanthophores; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 29, 30.— Two microhexactines:
  - 29, magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6;
  - 30, magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 31-33.— Tetractine acanthophores; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.

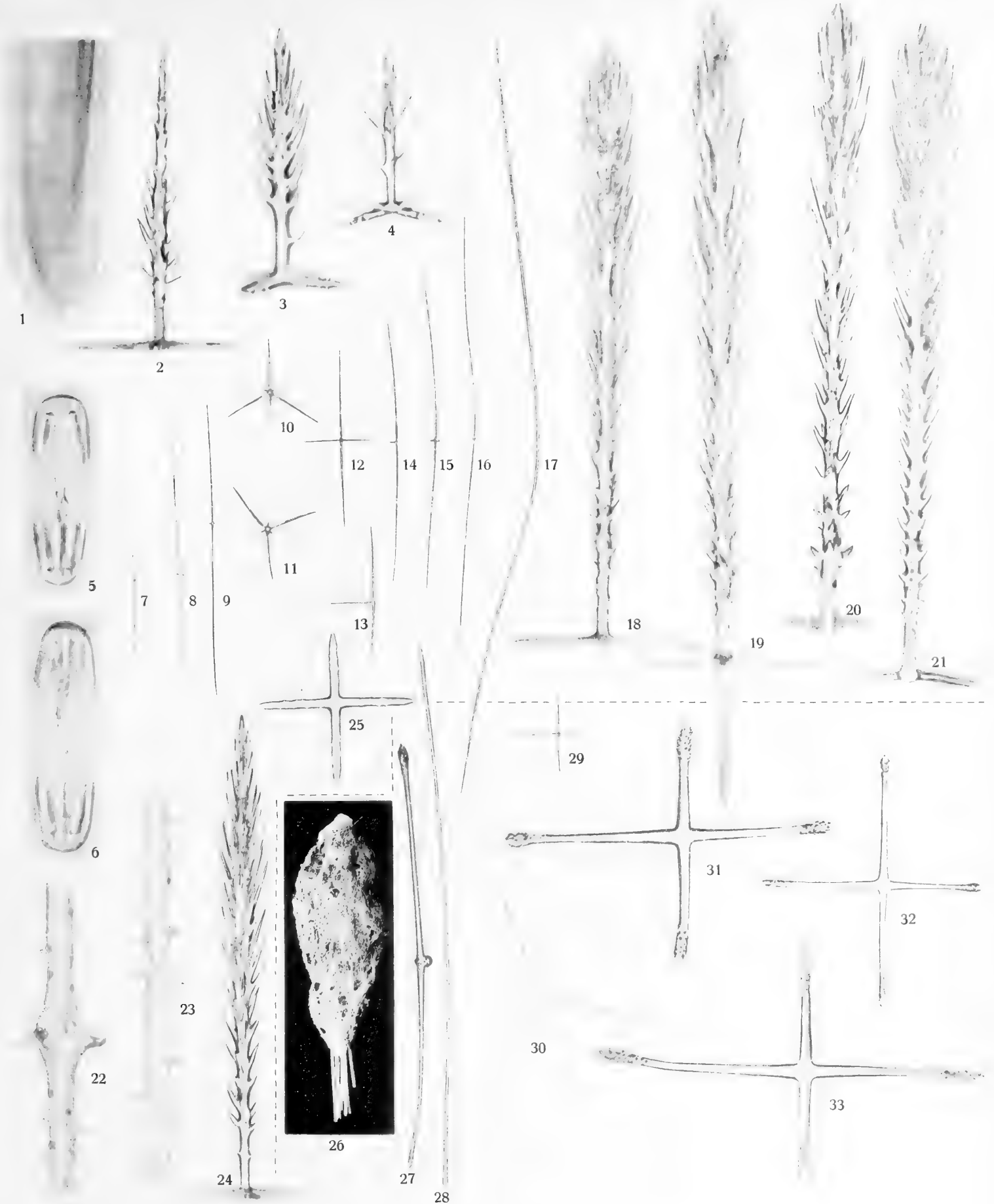


Fig. 1—25 *Hyalonema (Hyalonema) tenuifusum* n. sp. 1, 3—10, 20, 22, 23, 25 specimen b; 2, 11—19, 21, 24, specimen a.

Fig. 26—33 *Hyalonema (Hyalonema)* spec. from station 4656.



PLATE 69.

PLATE 69.

**Hyalonema (Hyalonema) sp.**

Figs. 1-5. Station 4656.

- 1, 2.— Pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 6.  
3-5.— Amphidiscs; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.

**Hyalonema (Hyalonema) tylostylum LENDENFELD.**

Figures 6-25.

- 6.— A hexactine megasclere; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.  
7.— A hypodermal pentactine; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.  
8, 9.— Normal tylostyles; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
10.— The tyle-bearing part of an abnormal tylostyle; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
11-13.— Amphiox megascleres; magnified 50; phot. Zeiss, planar 20 mm., compens. oc. 6.  
14-25.— Amphidiscs and parts of such; magnified 500:  
14, a large macramphidisc; phot. Zeiss, apochr. 8, compens. oc. 12;  
15-18, micramphidiscs; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
19, centrum and one anchor of a large macramphidisc; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
20, a small macramphidisc; phot. Zeiss, apochr. 4, compens. oc. 12;  
21, a small macramphidisc; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
22, 23, small macramphidiscs; phot. Zeiss, apochr. 4, compens. oc. 6;  
24, 25, the central tyle of the shaft of two large macramphidiscs; phot. Zeiss, apochr. 8, compens. oc. 12.

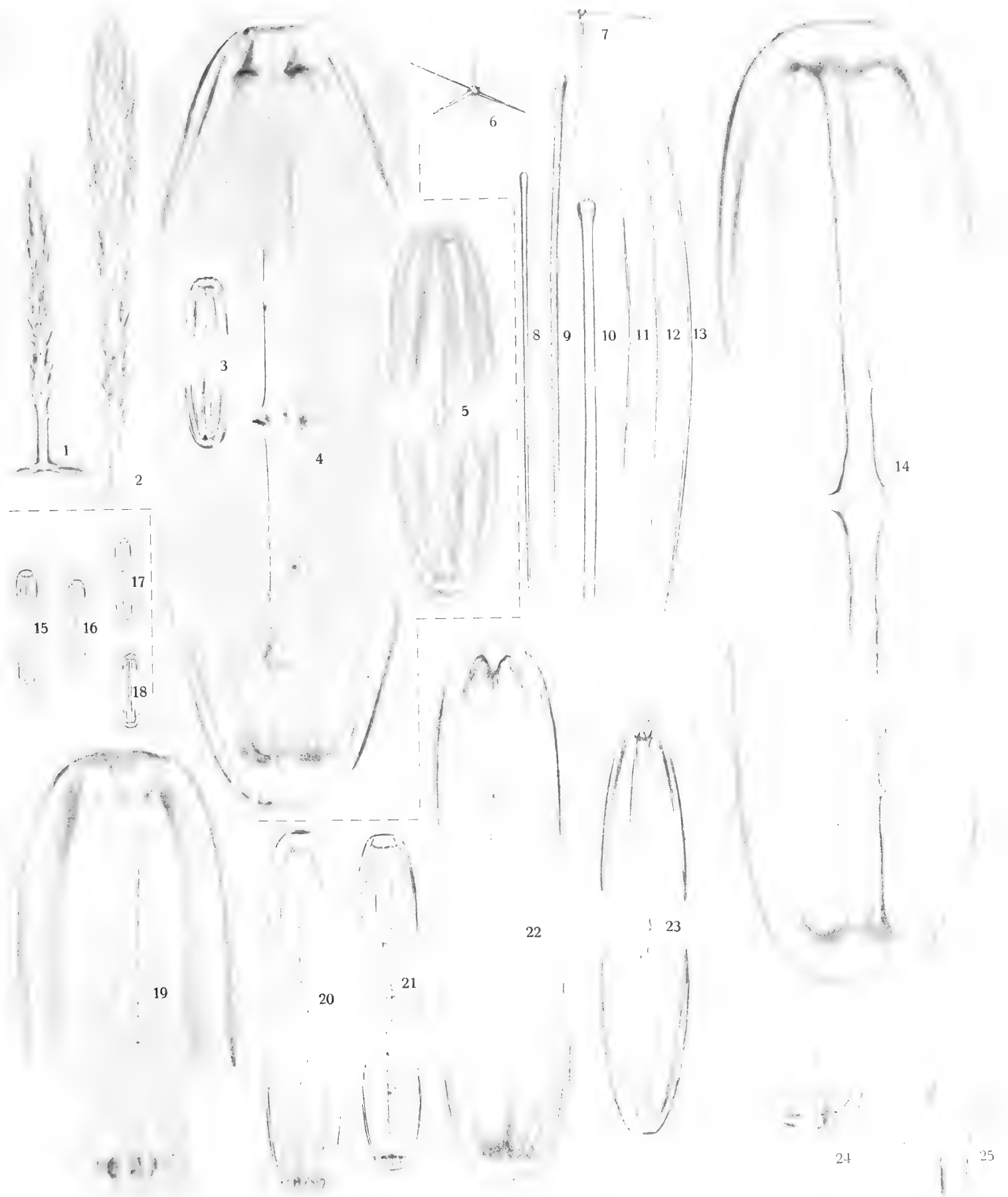


Fig. 1-5 *Hyalonema* (*Hyalonema*) spec. from station 4656.

Fig. 6-25 *Hyalonema* (*Hyalonema*) *tylostylum* n. sp.





PLATE 70.

PLATE 70.

**Hyalonema (Hyalonema) tylostylum** LENDENFELD.

Figures 1-10.

- 1, 2.— Dermal pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 3.— Part of a radial section through the superficial part of the sponge and the pinule-fur; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, a large macramphidisc; b, dermal pinules.
- 4.— A microhexactine; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 5.— Group of spicules in a centrifuge spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
a, microhexactines; b, a micropentactine; c, a micramphidisc.
- 6.— View of the smaller specimen; reduced 100:91; phot. Zeiss, anastig. 480/412 mm.
- 7.— A microhexactine; magnified 200; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 8.— Surface view of the dermal pinule-fur; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 9, 10.— Gastral pinules; magnified 300:  
9, phot. Zeiss, apochr. 8, compens. oc. 12;  
10, phot. Zeiss, apochr. 4, compens. oc. 6.

**Hyalonema (Prionema) pinulifusum** LENDENFELD.

Figures 11-24.

- 11-24.— Pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
11-14, small, probably canalaria;  
15-19, large;  
20-24, medium.

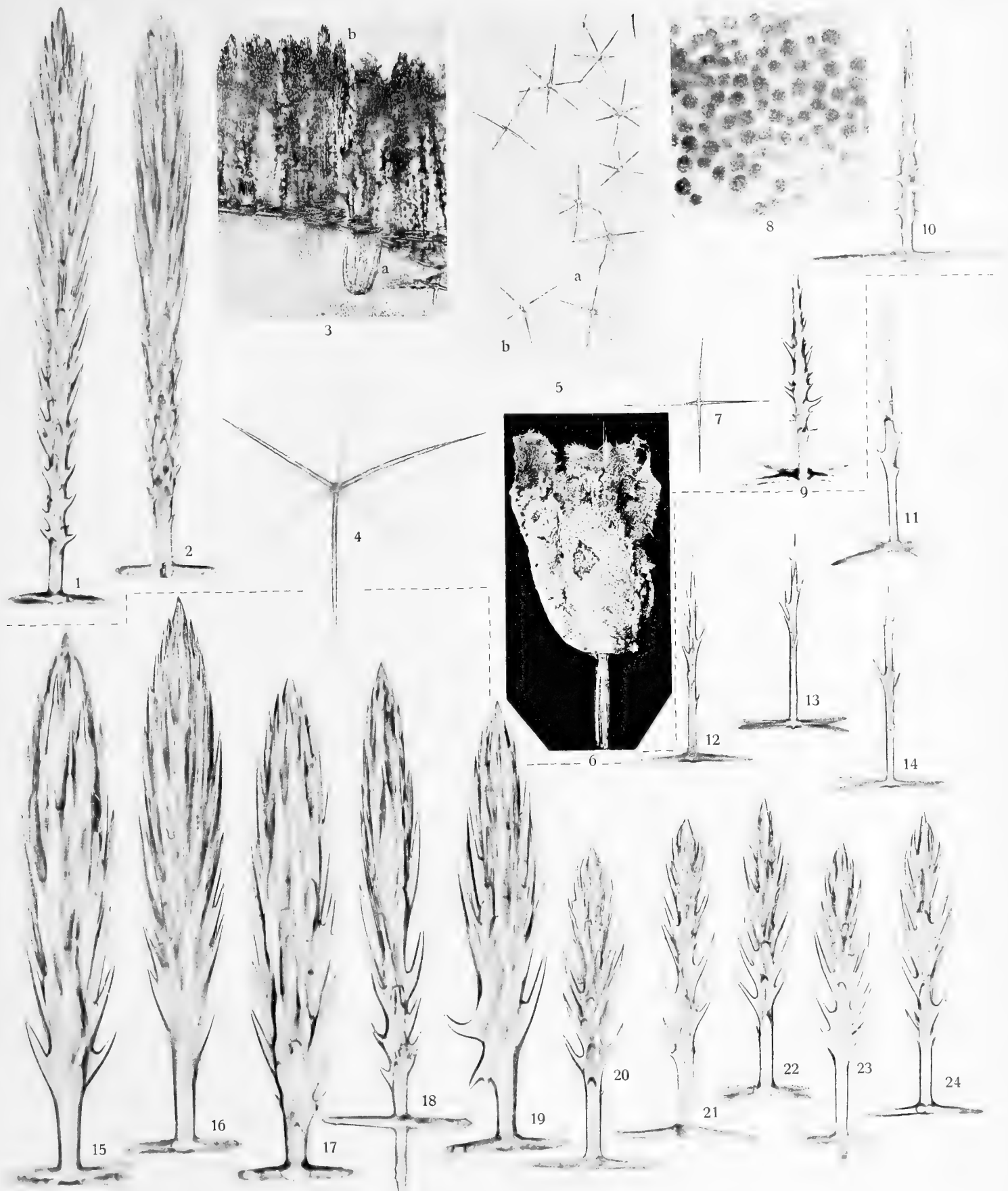


Fig. 1—10 *Hyalonema (Hyalonema) tylostylum* n. sp.  
Fig. 11—24 *Hyalonema (Prionema) pinulifusum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.

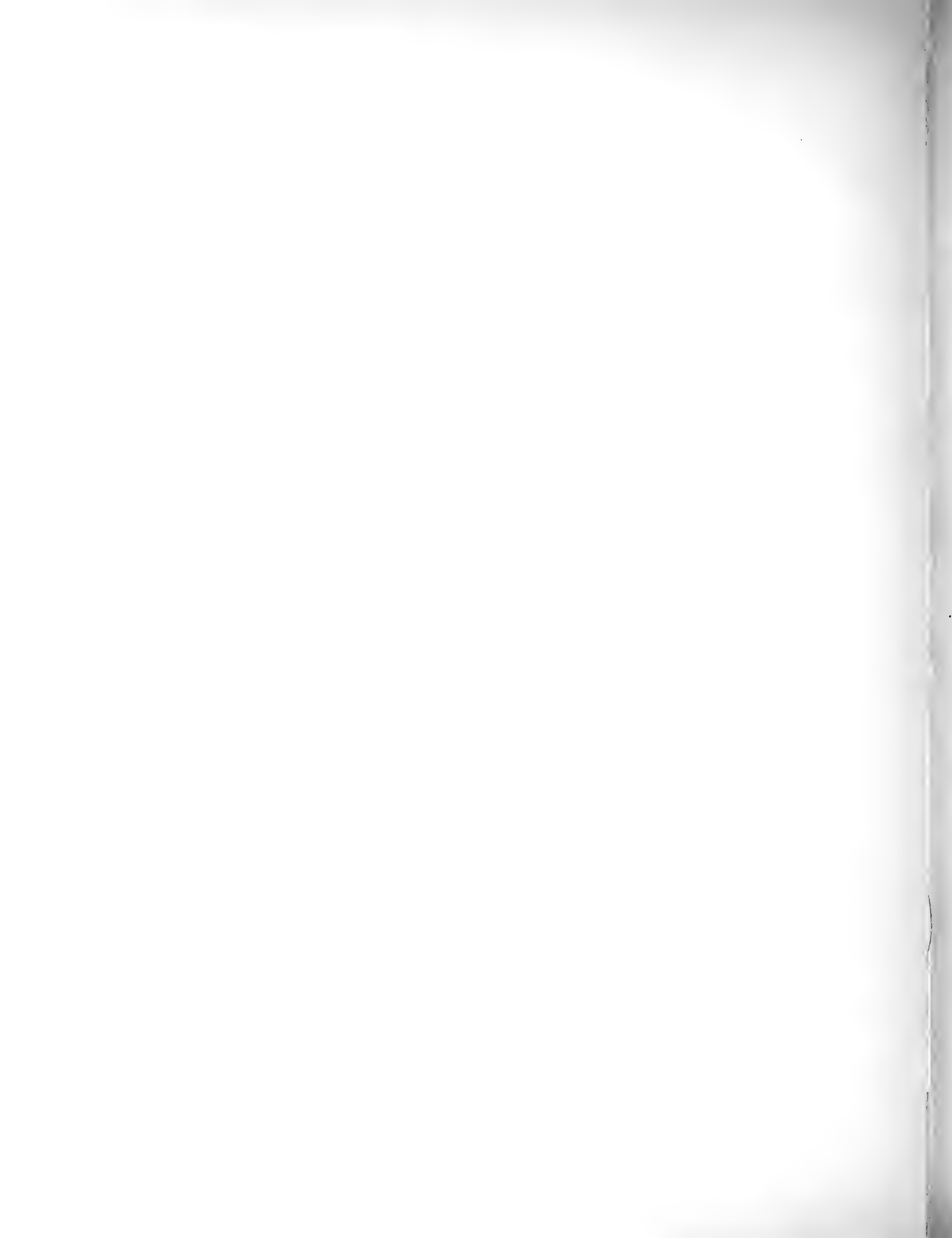


PLATE 71.

PLATE 71.

**Hyalonema (Prionema) pinulifusum** LENDENFELD.

Figures 1-11.

- 1-3.— A microhexactine; magnified 500; phot. Zeiss. H. I. apochr. 2, compens. oc. 6:  
1, focussed high (on the tips of the three upwardly directed rays); 2, focussed intermediate (on the centre of the spicule); 3, focussed low (on the tips of the three downwardly directed rays).
- 4.— Part of a microhexactine; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 5-8.— Macramphidises and parts of such; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6:  
5, a whole one;  
6, 7, the centrum and one anchor of two others;  
8, a tooth seen nearly *en face*.
- 9.— Group of microhexactines from a spicule-preparation; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 10.— A micropentactine; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 11.— The tip of the distal ray of a large pinule; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.

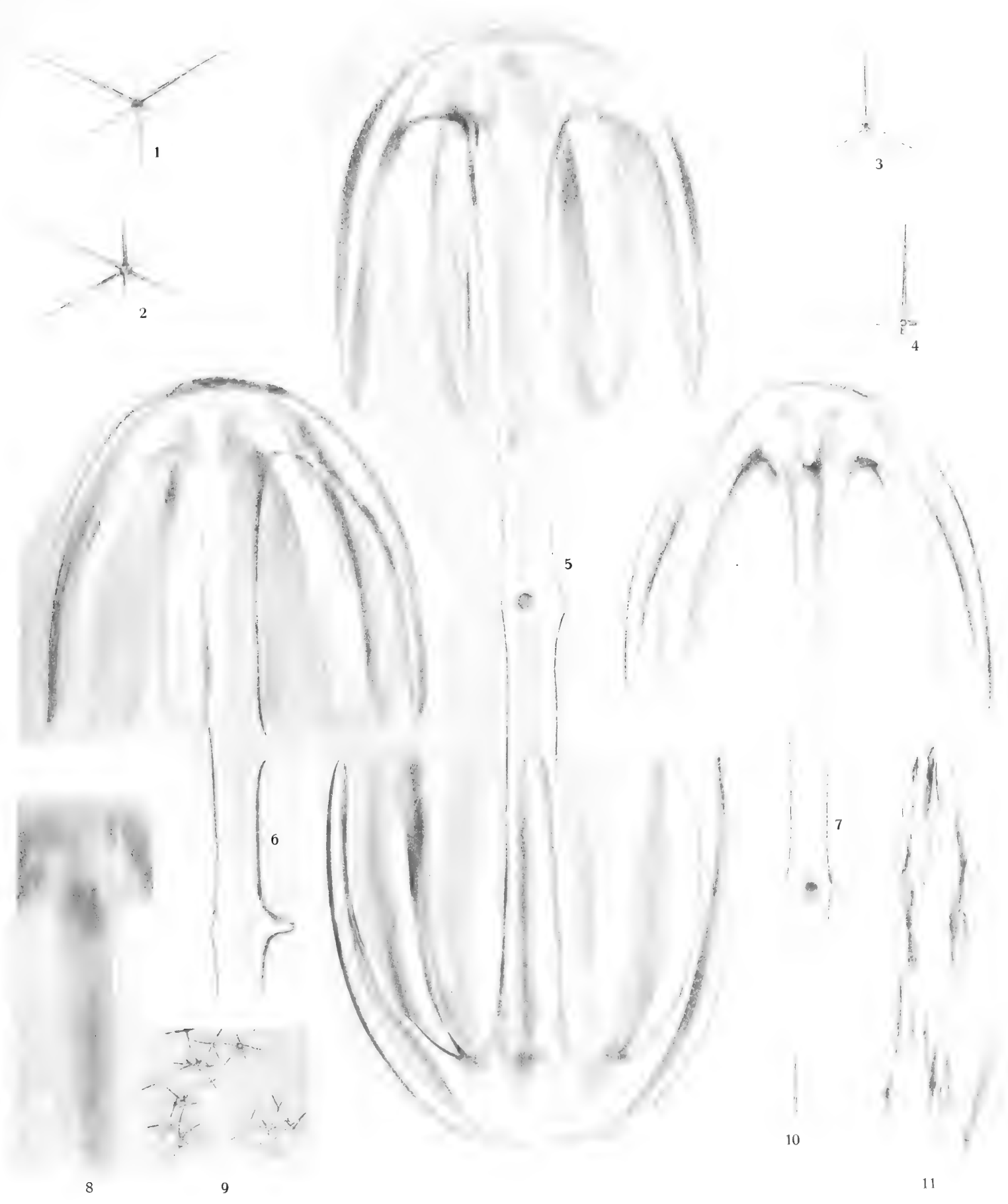


Fig. 1—11 *Hyalonema (Prionema) pinulifusum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 72.

PLATE 72.

**Hyalonema (Prionema) pinulifusum** LENDENFELD.

Figures 1-15.

- 1, 2.— A large mesamphidisc with serrated teeth; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6:  
1, focussed high (on the upper anchor-teeth); 2, focussed lower (on the axis of the shaft).  
3-8.— Mesamphidiscs with smooth teeth, and parts of such; magnified 500; phot. Zeiss, apochr. 4,  
compens. oc. 12:  
3, a large one;  
4, 5, the centrum and one anchor of two large ones;  
6-8, small ones.  
9-15.— Micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
9-14, small ones with long anchors;  
15, a large one with short anchors.

**Hyalonema (Prionema) agujanum tenuis** LENDENFELD.

Figs. 16, 22, 26 — form B.  
Figs. 17-21, 23-25, 27 — form A.

- 16-18.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
16, of form B;  
17, 18, of form A.  
19.— A hypodermal pentaactine of form A; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.  
20.— Part of an axial, longitudinal section of form A showing the gastral pinule-fur; magnified 100;  
phot. Zeiss, apochr. 16, compens. oc. 6.  
21-25.— Pinules; magnified 300:  
21, 23-25, of form A; phot. Zeiss, apochr. 4, compens. oc. 6;  
22, of form B; phot. Zeiss, apochr. 8, compens. oc. 12.  
26, 27.— Hexactine megascleres; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
26, of form B;  
27, of form A.

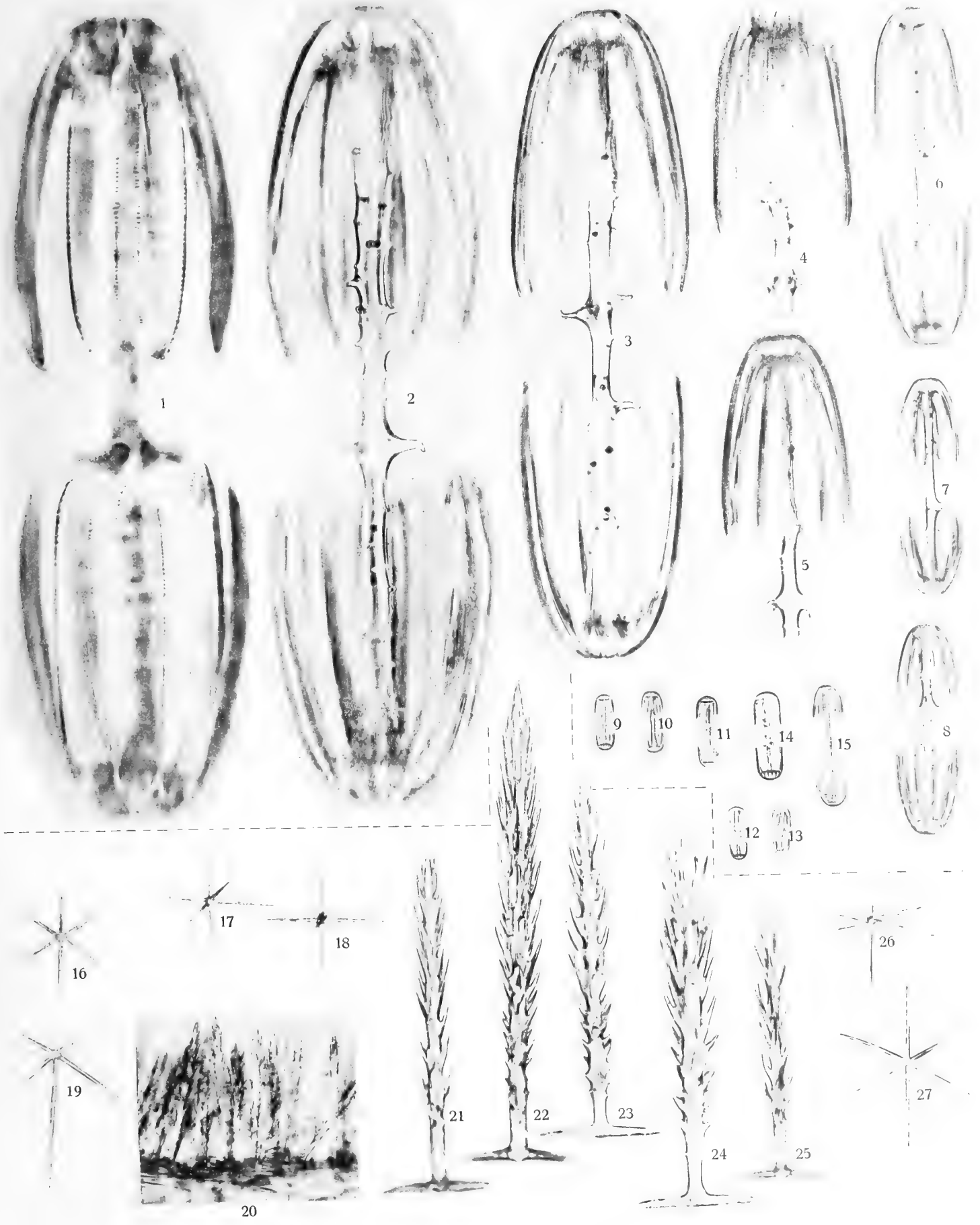


Fig. 1—15 *Hyalonema (Prionema) pinulifusum* n. sp.  
 Fig. 16—27 *Hyalonema (Prionema) agujanum* n. sp. var. *tenuis*. 16, 22, 26 form B; 17—21, 23—25, 27 form A.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 73.

PLATE 73.

**Hyalonema (Prionema) agujanum tenue** LENDENFELD.

Figs. 1-6 — form A.

Fig. 7 — form B.

- 1.— Front-view of the tip of a tooth of a macramphidisc of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 2, 3.— Front-view of the tip of a tooth of a macramphidisc of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
2, focussed lower; 3, focussed higher.
- 4.— Half of a macramphidisc of form A; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 5-7.— Macramphidises; magnified 500:  
5, 6, of form A;  
7, of form B;  
5, phot. Zeiss, apochr. 8, compens. oc. 8;  
6, 7, phot. Zeiss, apochr. 4, compens. oc. 6.

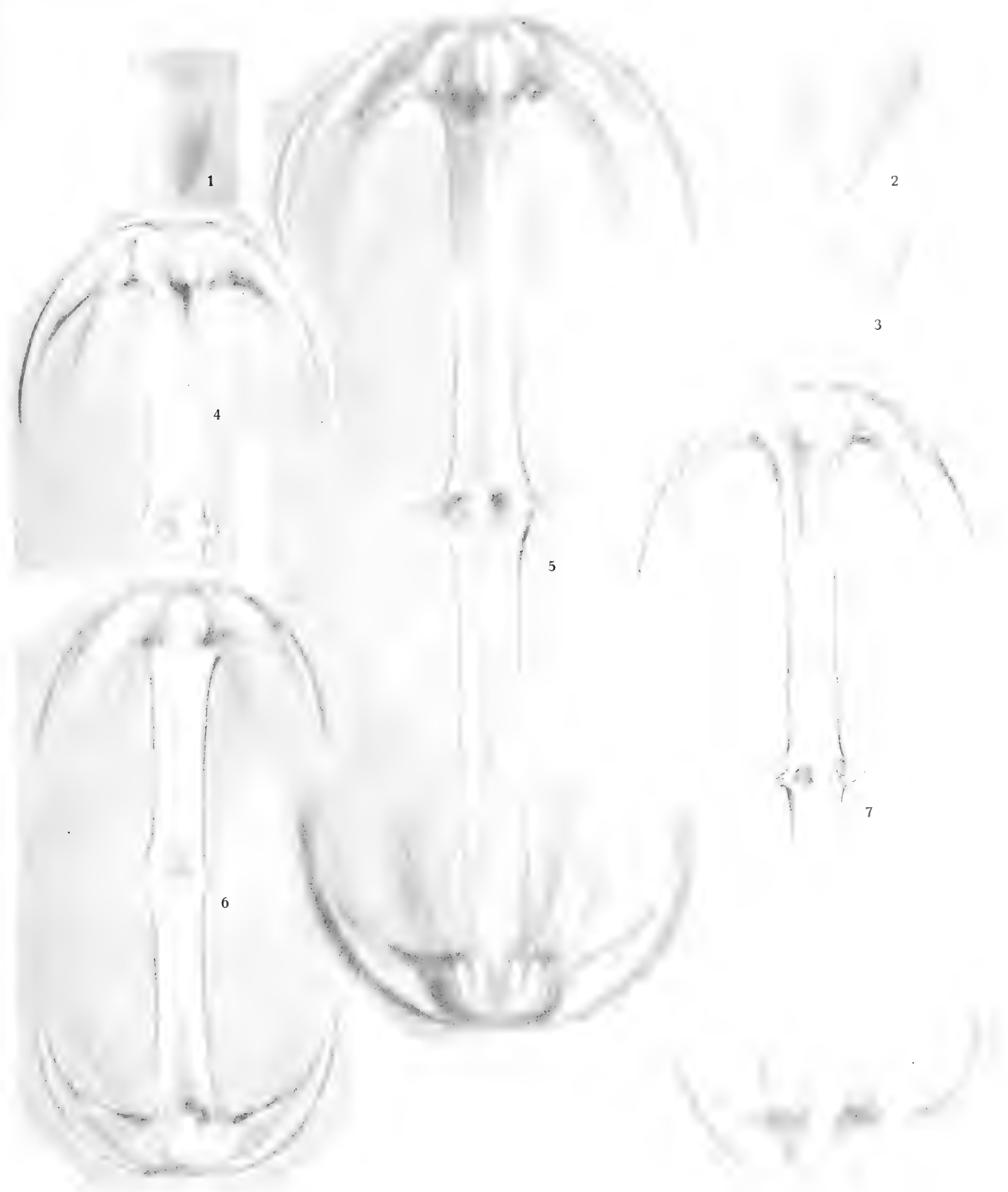


Fig. 1—7 *Hyalonema (Prionema) agujanum* n. sp. var. *tenuis*. 1—6 form A; 7 form B.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 74.

PLATE 74.

**Hyalonema (Prionema) agujanum tenuis** LENDENFELD.

Figs. 1-5, 8 — form A.

Figs. 6, 7, 9 — form B.

- 1, 2.— Two anchor-teeth of large serrated mesamphidiscs of form A; magnified 500:
  - 1, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;
  - 2, phot. Zeiss, apochr. 4, compens. oc. 12.
- 3, 4.— A large serrated mesamphidisc of form A; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6:
  - 3, focussed lower (the centre of the shaft in focus); 4, focussed higher (the uppermost teeth in focus).
- 5.— A large serrated mesamphidisc of form A; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6.
- 6, 7.— A large serrated mesamphidisc of form B; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:
  - 6, focussed lower (the centre of the shaft in focus); 7, focussed higher (the uppermost teeth in focus).
- 8, 9.— The terminal anchors of two large serrated mesamphidiscs with the uppermost teeth in focus; magnified 500:
  - 8, of form A; phot. Zeiss, H. I. apochr. 2, compens. oc. 6;
  - 9, of form B; phot. Zeiss, apochr. 8, compens. oc. 12.

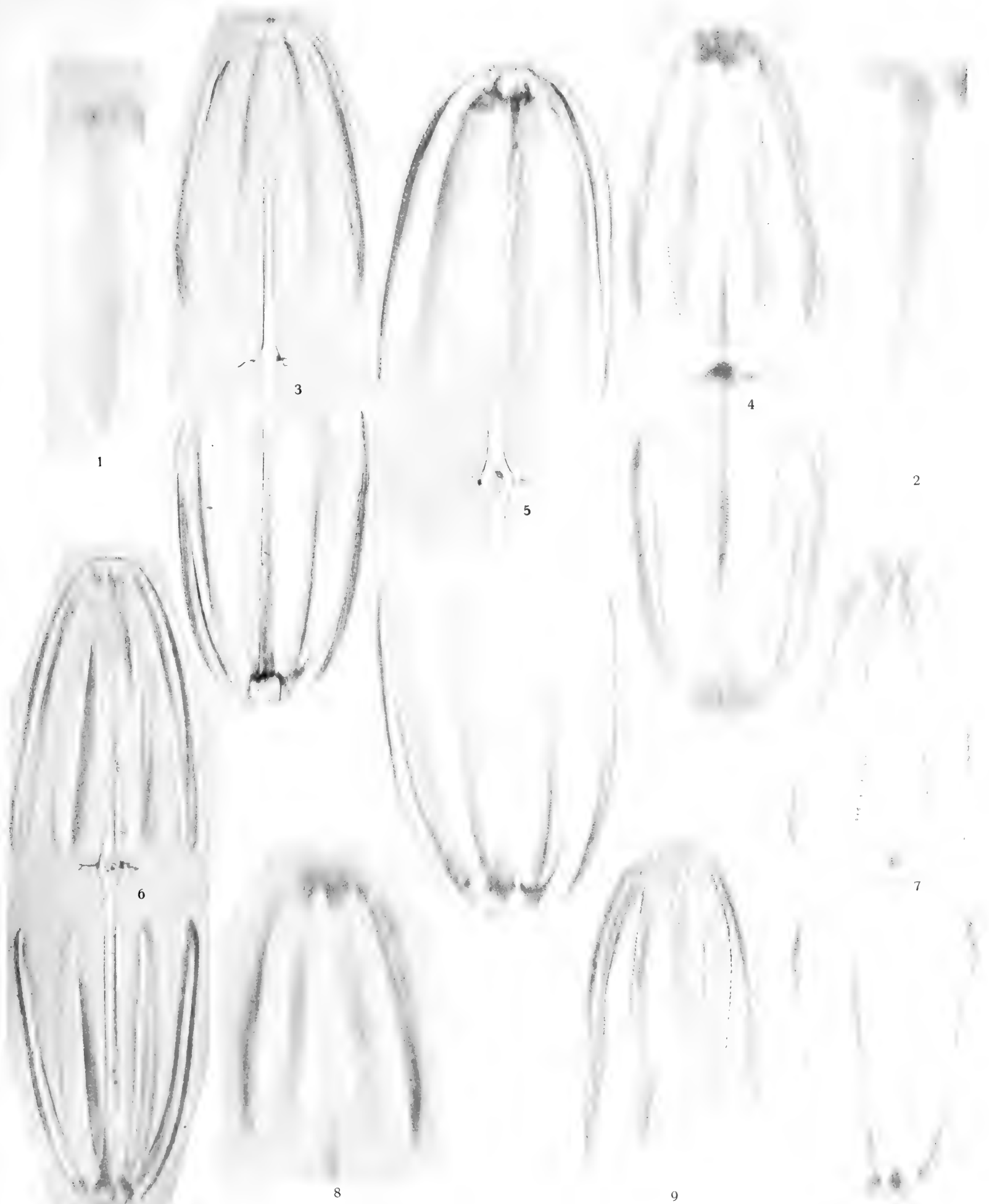


Fig. 1—9 *Hyalonema (Prionema) agujanum n. sp. var. tenueis*. 1—5, 8 form A. 6, 7, 9 form B.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 75.

PLATE 75.

**Hyalonema (Prionema) agujanum tenue** LENDENFELD.

Figs. 1-13, 15, 17, 19-27, 29-37 — form A.  
Figs. 14, 16, 18, 28 — form B.

- 1, 2.— A small serrated mesamphidisc of form A; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:  
1, focussed higher (the uppermost teeth in focus); 2, focussed lower (the centre of the shaft in focus).
- 3-21.— Macramphidiscs; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6:  
3-13, 15, 17, 19-21, of form A;  
14, 16, 18, of form B.
- 22, 23.— A small serrated mesamphidisc of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
22, focussed higher (the uppermost teeth in focus); 23, focussed lower (the centre of the shaft in focus).
- 24-27.— Micramphidiscs of form A; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 28-30.— Three specimens; natural size; phot. Zeiss, anastig. 480/412 mm.:  
28, form B;  
29, 30, form A.
- 31-34.— Two micramphidiscs of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
31-33, a smaller one:  
31, focussed high; 32, focussed intermediate; 33, focussed low;  
34, a larger one.
- 35-37.— An abnormal macramphidisc of form A; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:  
35, focussed low; 36, focussed intermediate; 37, focussed high.

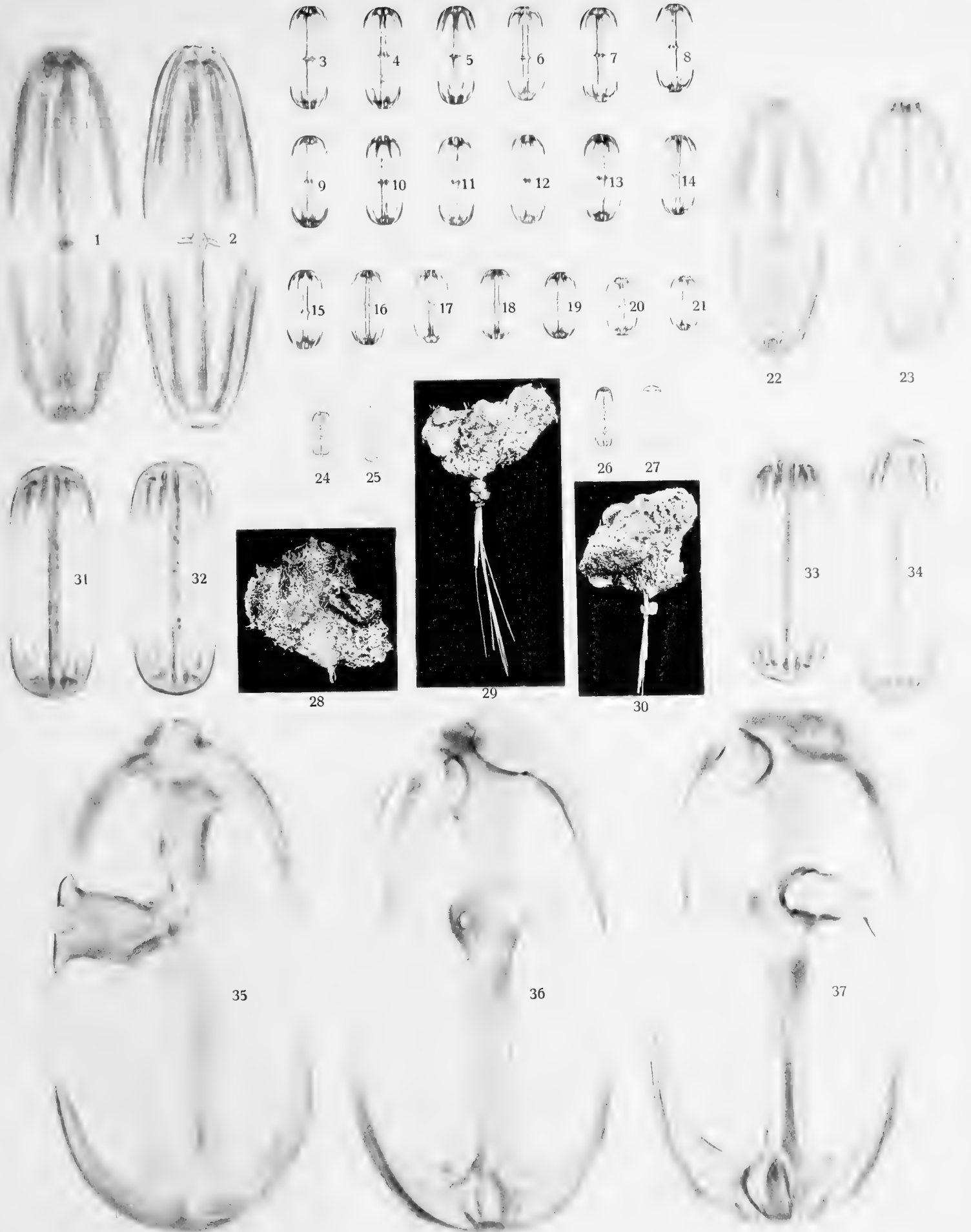


Fig. 1—37 *Hyalonema (Prionema) agujanum* n. sp. var. *tenuis*. 1—13, 15, 17, 19—27, 29—37 form A; 14, 16, 18, 28 form B.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 76.

PLATE 76.

**Hyalonema (Prionema) agujanum tenue** LENDENFELD.

Figs. 1-7, 11, 12, 15-36 — form A.  
Figs. 8-10, 13, 14 — form B.

- 1.— The centrum and one ray of a microhexactine of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 2, 3.— Micramphidiscs of form A; magnified 500:  
2, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
3, phot. Zeiss, apochr. 4, compens. oc. 12.
- 4-6.— Portions of transverse sections of a Palythoa polyp attached to the stalk of a specimen of form A; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 7.— Axial, longitudinal section through the upper part of the stalk with Palythoa attached, and the lower part of the body of form A; magnified 6; phot. Zeiss, planar 50 mm.
- 8-14.— Acanthophores from the sponge; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
8, a small regular tetractine of form B;  
9, a large regular pentactine of form B;  
10, a large irregular tetractine of form B;  
11, 12, small regular tetractines of form A;  
13, a large regular tetractine of form B;  
14, a large diactine of form B.
- 15-32.— Acanthophores and other sponge-spicules formed in a Palythoa polyp on the stalk of a specimen of form A; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
15, 16, short diactines, much more spiny at the ends than in the middle;  
17-20, short and stout rod-shaped spicules; uniformly spined throughout;  
21, 22, small stout triactines; uniformly spined throughout;  
23-30, small stout tetractines, uniformly spined throughout;  
31, a small only terminally spined tylostyle;  
32, a minute pentactine.
- 33.— The tip of an anchor-tooth of a large serrated mesamphidisc of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 34.— Transverse section through the upper part of a Palythoa polyp attached to the stalk of a specimen of form A; magnified 30; phot. Zeiss, planar 20 mm.
- 35, 36.— The end-part of an anchor-tooth of a large mesamphidisc of form A; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
35, focussed higher; 36, focussed lower.



Fig. 1-36 *Hyalonema (Prionema) agujanum* n. sp. var. *tenuis*. 1-7, 11, 12, 15-36 form A; 8-10, 13, 14 form B.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.

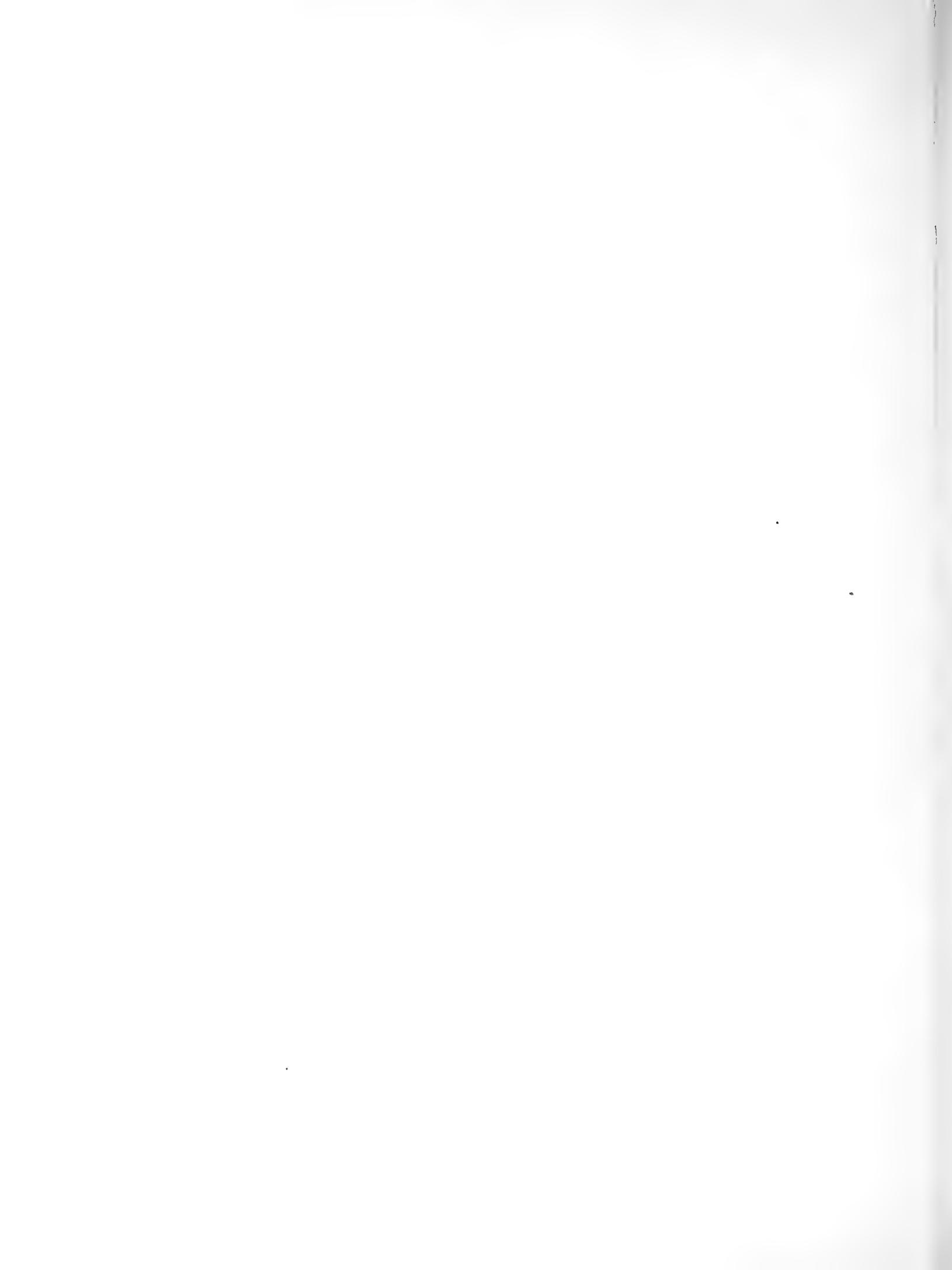


PLATE 77.

PLATE 77.

**Hyalonema (Prionema) agujanum lata** LENDENFELD.

Figures 1-10.

- 1.— The greater part of the shaft and one terminal anchor of a macramphidise; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 2, 3.— Half (one terminal anchor) of an ordinary, large serrated mesamphidise; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 6:  
2, focussed higher (on the uppermost teeth); 3, focussed lower (on the shaft).
- 4, 5.— An ordinary, small serrated mesamphidise; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
4, focussed higher (on the uppermost teeth); 5, focussed lower (on the centre of the shaft).
- 6, 7.— A large, broad-anchored mesamphidise; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
6, focussed higher (on the uppermost teeth); 7, focussed lower (on the centre of the shaft).
- 8.— Micramphidise; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 9, 10.— Apical view of a terminal anchor of a macramphidise; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
9, focussed low (on the tips of the teeth); 10, focussed high (on the web connecting the teeth basally).

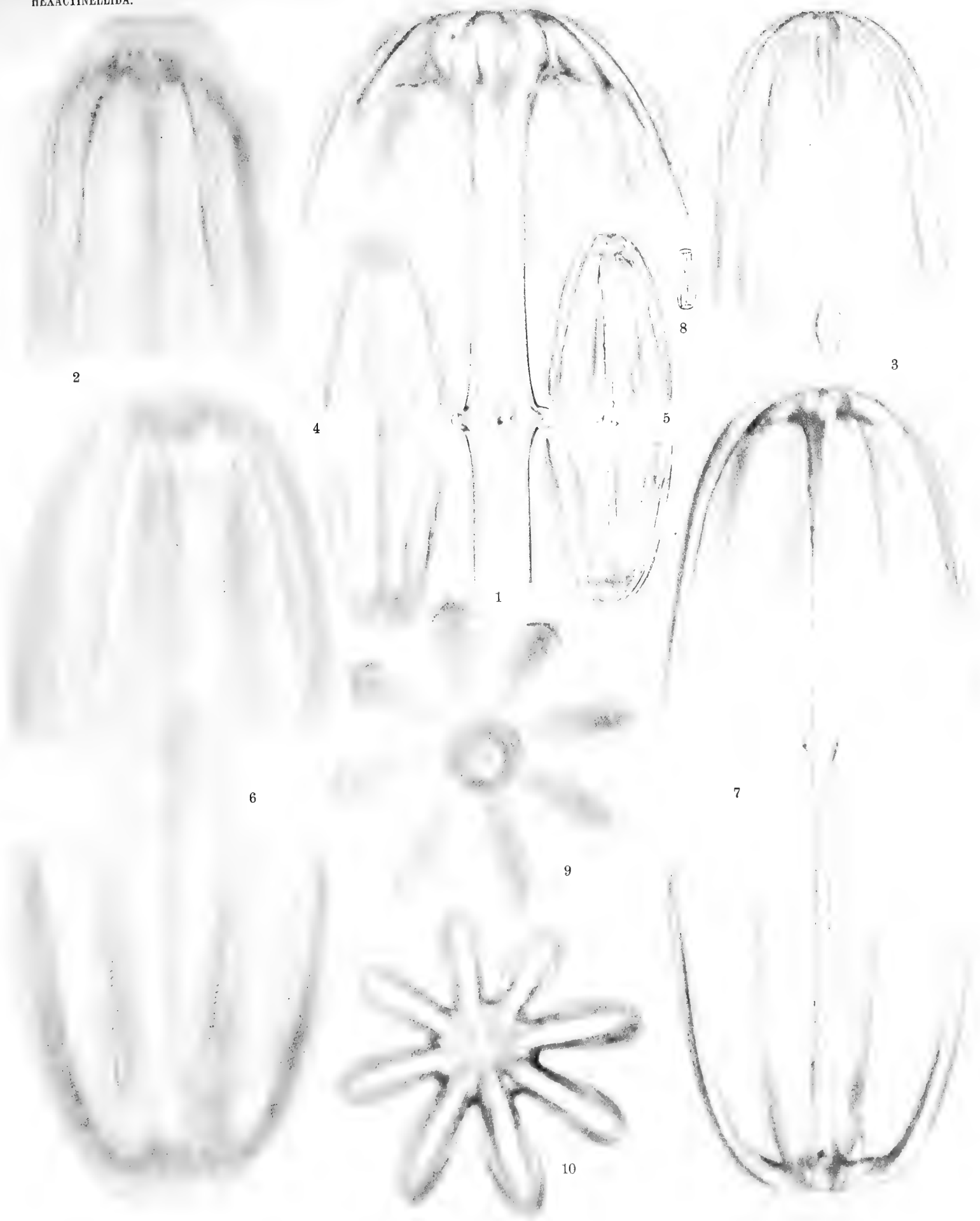


Fig. 1-10 *Hyalonema (Prionema) agujanum* n. sp. var. *lata*.

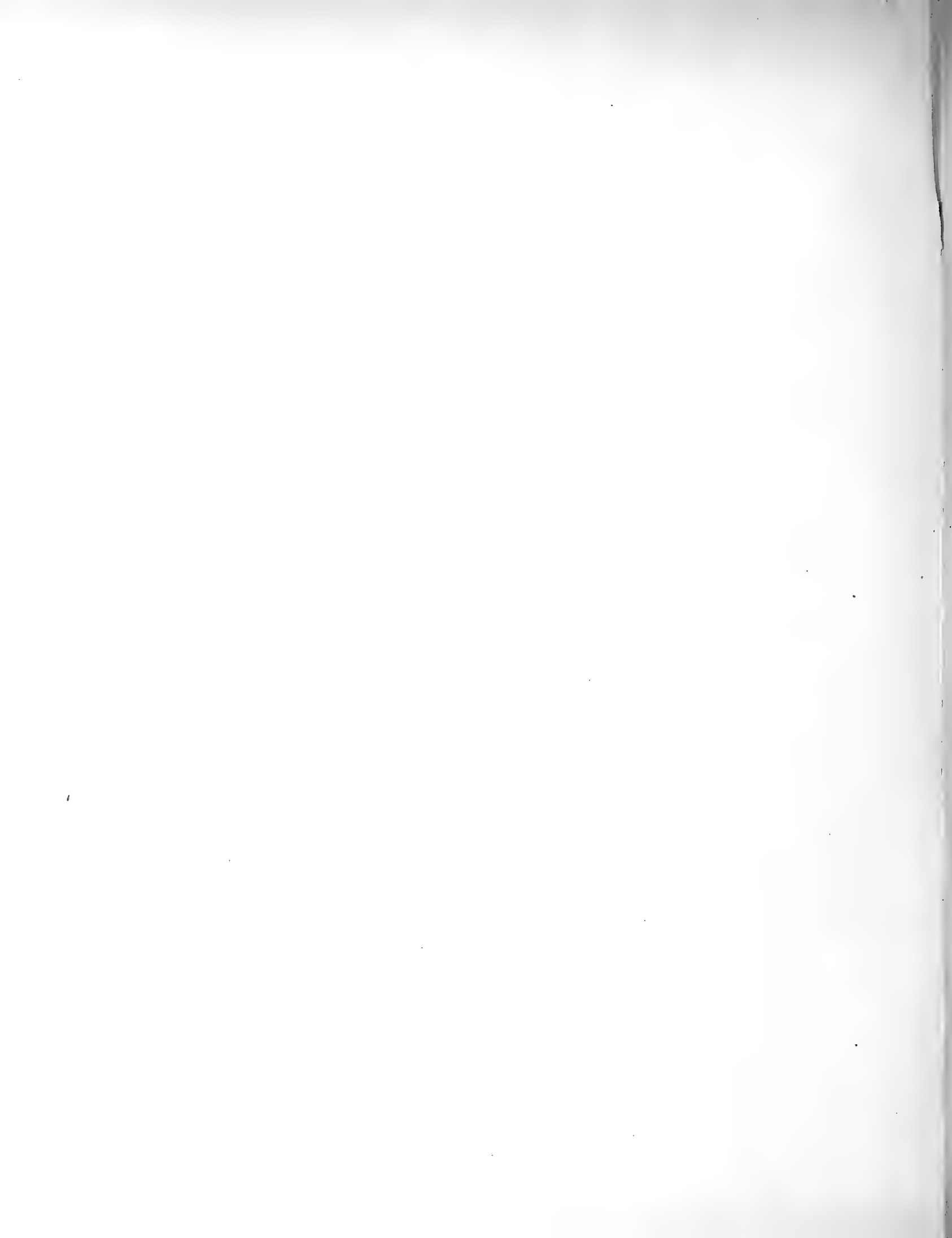




PLATE 78.

PLATE 78.

**Hyalonema (Prionema) agujanum lata** LENDENFELD.

Figures 1-15.

- 1, 2.— Parts of stalk-spicules; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
3.— A diactine pinule; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.  
4.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm.  
5-7.— Microhexactines; magnified 200; phot. Zeiss, apochr. 4, compens. oc. 6.  
8.— A microhexactine; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
9-11.— Pentactine pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.  
12-15.— Macramphidiscs; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.

**Hyalonema (Hyalonema) grandancora** LENDENFELD.

Figures 16-45.

- 16-19.— Macramphidiscs; magnified 50; phot. Zeiss, achr. aa, compens. oc. 6.  
20.— Transverse section through the upper part of a Palythoa polyp attached to the stalk of the sponge; magnified 30; phot. Zeiss, planar 20 mm.  
21-40.— Uniformly and densely spined acanthophores from the Palythoa polyps; attached to the stalk; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
(Each vertical pair of views represents the same spicule; the upper views of the pairs, figs. 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, are focussed high, the views beneath these, figs. 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, are focussed low; thus 21 and 22 represent the same spicule, 23 and 24, and so on).  
41-45.— Pinules; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6:  
42, 43, gastral pinules;  
41, 44, 45, dermal pinules.

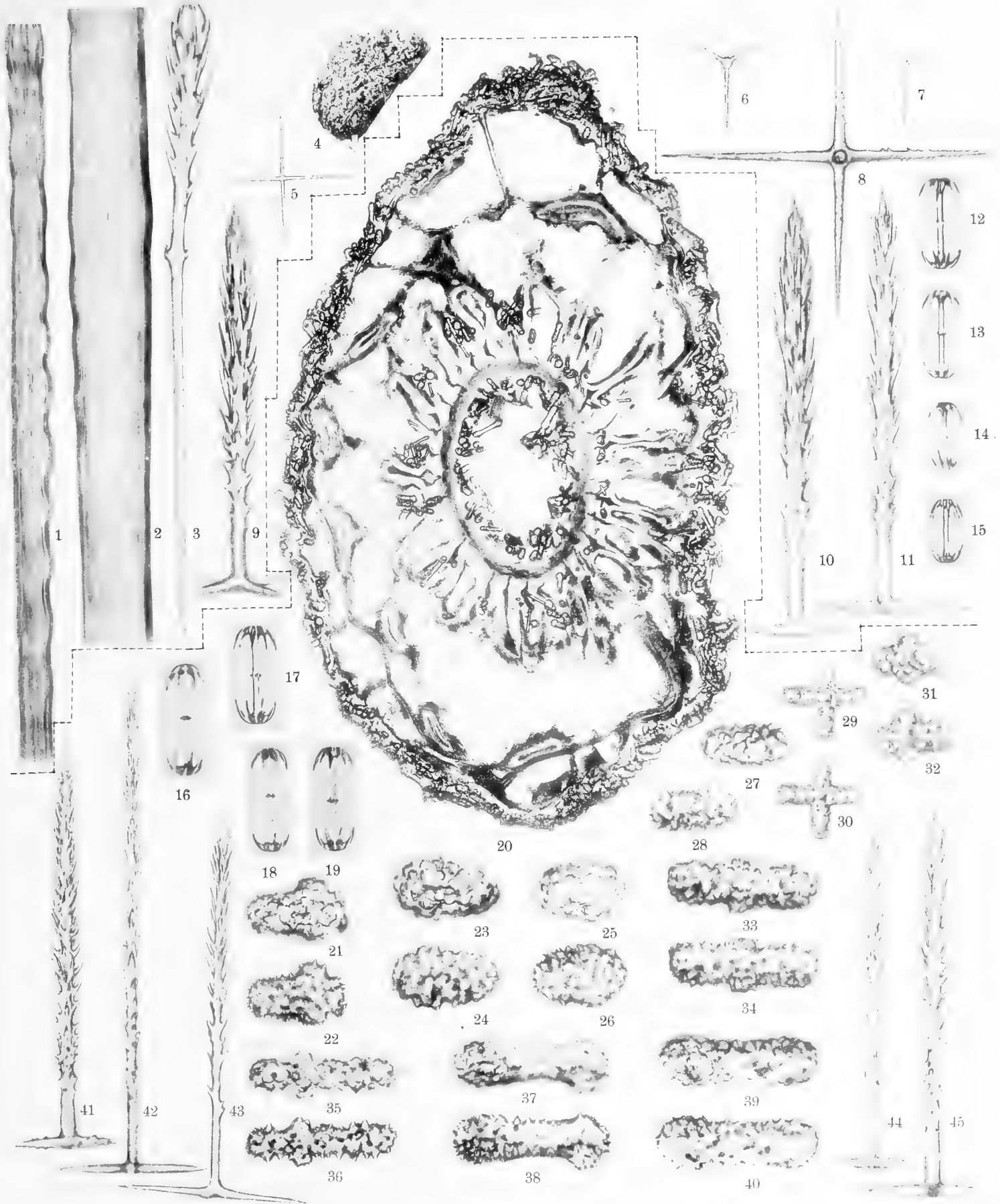


Fig. 1-15 *Hyalonema (Prionema) agujanum* n. sp. var. *lata*.  
 Fig. 16-45 *Hyalonema (Hyalonema) grandancora* n. sp.



PLATE 79.

PLATE 79.

**Hyalonema (Hyalonema) grandancora** LENDENFELD.

Figures 1-26.

- 1, 2.—Macramphidises; magnified 500:  
1, phot. Zeiss, apochr. 8, compens. oc. 12;  
2, phot. Zeiss, apochr. 8, compens. oc. 8.
- 3-11.—Small micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 12.—View of the sponge; reduced 1:0.85; phot. Zeiss, anastig. 480/412 mm.
- 13-19.—Hexactine megascleres; magnified 30; phot. Zeiss, planar 20 mm.
- 20.—Apical view of the lateral ray-cross of a dermal pinule; magnified 300; phot. Zeiss, apochr. 4, compens. oc. 6.
- 21-23.—Microhexactines; magnified 500:  
21, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
22, 23, phot. Zeiss, apochr. 4, compens. oc. 12.
- 24, 25.—Large micramphidises; magnified 500:  
24, phot. Zeiss, apochr. 4, compens. oc. 12;  
25, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 26.—Part of a terminal anchor of a macramphidise; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.

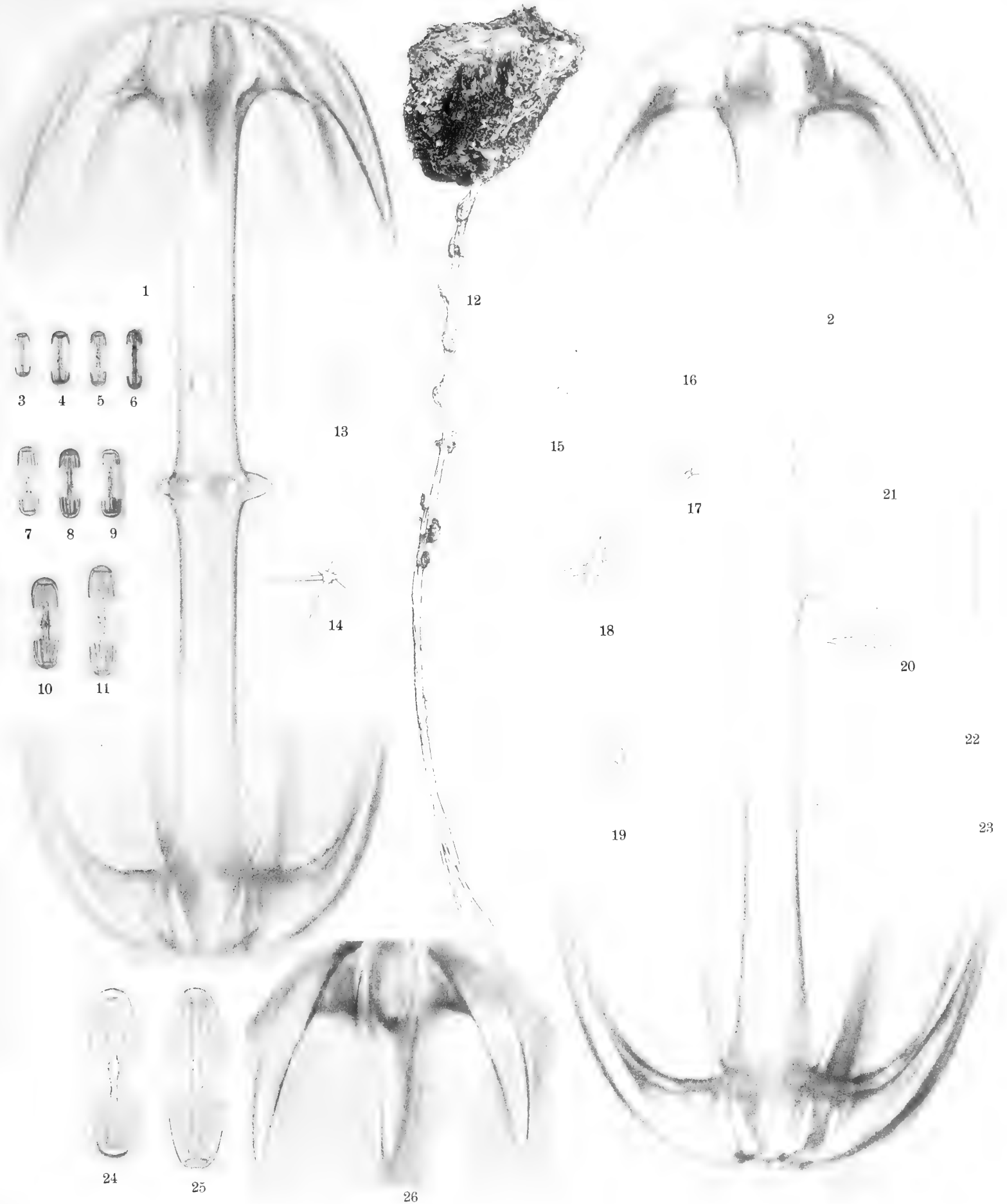


Fig. 1-26 *Hyalonema (Hyalonema) grandancora* n. sp.





PLATE 80.

PLATE 80.

**Hyalonema (Hyalonema) sp.**

Figures 1-16. Station 3684 (A. A. 17).

- 1, 2.— Parts of two macramphidises; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 6.
- 3.— A micramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 4.— A microhexactine; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 5-9.— Macramphidises; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 2.
- 10.— The end-part of an anchor-tooth of a macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 11, 12.— An anchor of a stalk-spicule; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
11, focussed lower (the shaft in focus); 12, focussed higher (the end-parts of the uppermost anchor-teeth in focus).
- 13.— An acanthophore; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 14.— A pentactine pinule with short distal ray; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 15.— Part of a group of diactine pinules *in situ* in a section; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 16.— A pentactine pinule with long distal ray; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.



Fig. 1-16 *Hyalonema (Hyalonema) spec.* from station 3684 [A.A 17].

Lendenfeld photographed



PLATE 81.

PLATE 81.

**Hyalonema (Leptonema) campanula** LENDENFELD.

Figures 1-26.

- 1, 2.— Parts of a diactine pinule; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
1, the middle- and end-parts of the distal ray;  
2, the central part of the spicule. (The lower end of fig. 1 fits on to the upper end of fig. 2).
- 3-6.— Microhexactines; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12:  
3, a larger one, focussed lower; 4, focussed higher; 5, a smaller one, focussed lower; 6, focussed higher.
- 7-10.— Macramphidises, and a part of one, magnified 500:  
7, 8, phot. Zeiss, apochr. 8, compens. oc. 12;  
9, 10, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
7, a macramphidisc with straight shaft;  
8, a macramphidisc with strongly bent shaft;  
9, a macramphidisc with slightly bent shaft, focussed low (on the shaft);  
10, the lower of the two anchors of the spicule represented in fig. 9 focussed higher (on the tips of the upper teeth).
- 11.— Part of a stalk-spicule; magnified 30; phot. Zeiss, planar 20 mm.
- 12, 13.— Two pentactine pinules with long and slender distal ray; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 14.— Part of a group of diactine pinules; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 15.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm.
- 16-18.— Three pentactine pinules with long and slender rays; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 6.
- 19, 20.— Apical views of the lateral rays of two pentactine megascleres; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 2.
- 21, 22.— Micramphidises; magnified 500; phot. Zeiss, apochr. 4, compens. oc. 12.
- 23, 24.— Mesamphidises; phot. Zeiss, apochr. 8, compens. oc. 12.
- 25, 26.— Pentactine pinules with short and stout distal ray from the basal part of the sponge; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
25, a single one;  
26, a group *in situ* in a section.



Fig. 1-26 *Hyalonema (Leptonema) campanula* n. sp.





PLATE 82.

PLATE 82.

**Hyalonema (Oonema) bianchoratum pinulina** LENDENFELD.

Figs. 1-23 — specimen b.

Figs. 24-34 — specimen a.

- 1.— Side-view of specimen b; reduced 1:0.72; phot. Zeiss, anastig. 480/412 mm. (The stalk is broken at its point of origin. It lay loose in the bottle with the sponge-body. It fitted well to a broken stump of a stalk in the latter, and in all probability belonged to the sponge-body. I fixed it to the stump and photographed body and stalk together).
- 2-5.— Parts of microhexactines of specimen b; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 6-9.— Two microhexactines of specimen b; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6: 6, microhexactine focussed lower (on the three lower rays); 7, focussed higher (on the three upper rays); 8, another microhexactine focussed lower (on the three lower rays); 9, focussed higher (on the three upper rays).
- 10-12.— Parts of the centrum and one ray of a microhexactine of specimen b; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 10, focussed high (the centrum and basal part of the ray);
  - 11, focussed lower (the whole ray and the centrum);
  - 12, focussed still lower (the distal part of the ray).
- 13-19.— More or less centrotyle amphioxes from the gastral region of specimen b; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4.
- 20.— Group of microhexactines from a spicule-preparation of specimen b; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 21-34.— Pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:
  - 21-30, 32-34, side-views;
  - 31, apical view of the lateral rays;
    - 21-23, of specimen b;
    - 24-34, of specimen a;
    - 21, 23-28, 34, basal dermal pinules;
    - 22, 31-33, ordinary dermal pinules;
    - 29, 30, gastral pinules.

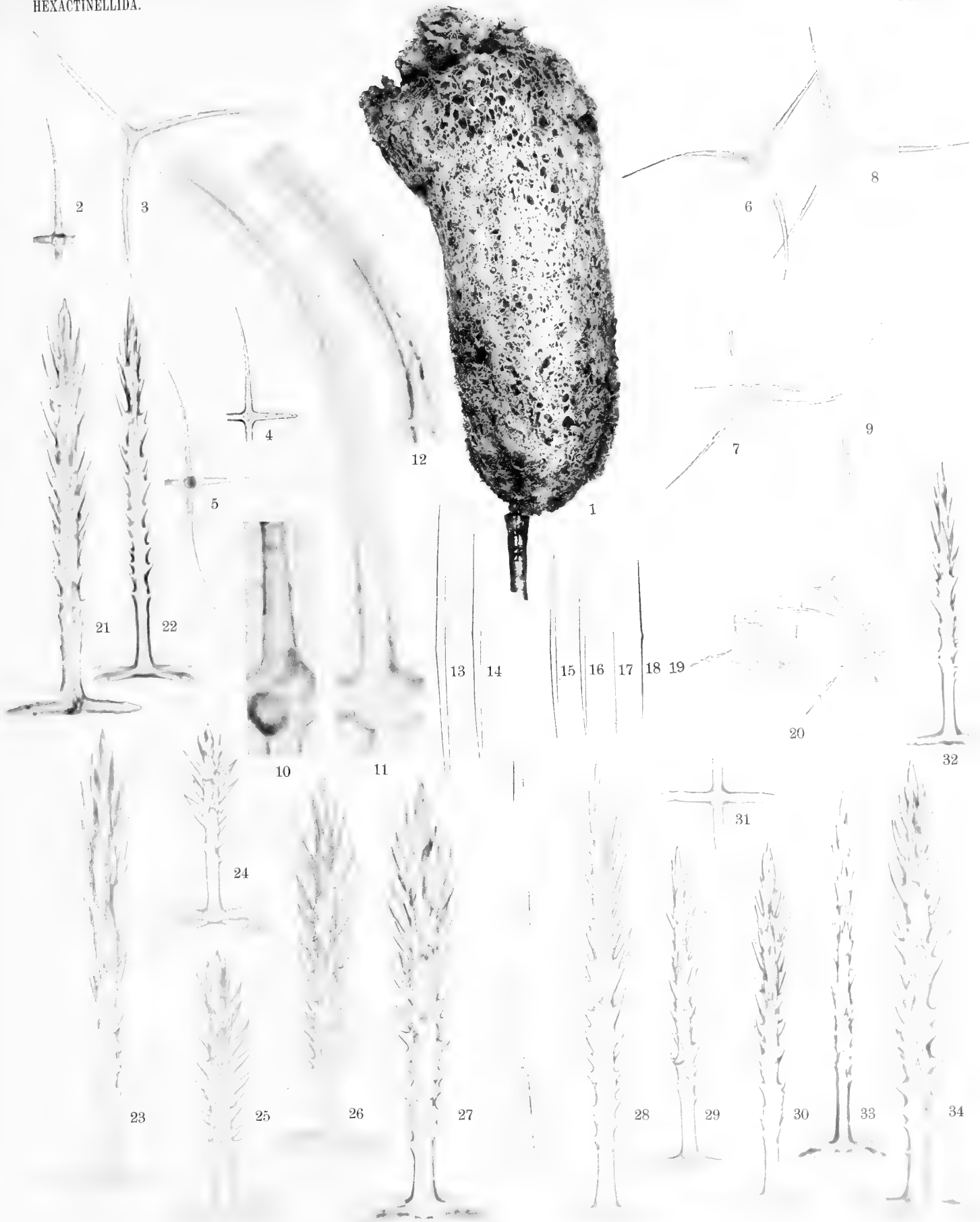


Fig. 1-34 *Hyalonema (Oonema) bianchoratum*, Wilson var. *pinulina* n. var.  
1-23 specimen b; 24-34 specimen a.



PLATE 83.

PLATE 83.

**Hyalonema (Oonema) bianchoratum pinulina** LENDENFELD.

Figs. 1-23, 60, 62-64, 68 — specimen b.

Figs. 24-59, 61, 65-67 — specimen a.

- 1-35.— Acanthophores; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
1-23, from the basal part of the body of specimen b;  
24-35, from the basal part of the body of specimen a.
- 36-44.— Acanthophores from the Palythoa attached to the stalk of specimen a; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 45.— Part of a section vertical to the gastral surface of specimen a; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, surface (zone of the paratangential rays of the pinules); b, pinules; c, a small macramphidisc.
- 46-59.— Acanthophores from the Palythoa attached to the stalk of specimen a; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:  
46, 51, 55, 56, 59, tetractines (stauractines);  
47, 48, 52, 57, 58, rhabds;  
49, a rhabd, focussed lower; 50, focussed higher;  
53, a very short and stout rhabd, focussed lower; 54, focussed higher.
- 60.— Part of the dermal surface of specimen b; magnified 5; phot. Zeiss, planar 50 mm.:  
a, symbiotic polyps.
- 61.— Part of the gastral sieve-membrane of specimen a; magnified 30; phot. Zeiss, planar 20 mm.
- 62.— Part of the dermal sieve-membrane of specimen b; magnified 30; phot. Zeiss, planar 20 mm.
- 63, 64.— Choanosomal hexactine megascleres of specimen b; magnified 20; phot. Zeiss, planar 20 mm.
- 65-68.— Superficial pentaactine megascleres; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4:  
65-67, subdermal pentaactines of specimen a;  
68, a subgastral pentaactine of specimen b.

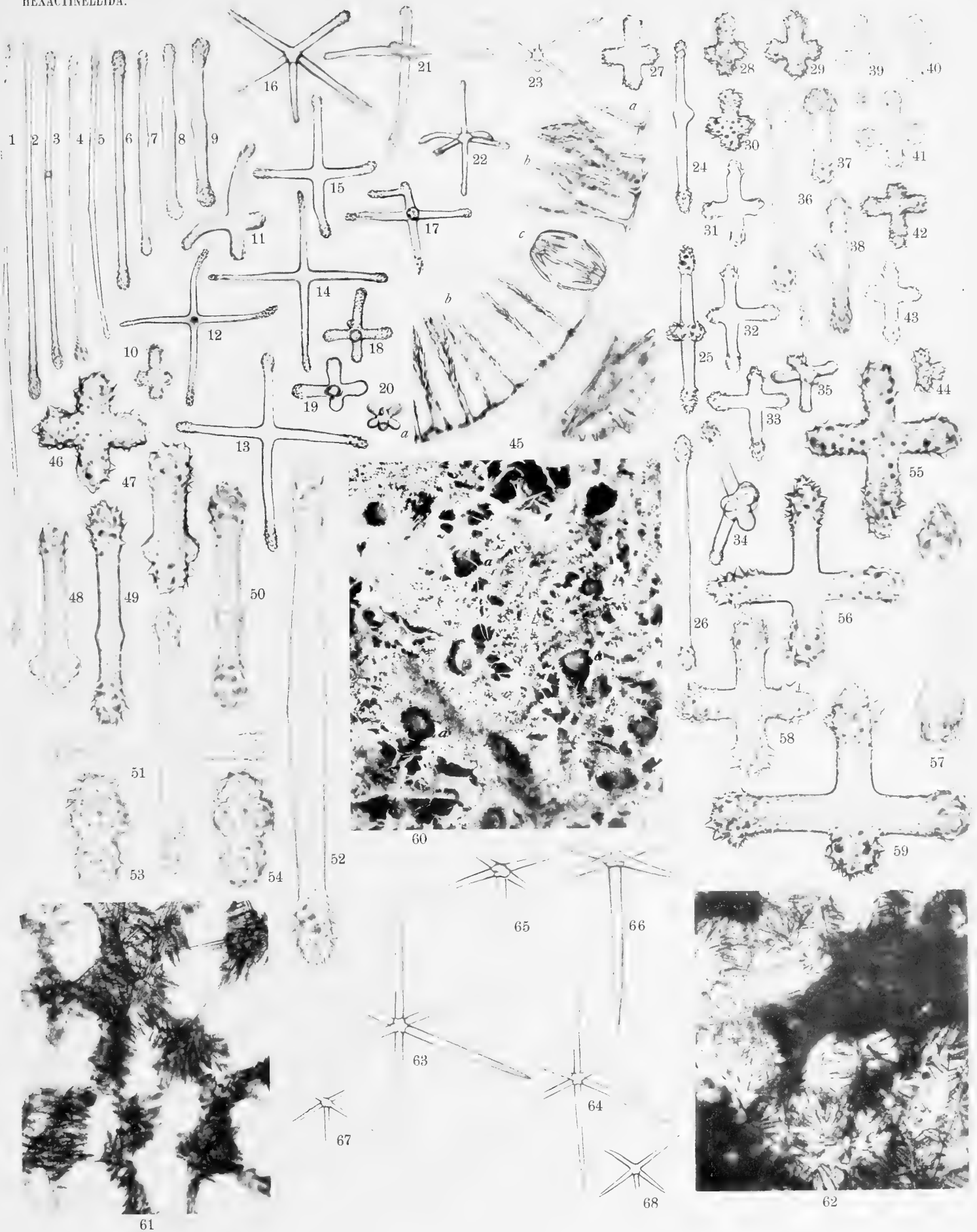


Fig. 1-68. *Hyalonema (Onema) bianchoratum* Wilson, var. *pinulina* n. var.  
 1-23, 60, 62-64, 68 specimen b; 24-59, 61, 65-67 specimen a.

Lendenfeld photographed

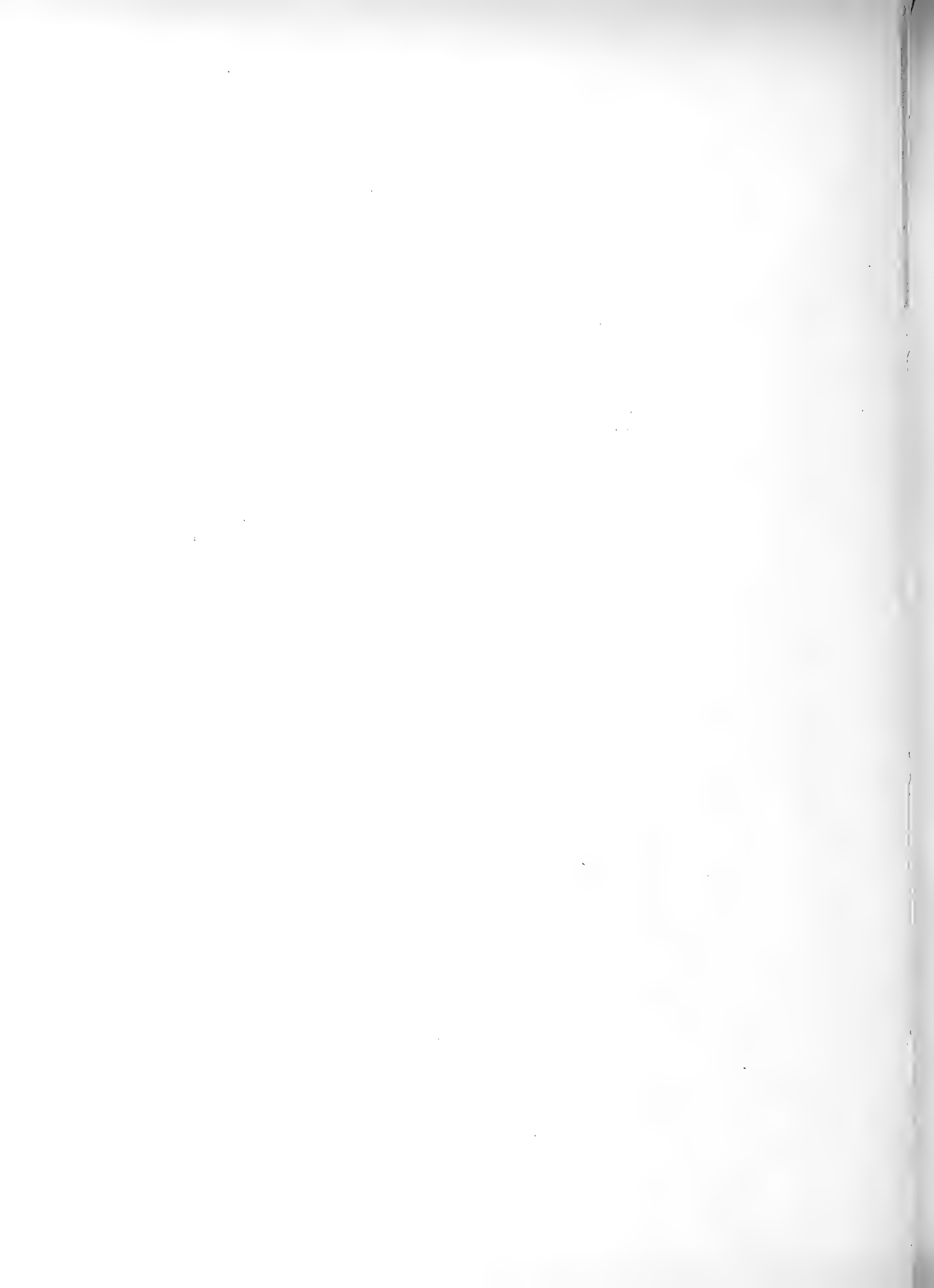




PLATE 84.

PLATE 84.

**Hyalonema (Oonema) bianchoratum pinulina** LENDENFELD.

Figs. 1-10, 15, 26, 27, 30-32 — specimen a.

Figs. 11-14, 16-25, 28, 29 — specimen b.

- 1.— Part of a transverse section of one of the Palythoa polyps attached to the stalk of specimen a; magnified 30; phot. Zeiss, planar 20 mm.
- 2.— Part of a section of the choanosome of specimen a; magenta; magnified 30; phot. Zeiss, planar 20 mm.: a, flagellate chambers.
- 3-13.— Small macramphidiscs from the gastral zone, magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - 3-10, of specimen a;
  - 11-13, of specimen b.
- 14.— Transverse section of one of the polyps imbedded in the body of specimen b; magnified 30; phot. Zeiss, planar 20 mm.
- 15.— A small micramphidisc of specimen a; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 16-25.— Small micramphidiscs of specimen b; magnified 500:
  - 16, 21, phot. Zeiss, apochr. 4, compens. oc. 12;
  - 17-20, 22-25, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 26, 27.— A terminal anchor of a small macramphidisc of specimen a seen from within; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:
  - 26, focussed lower (on the base of the teeth);
  - 27, focussed higher (on the tips of the teeth).
- 28-32.— Side-views of small macramphidiscs; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:
  - 28, a macramphidisc of specimen b, focussed lower (the shaft in focus);
  - 29, the same macramphidisc focussed higher (the tip of the upper teeth in focus);
  - 30, a macramphidisc of specimen a, focussed lower (the shaft in focus);
  - 31, the same macramphidisc, focussed higher (the tip of the upper teeth in focus);
  - 32, another macramphidisc of specimen a.



Fig. 1-32 *Hyalonema (Oonema) bianchoratum* Wilson, var. *pinulina* n. var.  
 1-10, 15, 26, 27, 30-32 specimen a; 11-14, 16-25, 28, 29 specimen b.



PLATE 85.

PLATE 85.

**Hyalonema (Oonema) bianchoratum pinulina** LENDENFELD.

Figs. 1, 4-7 — specimen b.

Figs. 2, 3, 8 — specimen a.

- 1.— A large macramphidise from the choanosome of specimen b; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 8.
- 2-7.— Large macramphidises from the choanosome; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:
  - 2, 3, of specimen a;
  - 4-7, of specimen b.
- 8.— An abnormal small macramphidise from the choanosome of specimen a; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.

**Hyalonema (Oonema) sequoia** LENDENFELD.

Figures 9-21.

- 9-19.— Acanthophores; magnified 200:
  - 9-14, 16-19, short-rayed di- to pentactines; phot. Zeiss, apochr. 8, compens. oc. 6;
  - 15, a long-rayed diactine; phot. Zeiss, apochr. 8, compens. oc. 4.
- 20, 21.— Hexactine megascleres; magnified 20; phot. Zeiss, planar 20 mm.

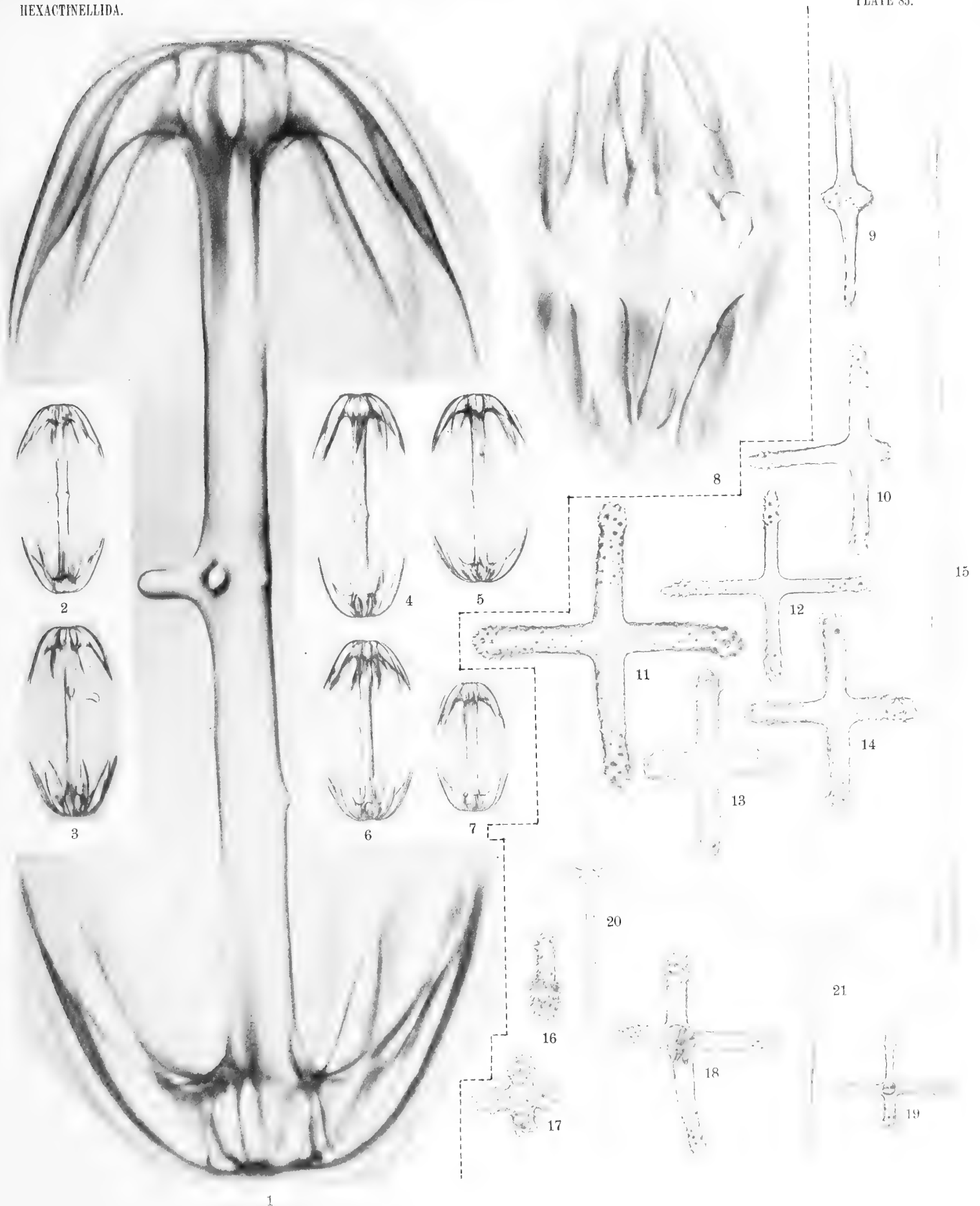


Fig. 1-8 *Hyalonema (Oonema) bianchoratum* Wilson, var. *pinulina* n. var.  
 1, 4-7 specimen b; 2, 3, 8 specimen a.  
 Fig. 9-21 *Hyalonema (Oonema) sequoia* n. sp.





PLATE 86.

PLATE 86.

**Hyalonema (Oonema) sequoia** LENDENFELD.

Figures 1-36.

- 1-6.— Large macramphidiscs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
7.— Portion of the gastral sieve; magnified 20; phot. Zeiss, planar 20 mm.  
8.— View of the specimen; reduced 1:0.83; phot. Zeiss, anastig. 480/412 mm.  
9.— A ray of a microhexactine; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
10.— A monactine microhexactine-derivate; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.  
11, 12.— Part of a microhexactine; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
    11, a whole ray, focussed higher;  
    12, the distal part of the same ray, focussed lower.  
13-26.— Large superficial pinules; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 4:  
    13, a hexactine one;  
    14-26, pentactine ones.  
27-34.— Small macramphidiscs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
35, 36.— Microhexactines; magnified 500:  
    35, a small one; phot. Zeiss, apochr. 8, compens. oc. 12;  
    36, a large one; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.

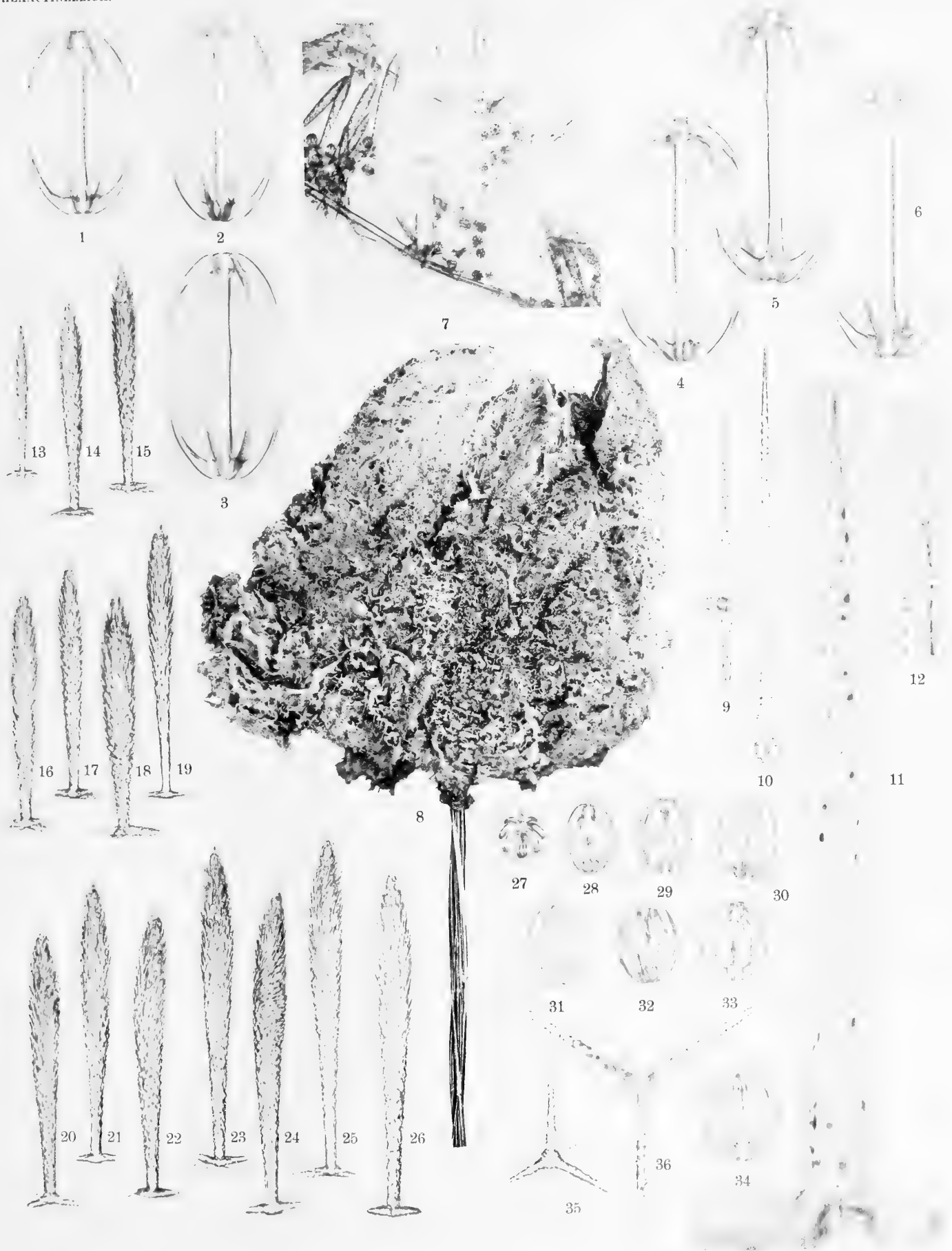


Fig. 1-36 *Hyalonema (Oonema) sequoia* n. sp.



PLATE 87.

PLATE 87.

**Hyalonema (Oonema) sequoia** LENDENFELD.

Figures 1-7.

- 1-7.— Parts of large superficial pinules, and a whole one; magnified 300:
- 1, a portion of the middle-part of one, where the spines are straight and upwardly directed; phot. Zeiss, apochr. 8, compens. oc. 12;
  - 2, a portion of the middle-part of one, where the spines are strongly oblique, all twisted in the same direction; phot. Zeiss, apochr. 8, compens. oc. 12;
  - 3, a whole one; phot. Zeiss, apochr. 8, compens. oc. 6:
    - 3a, the distal part;
    - 3b, the proximal part (there is no overlapping and nothing missing; the upper end of fig. 3b fits exactly on the lower end of fig. 3a).
  - 4, 5, the distal end of one, with the spines very irregular at one point of the upper surface; phot. Zeiss, apochr. 8, compens. oc. 12:
    - 4, focussed higher; 5, focussed lower.
  - 6, 7, the distal end of one, with the spine very irregular at one point of the side (profile); phot. Zeiss, apochr. 8, compens. oc. 12:
    - 6, focussed higher; 7, focussed lower.

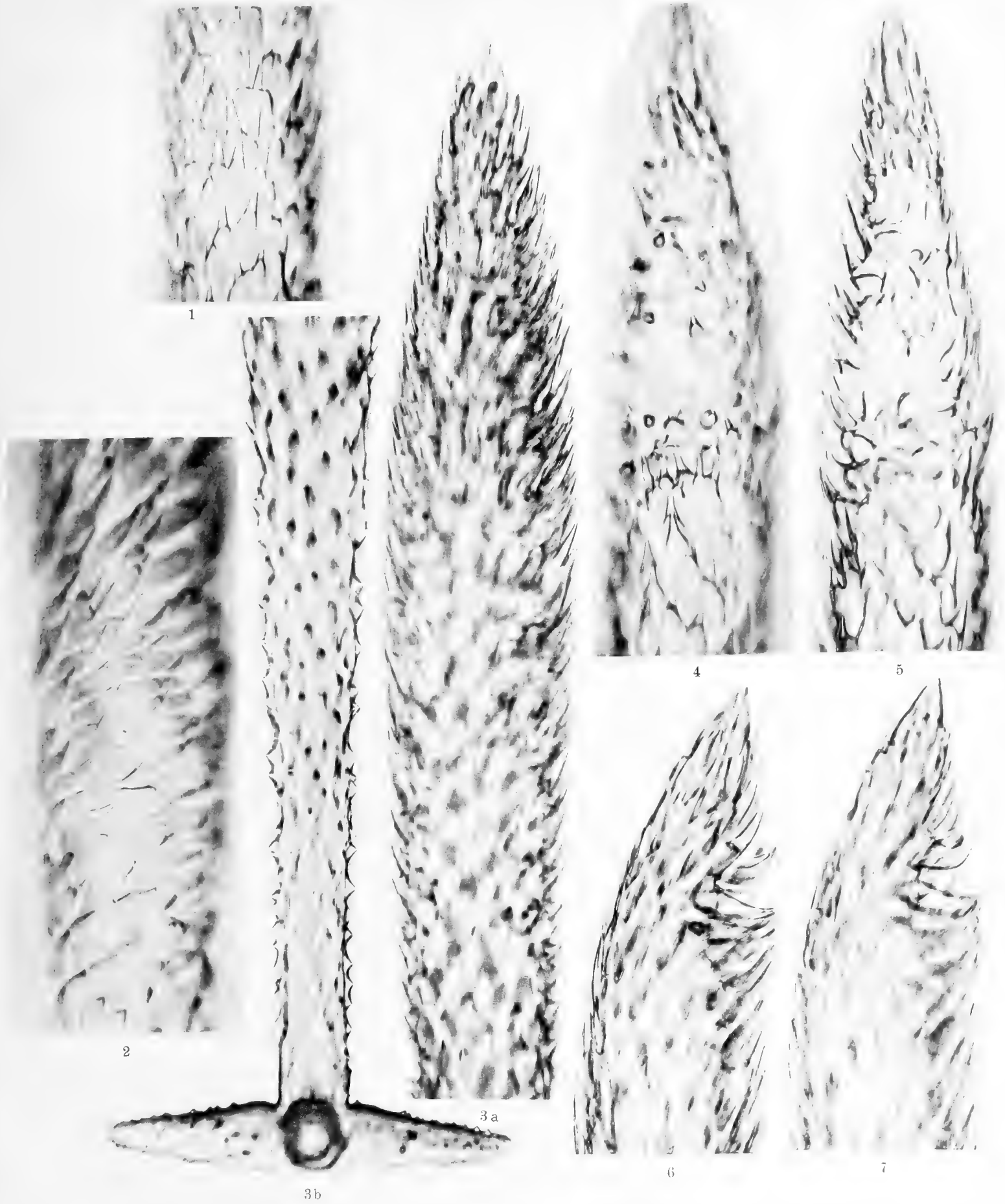


Fig. 1-7 *Hyalonema (Oonema) sequoia* n. sp.





PLATE 88.

PLATE 88.

**Hyalonema (Oonema) sequoia** LENDENFELD.

Figures 1-13.

- 1-4.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.  
5, 6.— Small microhexactine-derivate pinule-like hexactine canalars; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.  
7-10.— Small superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
7-9, pentactine ones;  
10, a hexactine one.  
11-13.— Superficial pentactine pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 6:  
11a, 12a, 13a, the distal parts of three;  
11b, 12b, 13b, the proximal parts of the same (three; there is no overlapping and nothing missing; the upper ends of figs. 11b, 12b, and 13b fit exactly on the lower ends of figs. 11a, 12a, and 13a respectively);  
11, a medium-sized one;  
12, 13, large ones.



Fig. 1-13 *Hyalonema (Oonema) sequoia* n. sp.



PLATE 89.

PLATE 89.

*Hyalonema (Oonema) sequoia* LENDENFELD.

Figures 1-36.

- 1-5.— Large superficial amphioxes (tignules); magnified 20; phot. Zeiss, planar 20 mm.
- 6-14.— Large micramphidiscs; magnified 500:  
6, 7, 9-14, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
8, phot. Zeiss, apochr. 8, compens. oc. 12.
- 15.— Group of spicules from a spicule-preparation of the superficial part of the body; magnified 20; phot. Zeiss, planar 20 mm.:  
a, slender amphioxes; b, stout amphioxes; c, large superficial pinules; d, small macramphidiscs; e, large amphidiscs, probably of *Hyalonema agassizi* and foreign to the sponge, which are remarkably frequent.
- 16-19.— An abnormal amphidisc with reduced anchors; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
16, one end, focussed high;  
17, the whole spicule, focussed lower; 18, focussed still lower;  
19, the other end, focussed lowest.
- 20-30.— Small micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 31, 32.— End-parts of anchor-teeth of large macramphidiscs; magnified 500:  
31, phot. Zeiss, apochr. 8, compens. oc. 12;  
32, phot. Zeiss, apochr. 8, compens. oc. 6.
- 33.— A somewhat abnormal small macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 34.— A small micramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10.
- 35, 36.— An abnormal small macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
35, focussed higher; 36, focussed lower.



Fig. 1-36 *Hyalonema (Oonema) sequoia* n. sp.

Lendenfeld photographed





PLATE 90.

PLATE 90.

**Hyalonema (Oonema) sequoia** LENDENFELD

Figures 1-10.

- 1-10.— Small macramphidises; magnified 500; phot. Zeiss, apochr. S, compens. oc. 12  
1, 3, 5, 7, 9, focussed high (the upper teeth in focus);  
2, 4, 6, 8, 10, the same spicules focussed low (the shaft in focus);  
1, 2, a small one;  
3, 4, a medium-sized slender one;  
5, 6, a medium-sized broad one with partly irregular anchor-teeth;  
7, 8, a large one;  
9, 10, a medium-sized broad one with regular anchor-teeth.



Fig. 1-10 *Hyalonema (Oonema) sequoia* n. sp.

Lendenfeld photographed .



PLATE 91.

PLATE 91.

**Hyalonema (Oonema) sequoia** LENDENFELD.

Figures 1-6.

1-6.— Parts of large macramphidises; magnified 500:

1-4, phot. Zeiss, apochr. 8, compens. oc. 12;

5, 6, phot. Zeiss, apochr. 8, compens. oc. 6;

1-3, parts of terminal anchors, showing irregular teeth;

4, a regular terminal anchor;

5, 6, the shaft and half of the terminal anchors of two regular ones.



*Fig. 1-6 Hyalonema (Oonema) sequoia n. sp.*

Lendenfeld photographed





PLATE 92.

PLATE 92.

**Hyalonema (Oonema) crassipinulum** LENDENFELD.

Figures 1-23.

- 1-7.— Superficial pinules; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 2:  
1-5, gastral pinules;  
6, 7, dermal pinules.
- 8.— Portion of the lower layer (without the pinules) of the gastral membrane; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 9-11.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 12-15.— Parts of microhexactines (13-15) and a whole one (12); magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 16, 17.— Canalar pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
16, a pentactine one;  
17, a hexactine one.
- 18-21.— Side-views of superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 6:  
18, a dermal pinule;  
19-21, gastral pinules.
- 22, 23.— The basal part of a gastral superficial pinule with the distal ray broken off rather short, seen from above; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
22, focussed higher, an optical transverse section of the distal ray;  
23, focussed lower, the lateral rays.

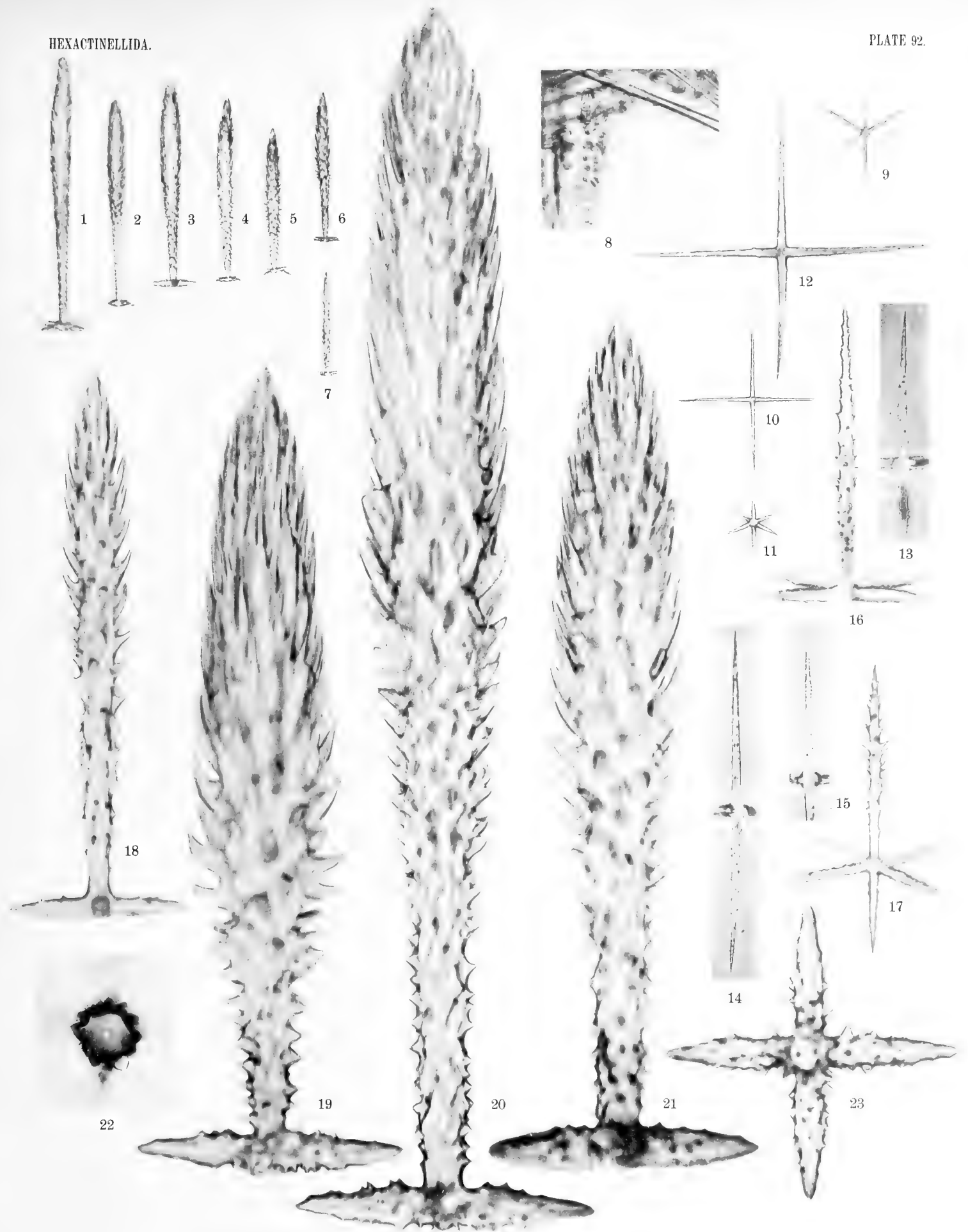


Fig. 1-23 *Hyalonema (Oonema) crassipinulum n. sp.*

Lendenfeld photographed



PLATE 93.

PLATE 93.

**Hyalonema (Oonema) crassipinulum** LENDENFELD.

Figures 1-10.

- 1, 2.— Slender small macramphidises; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 3-8.— Three broad small macramphidises; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:
  - 3, a middle-sized one, focussed high (on the uppermost teeth);
  - 4, the same spicule focussed low (on the shaft);
  - 5, a small one, focussed high (on the uppermost teeth);
  - 6, the same spicule focussed low (on the shaft);
  - 7, a large one, focussed high (on the uppermost teeth);
  - 8, the same spicule focussed low (on the shaft).
- 9.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm.
- 10.— A large macramphidisc; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.

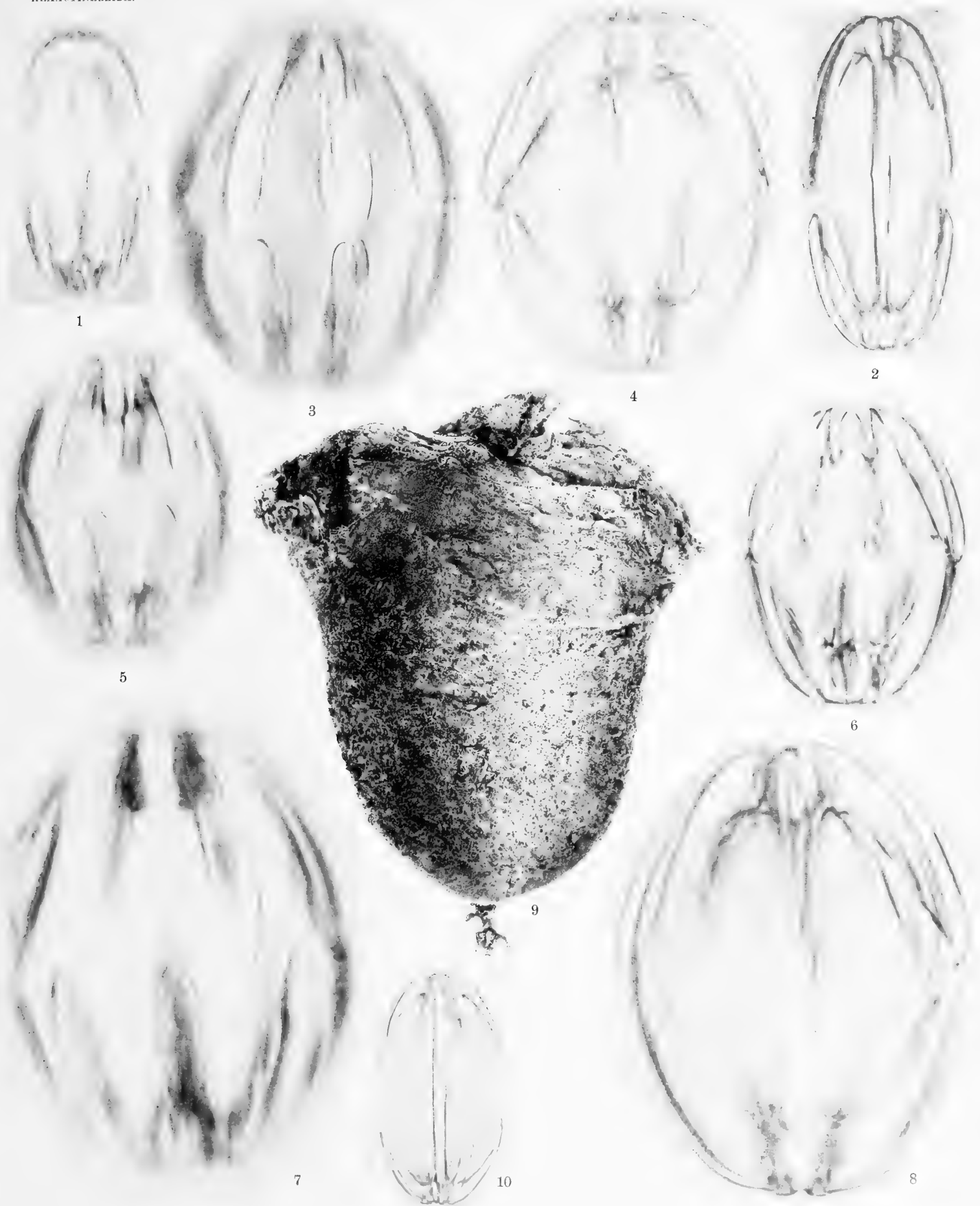


Fig. 1-10 *Hyalonema (Oonema) crassipinulum* n. sp.





PLATE 94.

PLATE 94.

**Hyalonema (Oonema) crassipinulum** LENDENFELD.

Figures 1-33.

- 1-4.— Small macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
1-3, broad ones;  
4, a narrow one.
- 5-11.— Micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 12, 13.— A micramphidise; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
12, focussed higher (on the uppermost teeth);  
13, focussed lower (on the shaft).
- 14-23.— Acanthophores from the Palythoa attached to the stalk; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 24-33.— Acanthophores from the sponge-body; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

**Hyalonema (Oonema) densum** LENDENFELD.

Figures 34-42.

- 34-36.— Acanthophores; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 37-39.— Two whole microhexactines and part of one; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 40.— Part of a microhexactine; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 41, 42.— Radial sections through the choanosome; magenta:  
41, magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6;  
42, magnified 30; phot. Zeiss, planar 20 mm.

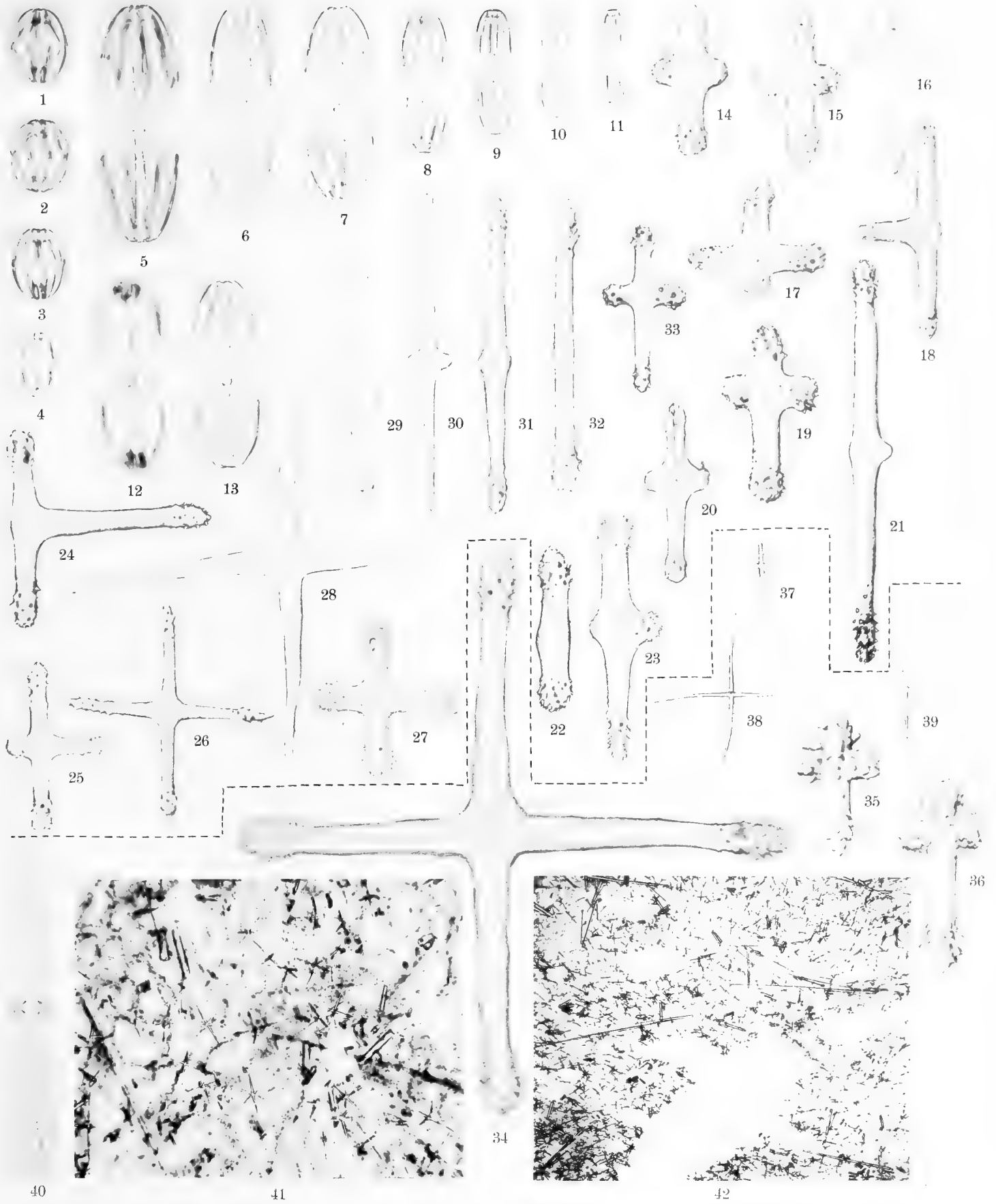


Fig. 1-33 *Hyalonema (Oonema) crassipinulum* n. sp.; Fig. 34-42 *Hyalonema (Oonema) densum* n. sp.



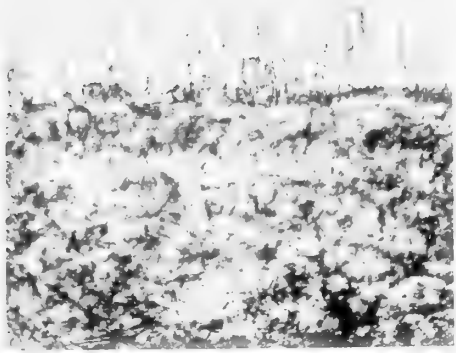
PLATE 95.

PLATE 95.

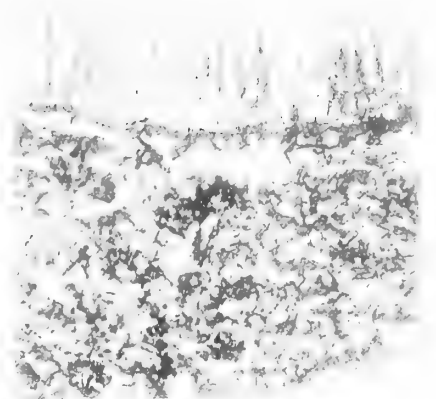
**Hyalonema (Oonema) densum** LENDENFELD.

Figures 1-20.

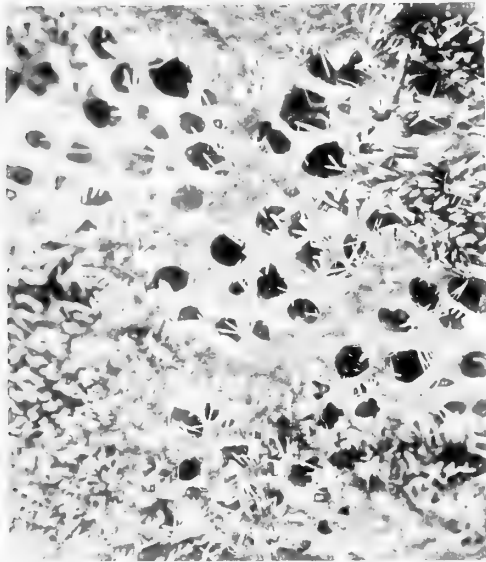
- 1.— Radial section through the dermal membrane and the underlying part of the choanosome; magnified 30; phot. Zeiss, planar 20 mm.
- 2.— Radial section through the gastral membrane and the underlying part of the choanosome; magnified 30; phot. Zeiss, planar 20 mm.
- 3.— View of part of the gastral surface; magnified 8; phot. Zeiss, planar 50 mm.
- 4.— View of the specimen; reduced 1:0.89; phot. Zeiss, anastig. 480/412 mm.
- 5-10.— Micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
5-8, large micramphidiscs;  
9, 10, small micramphidiscs.
- 11, 12.— Apical views of the lateral rays of gastral pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 13-16.— Side-views of superficial pinules; magnified 300:  
13, 14, gastral pinules; phot. Zeiss, apochr. 16, compens. oc. 12;  
15, a dermal pinule; phot. Zeiss, apochr. 8, compens. oc. 12;  
16, a gastral pinule; phot. Zeiss, apochr. 8, compens. oc. 12.
- 17-20.— Superficial pinules; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 2:  
17, 18, gastral pinules;  
19, 20, dermal pinules.



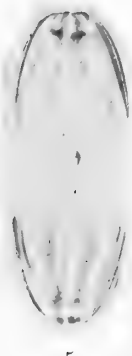
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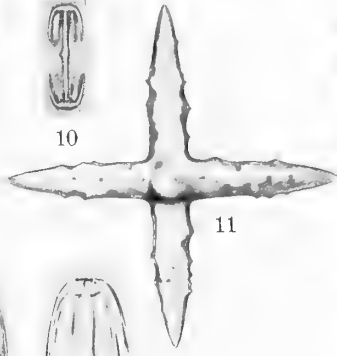
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9



10



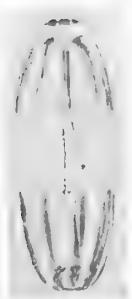
11



7



8



6



12



13



14



15



16



17



18



19



20



4

Lendenfeld photographed

Fig. 1-20 *Hyalonema (Oonema) densum* n. sp.

Lichtdruck von Werner & Winter, Frankfurt a. M.

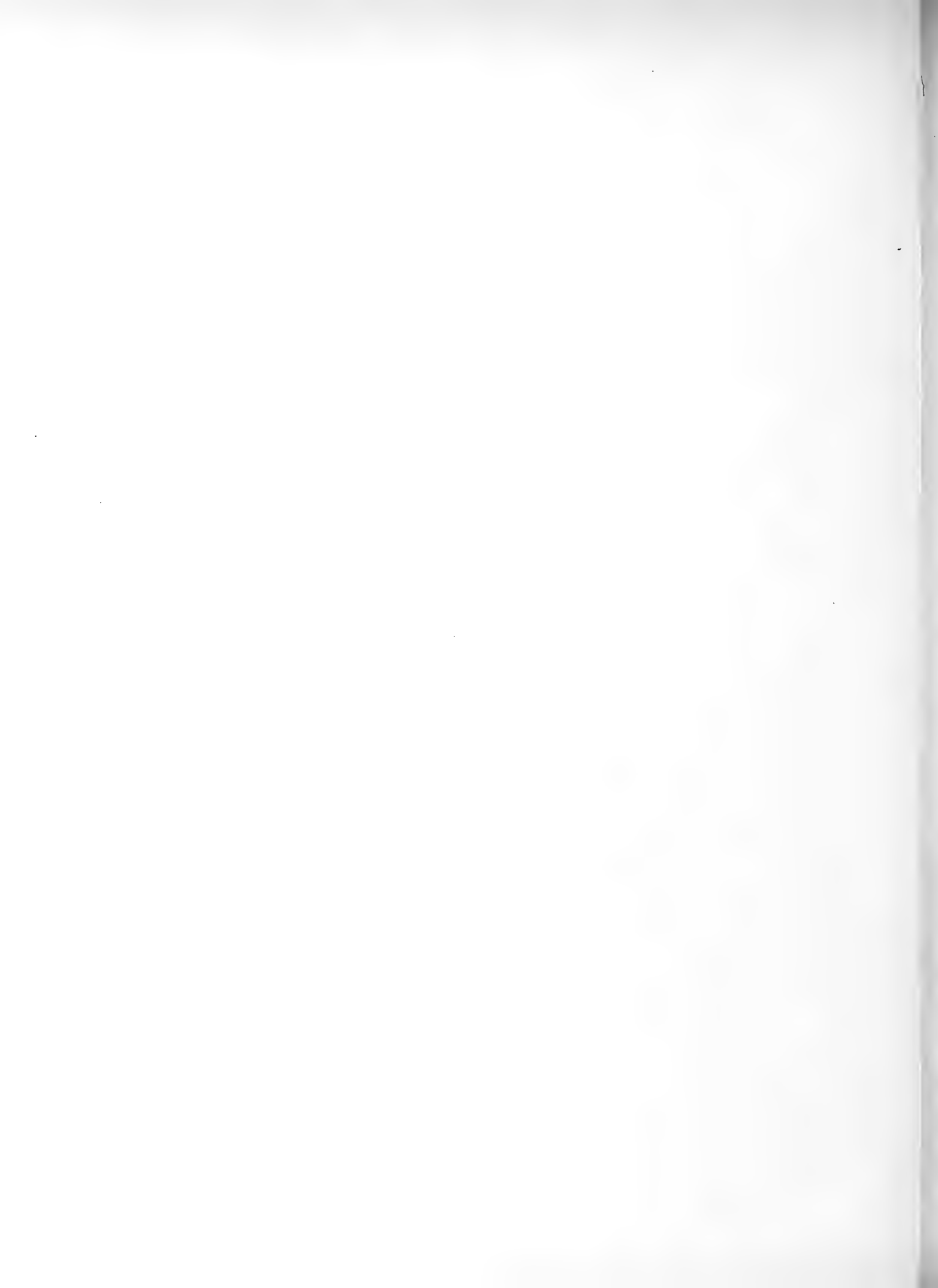




PLATE 96.

PLATE 96.

**Hyalonema (Oonema) densum** LENDENFELD.

Figures 1-14.

- 1-7.— Small macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
8, 9, 14.— Large macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.  
10, 11.— A larger small macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
10, focussed high (on the uppermost teeth); 11, focussed low (on the shaft).  
12, 13.— Two smaller small macramphidises; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.

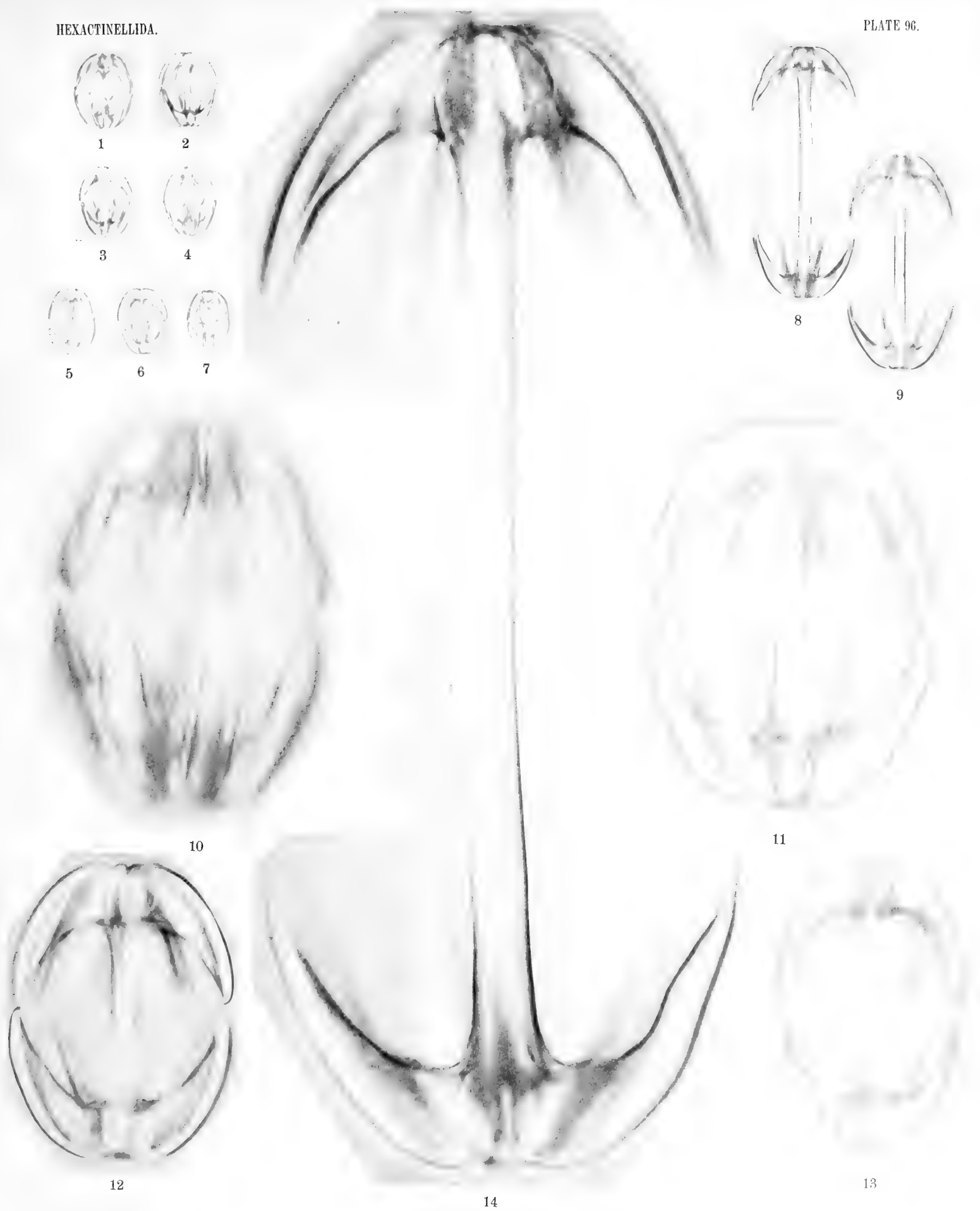


Fig. 1-14 *Hyalonema (Oonema) densum* n. sp.

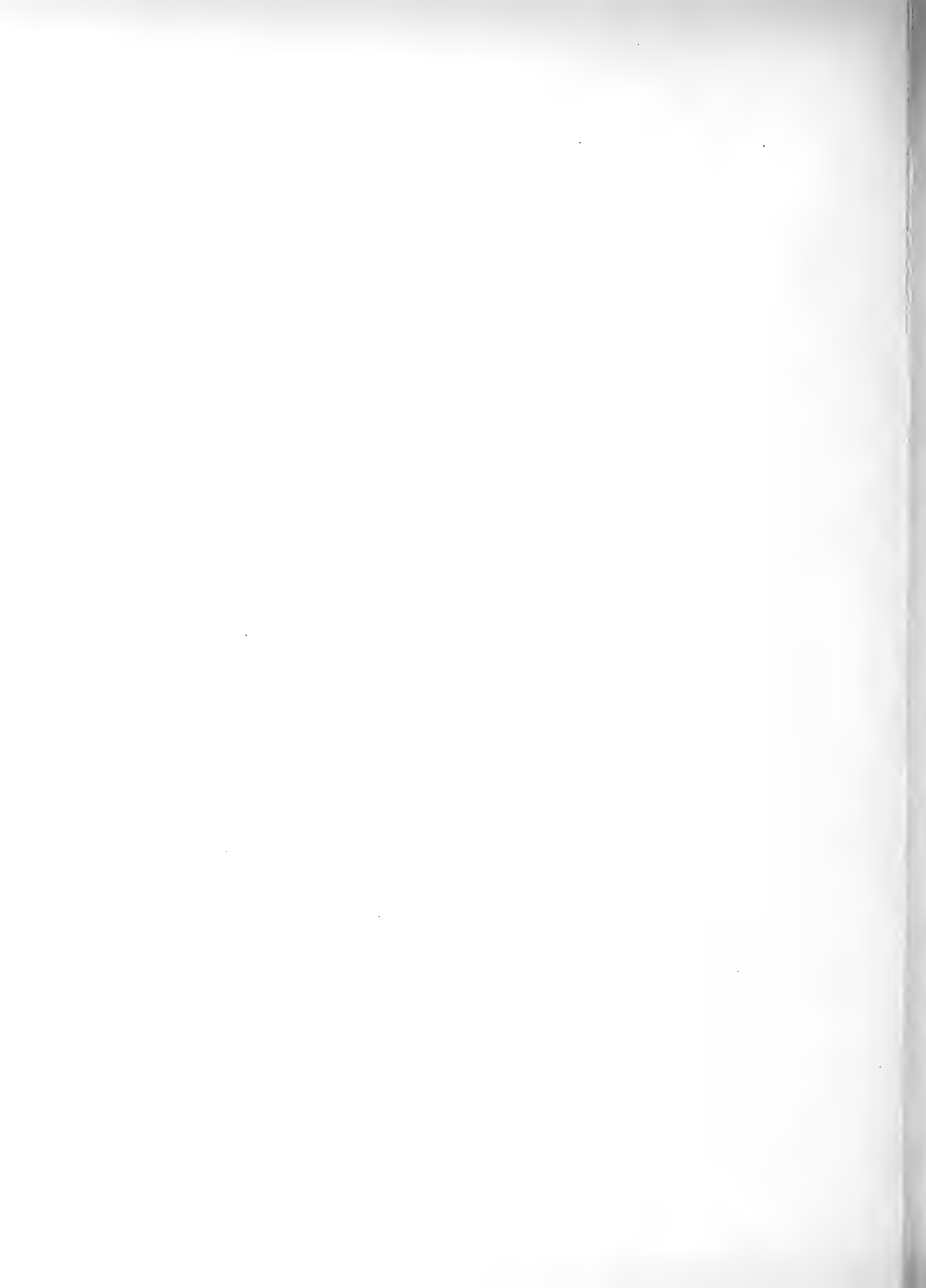


PLATE 97.

PLATE 97.

**Hyalonema (Oonema) henshawi** LENDENFELD.

Figures 1-36.

- 1-5.— Superficial pinules; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 2:  
1, 3-5, gastral pinules;  
2, a dermal pinule.
- 6.— A canalar pinule; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 7-14.— Macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
7-12, side-views;  
13, 14, apical views.
- 15.— View of the specimen; natural size; phot. Zeiss, anastig. 480/412 mm.
- 16-28.— Micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
16-20, large micramphidises;  
21-28, small micramphidises.
- 29-31.— Superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12:  
29, 30, gastral pinules;  
31, a dermal pinule.
- 32.— Part of a gastral pore-sieve; magnified 20; phot. Zeiss, planar 20 mm.
- 33, 34.— Parts of microhexactines; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 35, 36.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

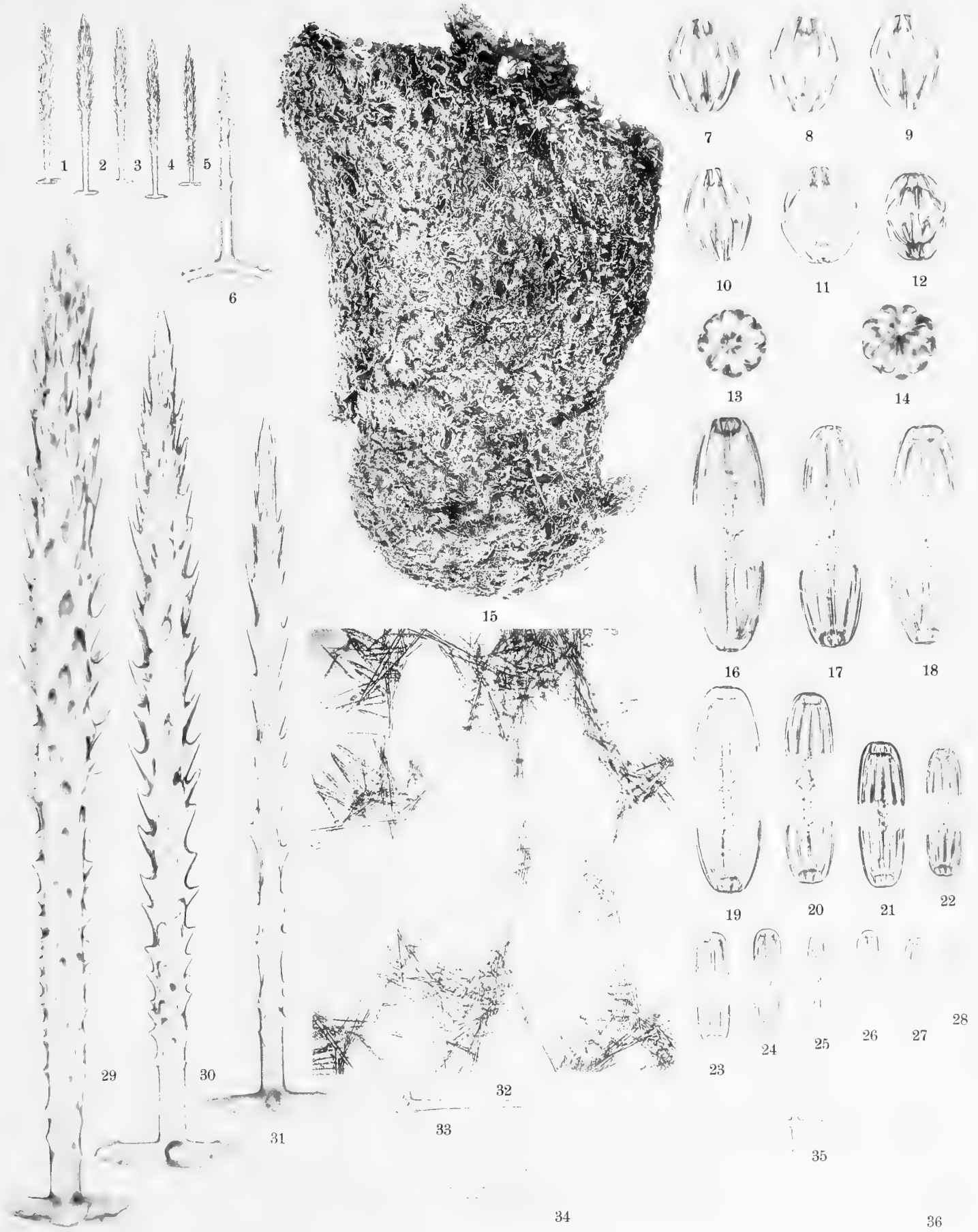


Fig. 1-36 *Hyalonema (Oonema) henshawi* n. sp.

Lendenfeld photographed





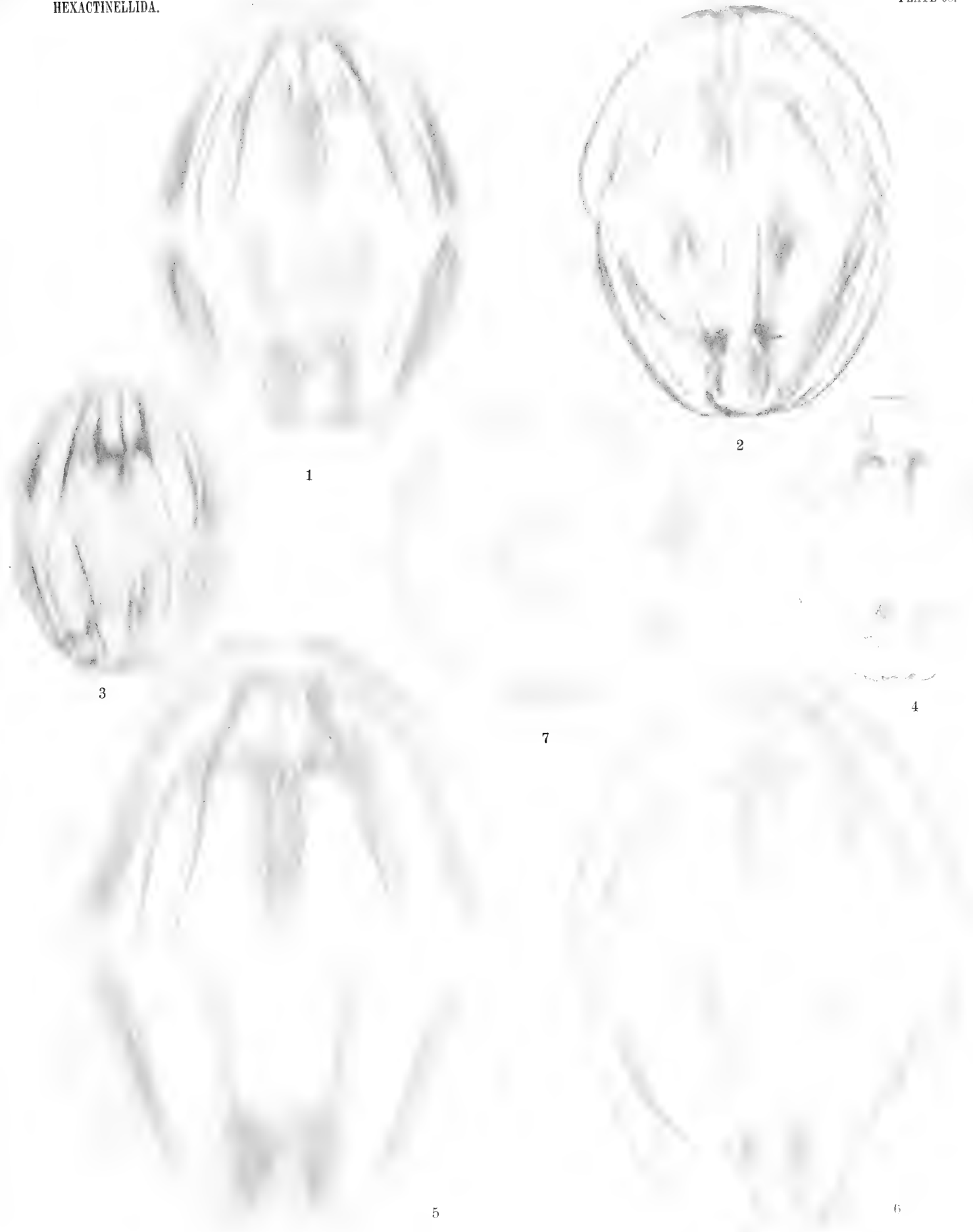
PLATE 98.

PLATE 98.

**Hyalonema (Oonema) henshawi** LENDENFELD.

Figures 1-7.

- 1-6.— Side-views of macramphidiscs; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
1, a middle-sized one, focussed high (on the uppermost teeth); 2, focussed lower (on the shaft);  
3, a small one, focussed high (on the uppermost teeth); 4, focussed lower (on the shaft);  
5, a large one, focussed high (on the uppermost teeth); 6, focussed lower (on the shaft).  
7.— Apical view of a middle-sized macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.



*Fig. 1-7 Hyalonema (Oonema) henshawi n. sp.*



PLATE 99.

PLATE 99.

**Hyalonema (Skianema) aequatoriale** LENDENFELD.

Figures 1-37.

- 1, 2.— Apical view of a large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
1, focussed higher; 2, focussed lower.
- 3-10.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 11-16.— Large micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
11-13, focussed high (on the uppermost teeth); 14-16, focussed lower (on the shaft) (11 = 14;  
12 = 15; 13 = 16).
- 17.— View of the specimen; reduced to 1:0.9; phot. Zeiss, anastig. 480/412 mm.
- 18.— A middle-sized, somewhat irregular macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 19, 20.— A small irregular macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
19, focussed higher; 20, focussed lower.
- 21-24.— Small micramphidiscs; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 25-28.— Gastral superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 29-31.— Dermal superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 32-35.— Parts of microhexactines; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 36.— Apical view of the lateral ray-cross of a gastral superficial pinule; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 37.— Part of a terminal anchor (two teeth) of a large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.

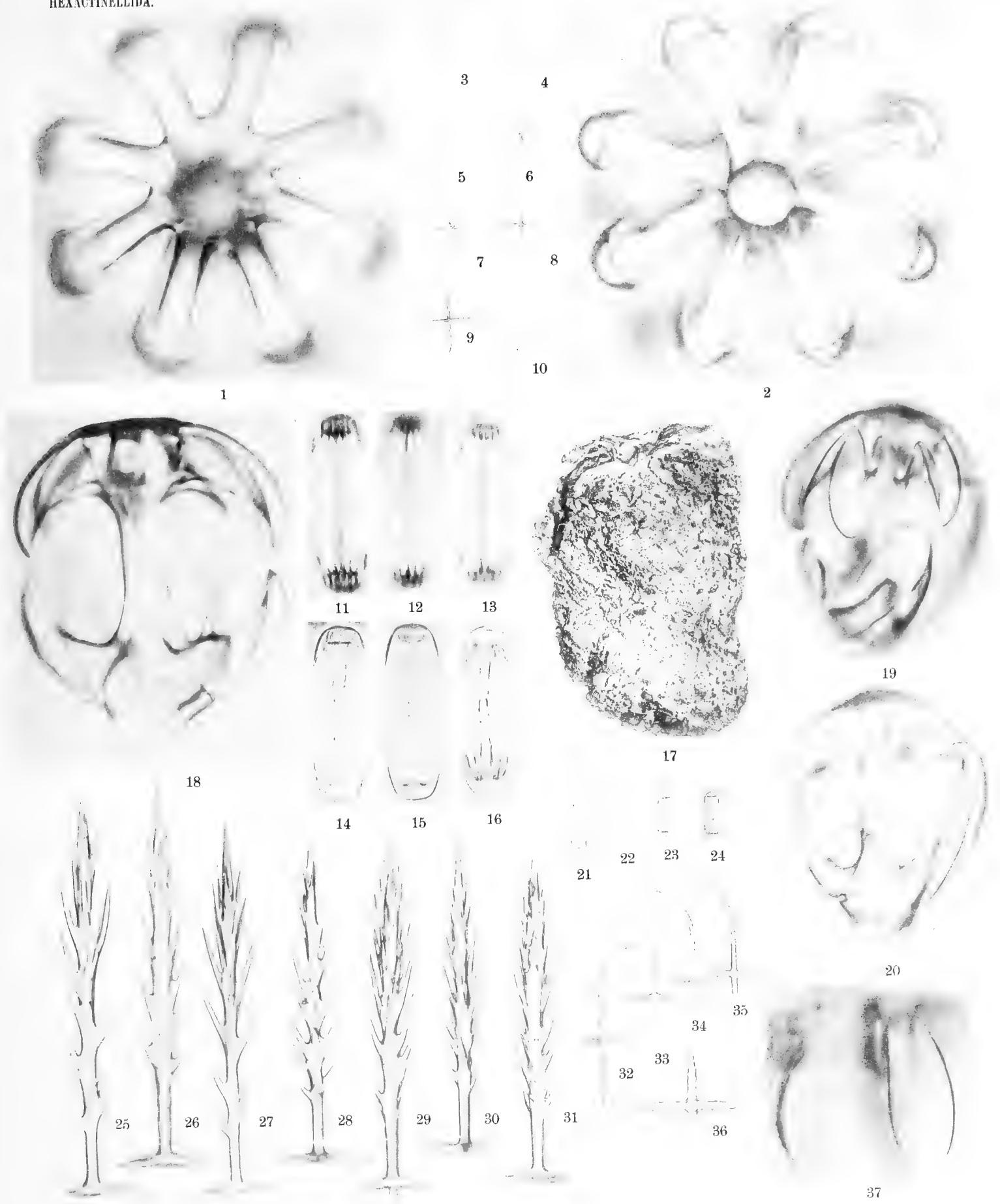


Fig. 1-37 *Hyalonema (Skianema) aequatoriale* n. sp.





PLATE 100.

PLATE 100.

**Hyalonema (Skianema) aequatoriale** LENDENFELD.

Figures 1-12.

- 1, 2.— A slender small macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
1, focussed high (on the uppermost teeth); 2, focussed lower (on the shaft).
- 3, 4.— A broad small macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
3, focussed high (on the uppermost teeth); 4, focussed low (on the shaft).
- 5.— A large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 6, 7.— A large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
6, focussed high (on the uppermost teeth); 7, focussed lower (on the shaft).
- 8-11.— Large macramphidiscs; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 12.— A small macramphidisc; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.

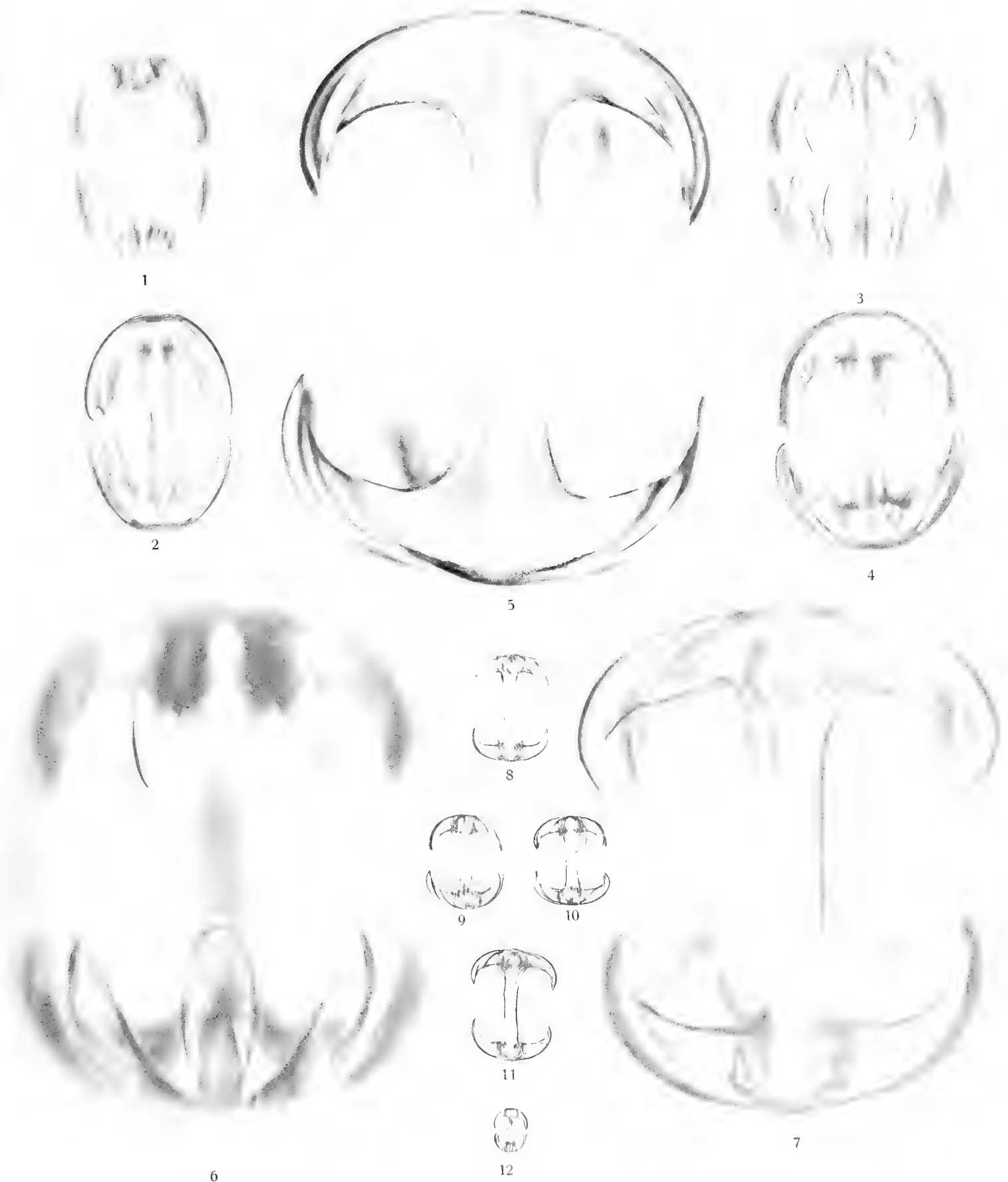


Fig. 1—12 *Hyalonema (Skianema) aequatoriale* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 101.

PLATE 101.

**Hyalonema (Skianema) aequatoriale** LENDENFELD.

Figures 1-3.

- 1.— Radial section through the marginal part of the sponge; magnified 20; phot. Zeiss, planar 20 mm.:  
a, gastral face; b, dermal face.
- 2.— Radial section through the gastral membrane and the adjacent parts of the choanosome; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
a, gastral pinule-fur; b, gastral membrane; c, small macramphidiscs protruding over the gastral membrane; d, large macramphidiscs in the subgastral region.
- 3.— Paratangential section through the gastral membrane, containing the zone occupied by the lateral rays of the pinules.

**Hyalonema (Skianema) umbraculum** LENDENFELD.

Figures 4-17.

- 4-7.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 8, 9.— An abnormal large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
8, focussed high (on the uppermost teeth); 9, focussed lower (on the shaft).
- 10.— Half (one anchor) of an abnormal large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 11-13.— Parts of microhexactines (11, 13) and a whole one (12); magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 14.— A diactine microhexactine-derivate; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 15-17.— Acanthophores; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.

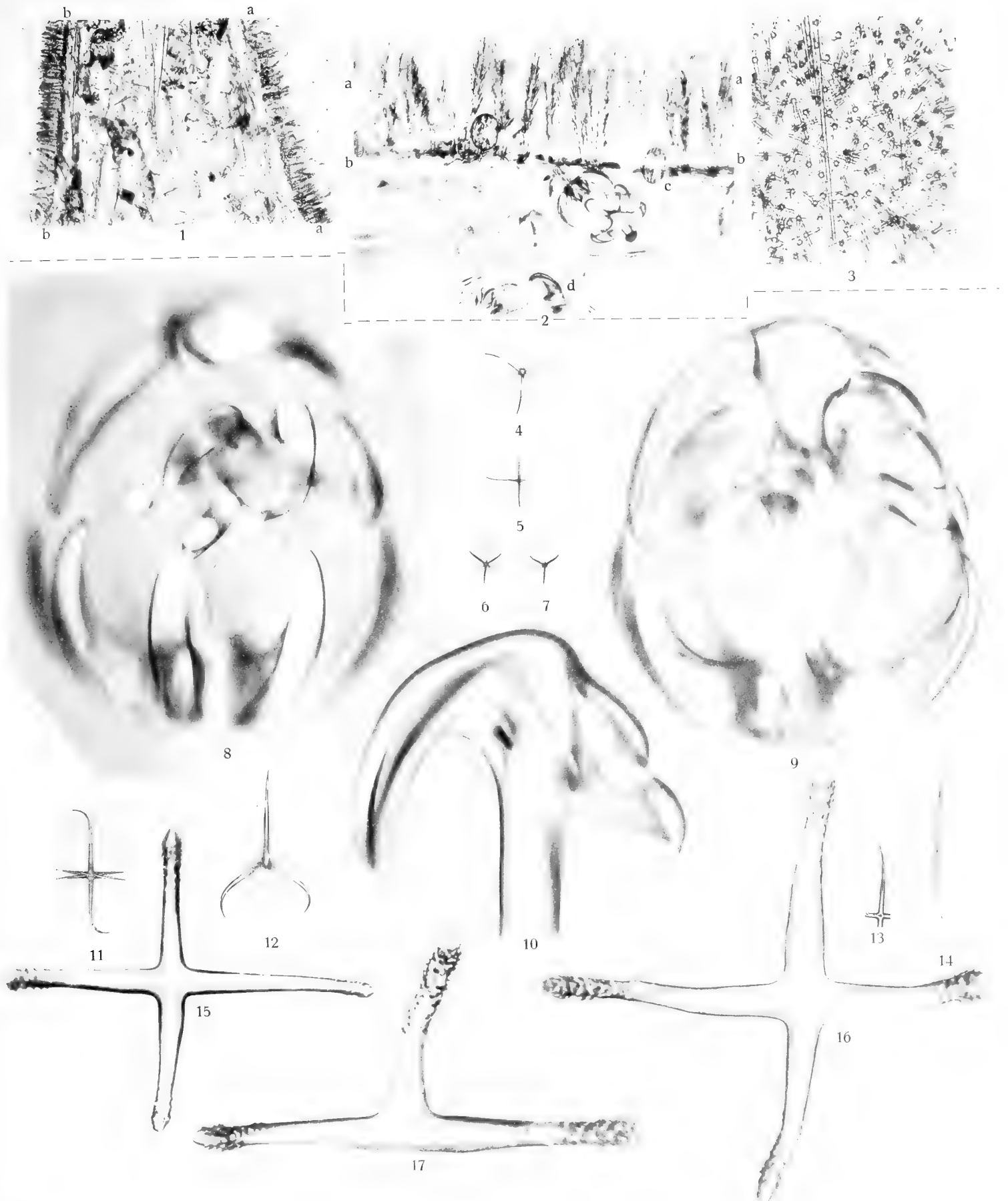


Fig. 1—3 *Hyalonema (Skianema) aequatoriale* n. sp.  
 Fig. 4—17 *Hyalonema (Skianema) umbraculum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 102.

PLATE 102.

**Hyalonema (Skianema) umbraculum** LENDENFELD.

Figures 1-8.

- 1, 2.— Apical view of a large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
1, focussed higher; 2, focussed lower.
- 3-6.— Small macramphidises; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
3, 5, focussed high (on the uppermost teeth); 4, 6, focussed lower (on the shaft) (3 = 4; 5 = 6).
- 7, 8.— A large macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12:  
7, focussed high (on the uppermost teeth); 8, focussed lower (on the shaft).

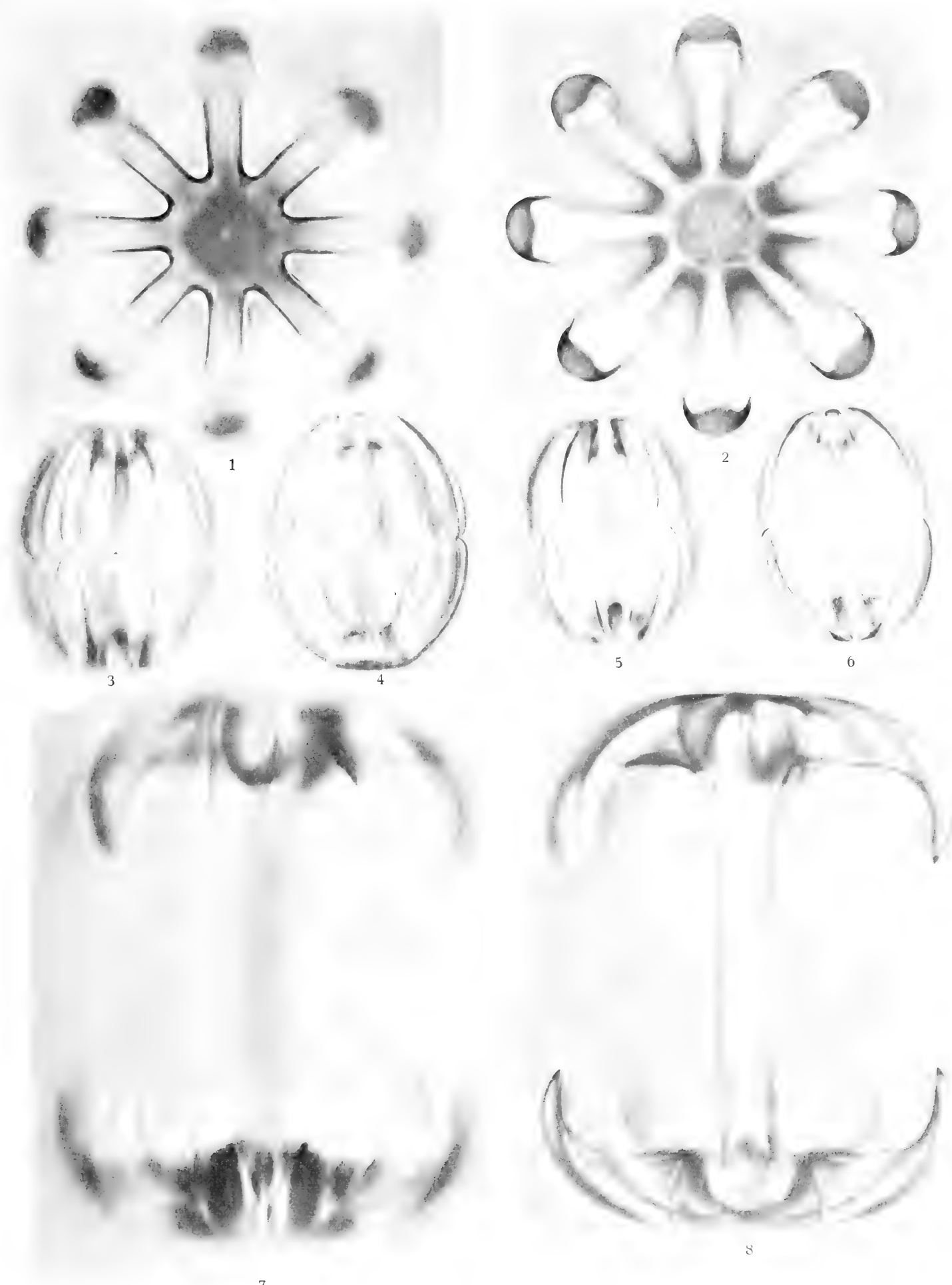


Fig. 1—8 *Hyalonema (Skianema) umbraculum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



PLATE 103.

PLATE 103.

**Hyalonema (Skianema) umbraculum** LENDENFELD.

Figures 1-36.

- 1-8.— Large macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
1, 3, 5, 7, focussed high (on the uppermost teeth); 2, 4, 6, 8, focussed lower (on the shaft) (1 = 2;  
3 = 4; 5 = 6; 7 = 8).
- 9-13.— Superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 14-23.— Large macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6:  
14-21, side-views;  
22, an oblique view;  
23, an apical view.
- 24-26.— Small macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 27-29.— Small micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 30-34.— Large micramphidises; magnified 500:  
30-32, 34, phot. Zeiss, H. I. apochr. 2, compens. oc. 6;  
33, phot. Zeiss, apochr. 4, compens. oc. 12.
- 35, 36.— A large micramphidisc; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6:  
35, focussed high (on the uppermost teeth); 36, focussed lower (on the shaft).

**Hyalonema (Thallonema) geminatum** LENDENFELD.

Figures 37-62.

- 37, 38.— One anchor and part of the shaft of a large micramphidisc; magnified 2000; u. v. phot. Zeiss,  
q. monochr. 1.7, q. oc. 10:  
37, focussed lower (on the shaft); 38, focussed high (on the uppermost teeth).
- 39-44.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.
- 45-48.— Parts of microhexactines (47, 48) and two whole ones (45, 46); magnified 500; phot. Zeiss,  
H. I. apochr. 2, compens. oc. 6.
- 49-52.— Small micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 53-57.— Large micramphidises; magnified 500:  
53, phot. Zeiss, apochr. 8, compens. oc. 12;  
54-57, phot. Zeiss, H. I. apochr. 2, compens. oc. 6.
- 58-62.— Superficial pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.

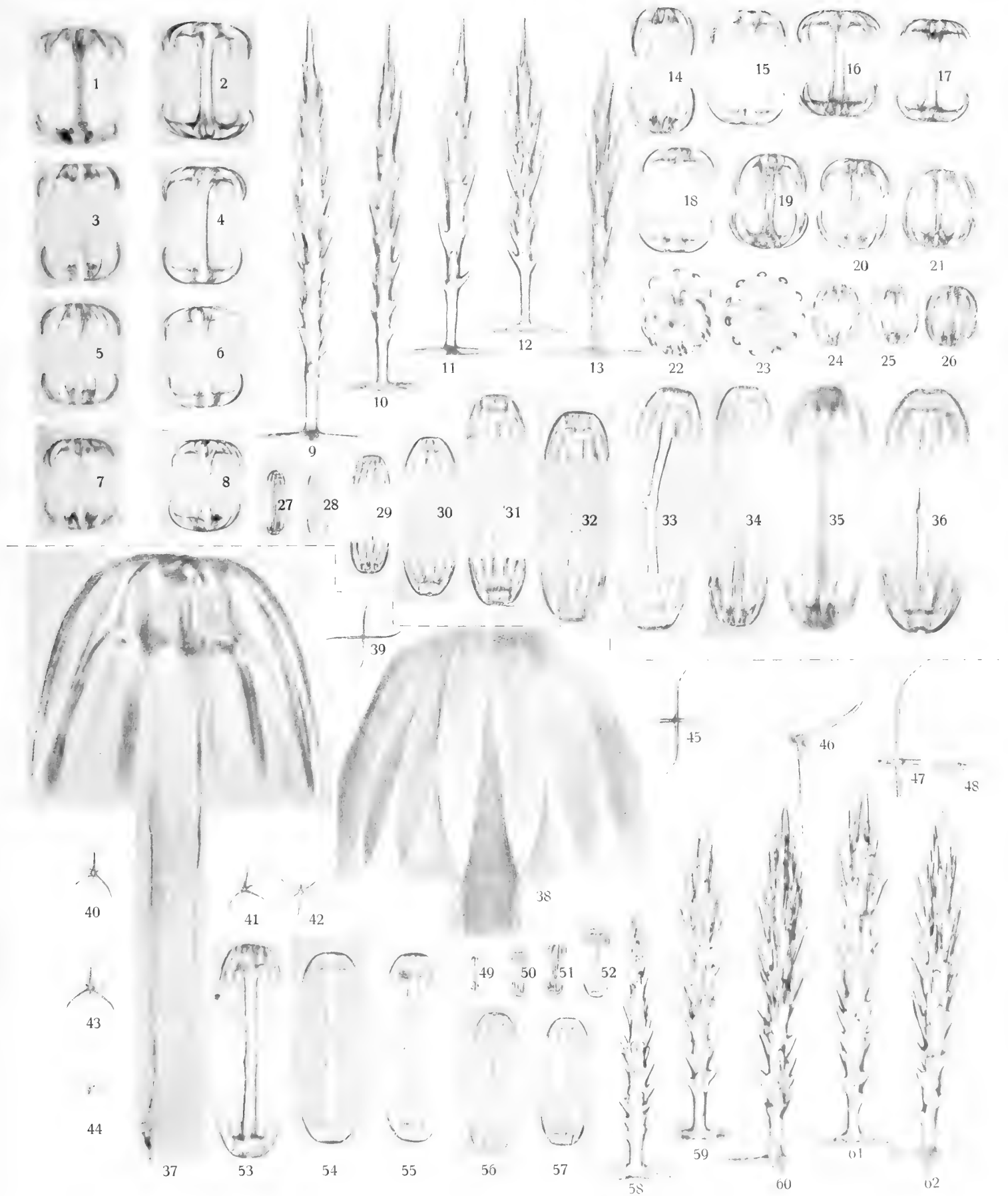


Fig. 1—36 *Hyalonema (Skianema) umbraculum* n. sp.  
 Fig. 37—62 *Hyalonema (Thallonema) geminatum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 104.

PLATE 104.

**Hyalonema (Thallonema) geminatum** LENDENFELD.

Figures 1-14.

- 1-4.— Parts of anchors of large geminate macramphidises; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 5.— A large macramphidise with the teeth of one anchor geminate; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 6, 7.— A simple large macramphidise; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6: 6, focussed high (on the uppermost teeth); 7, focussed lower (on the shaft).
- 8.— A geminate large macramphidise; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6.
- 9, 10.— Small macramphidises; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6: 9, apical view; 10, side view.
- 11, 12.— A large geminate macramphidise; magnified 100; phot. Zeiss, apochr. 16, compens. oc. 6: 11, focussed high (on the uppermost teeth); 12, focussed lower (on the shaft).
- 13, 14.— A small macramphidise; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12: 13, focussed high (on the uppermost teeth); 14, focussed lower (on the shaft).

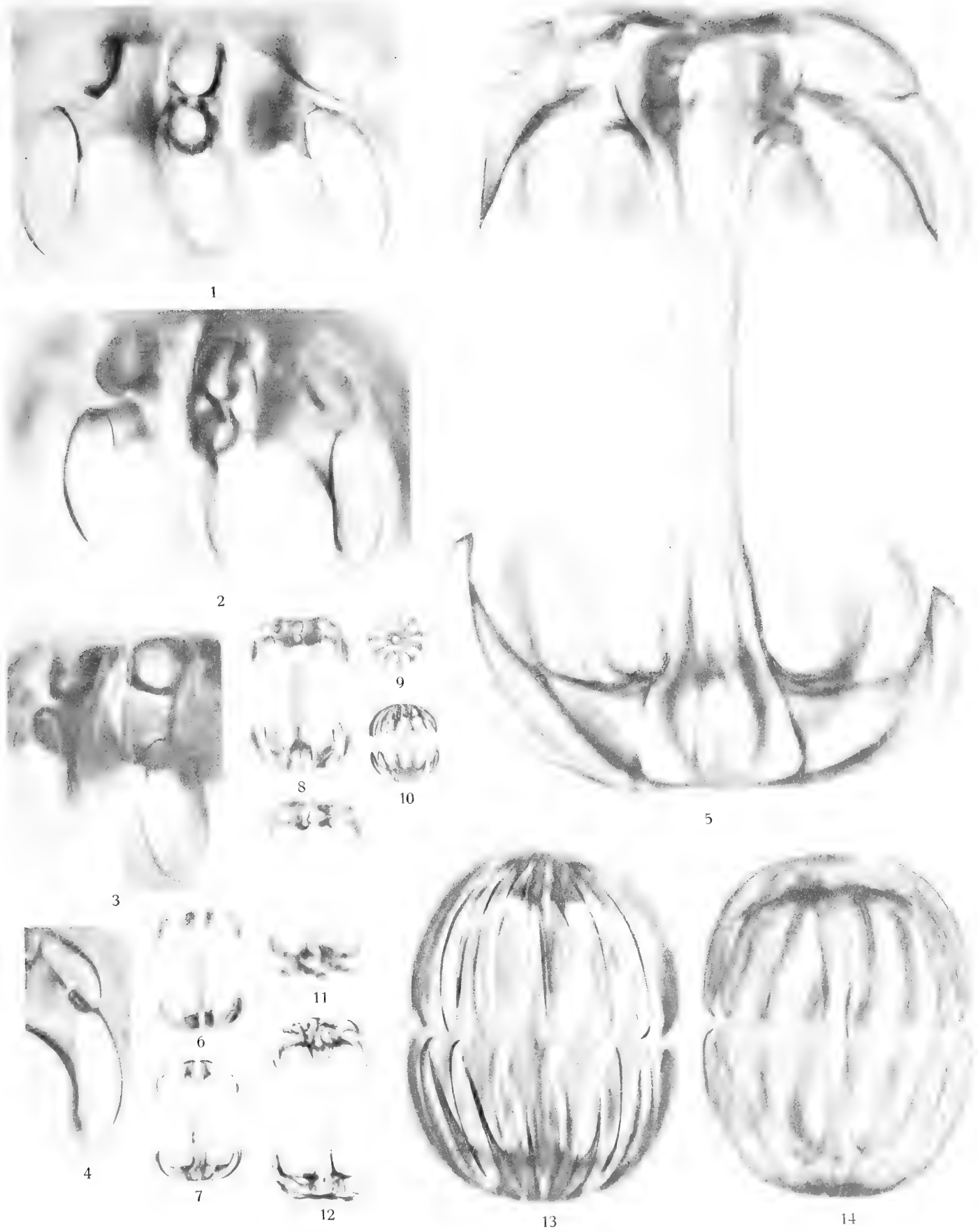


Fig. 1—14 *Hyalonema (Thallonema) geminatum* n. sp.



PLATE 105.

PLATE 105.

**Hyalonema (Thallonema) geminatum** LENDENFELD.

Figures 1-14.

1-14.— Large geminate macramphidises; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6.



Fig. 1—14 *Hyalonema (Thallonema) geminatum* n. sp.





PLATE 106.

PLATE 106.

**Euretid.** Station 4641.

Figures 1-3.

- 1.— Part of the gastral face of the skeleton of the tube-wall; magnified 30; phot. Zeiss, planar 20 mm.
- 2.— Part of the dermal face of the skeleton of the tube-wall; magnified 30; phot. Zeiss, planar 20 mm.
- 3.— View of the skeleton; natural size; phot. Zeiss, anastig. 480/412 mm.

**Hyalonema (Prionema) crassum** LENDENFELD.

Figures 4-37.

- 4-12.— Microhexactines; magnified 200; phot. Zeiss, apochr. 8, compens. oc. 6:
  - 4-6, the same microhexactine;
    - 4, focussed high; 5, focussed on the centre of the spicule; 6, focussed low;
  - 7-10, different microhexactines;
  - 11, 12, a group of microhexactines in a spicule-preparation;
    - 11, focussed higher, 12, focussed lower.
- 13-20.— Micramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 21-25.— Micramphidises; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 21-23, the same micramphidise;
    - 21, focussed high; 22, focussed 0.7  $\mu$  lower; 23, focussed 1.4  $\mu$  lower;
  - 24, 25, two different micramphidises.
- 26-30.— Pinules; magnified 300; phot. Zeiss, apochr. 8, compens. oc. 12.
- 31.— A microhexactine (of which only two opposite rays are in focus); magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4.
- 32-37.— Rays of microhexactines; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:
  - 32, the basal quarter of a ray, focussed low;
  - 33, the basal half of the same ray, focussed higher; 34, focussed still higher;
  - 35, the distal third of the same ray focussed highest;
  - 36, the tip of another ray;
  - 37, another ray.

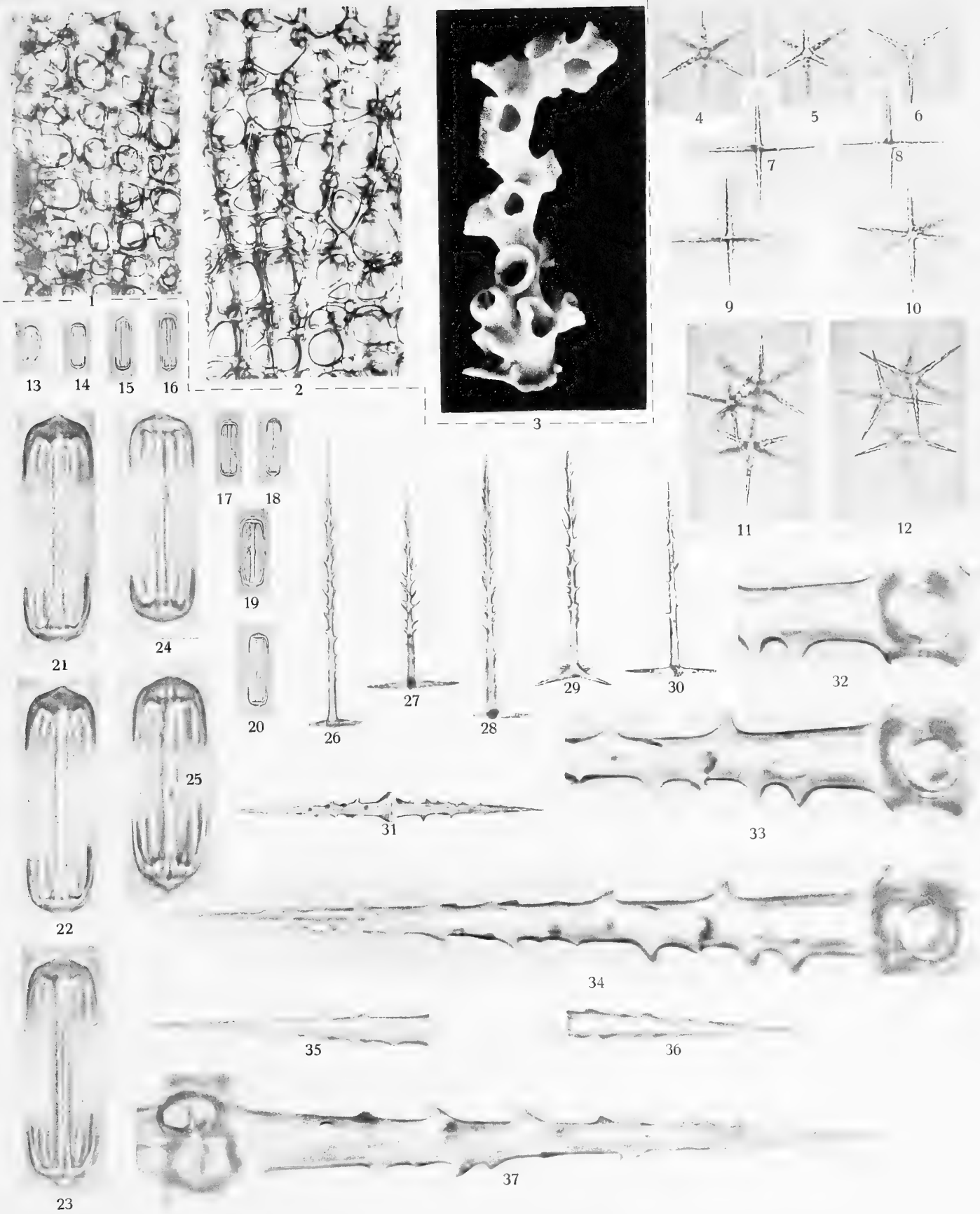


Fig. 1—3 Euretids from Station 4641.  
 Fig. 4—37 Hyalonema (Prionema) crassum n. sp.



PLATE 107.

PLATE 107.

**Hyalonema (Prionema) crassum** LENDENFELD.

Figures 1-20.

- 1, 2.— A large serrated macramphidisc; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12: .  
1, focussed high, on the uppermost teeth; 2, focussed lower, on the centre of the shaft.
- 3, 4.— A terminal anchor of a large serrated macramphidisc; magnified 500, phot. Zeiss, H. I. apochr. 2, compens. oc. 4:  
3, focussed high; 4, focussed a little lower.
- 5.— A medium-sized serrated macramphidisc; magnified 500; \*phot. Zeiss, apochr. 8, compens. oc. 12.
- 6-15.— Paratangential superficial amphioxes; magnified 50; phot. Zeiss, apochr. 16, compens. oc. 2:  
6-10, slender ones from the dermal membrane;  
11-15, stouter ones from the gastral membrane.
- 16.— View of the largest specimen; natural size; phot. Zeiss, anastig. 480/412 mm.
- 17-20.— Parts of an anchor-tooth of a large serrated macramphidisc; magnified 2000; u. v. phot. Zeiss, q. monochr. 1.7, q. oc. 10:  
17, the tip of the tooth, focussed high;  
18, the distal part of the same tooth, focussed lower; 19, focussed still lower;  
20, the middle-part of the same tooth, focussed lowest.

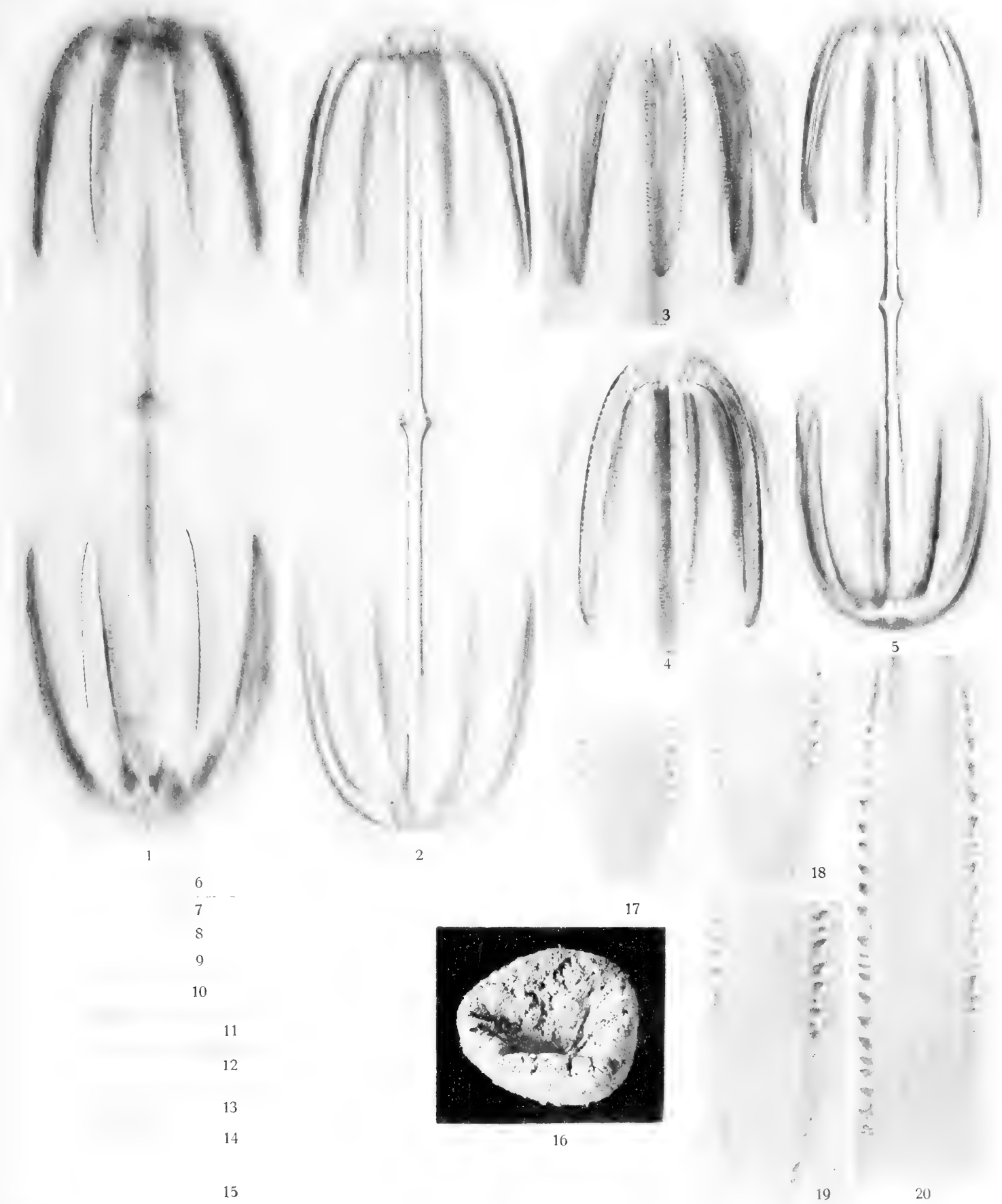


Fig. 1—20 *Hyalonema (Prionema) crassum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.





PLATE 108.

PLATE 108.

**Hyalonema (Prionema) crassum** LENDENFELD.

Figures 1-17.

- 1-9.— Superficial pentactines; magnified 30; phot. Zeiss, planar 20 mm.:  
1, 3-5, 8, 9, hypodermal pentactines;  
2, 6, 7, hypogastral pentactines.
- 10-13.— Hexactine megascleres; magnified 30; phot. Zeiss, planar 20 mm.
- 14, 15.— Two smooth macramphidises; magnified 500; phot. Zeiss, apochr. 8, compens. oc. 12.
- 16, 17.— Parts of smooth macramphidises; magnified 500; phot. Zeiss, H. I. apochr. 2, compens. oc. 4:  
16, an anchor, focussed high, on the tips of the uppermost teeth;  
17, a little more than half of a macramphidise, focussed on the centre of the shaft.

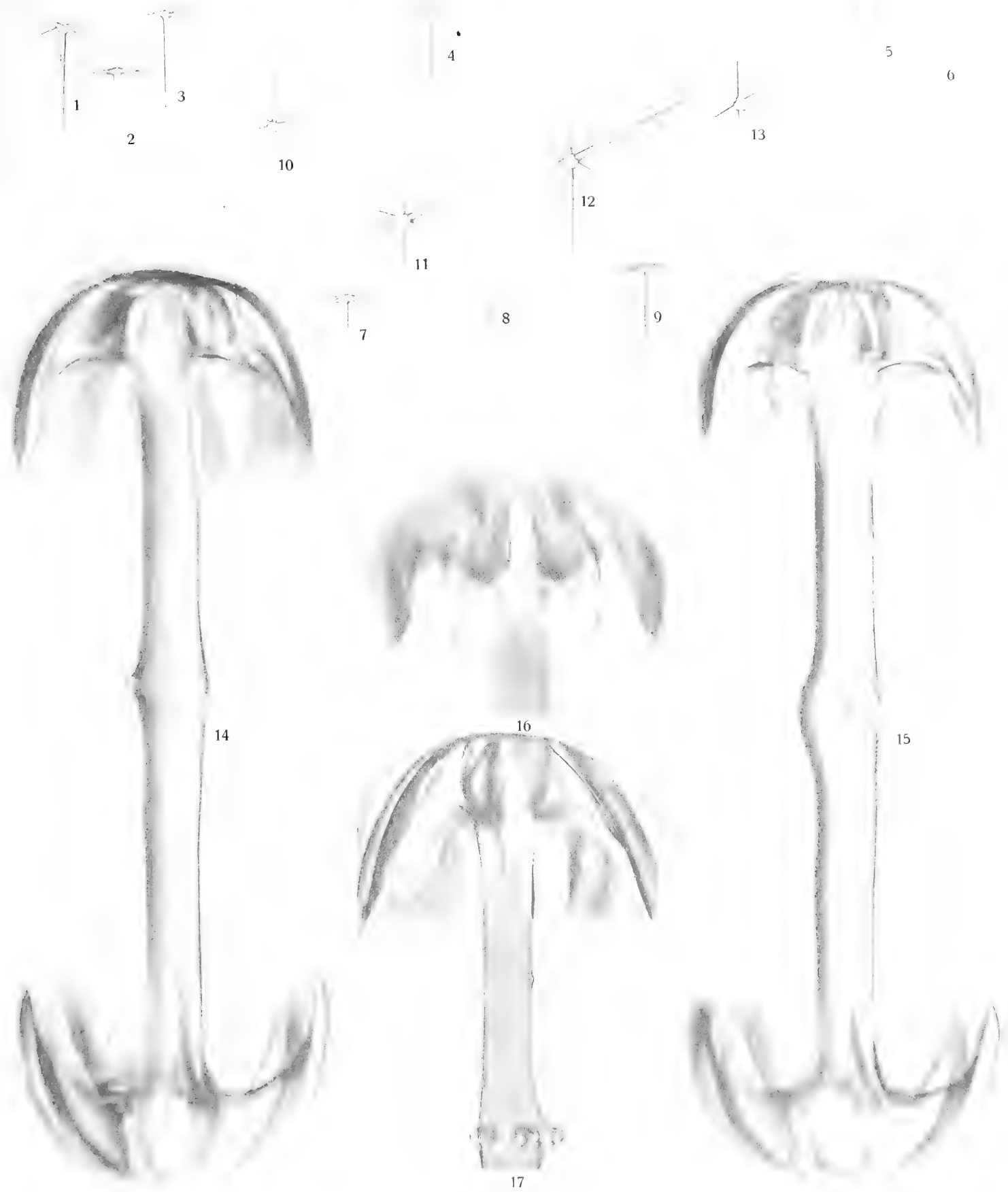


Fig. 1-17 *Hyalonema (Prionema) crassum* n. sp.

Lendenfeld photographed.

Phototype by Charles Bellmann, Prague.



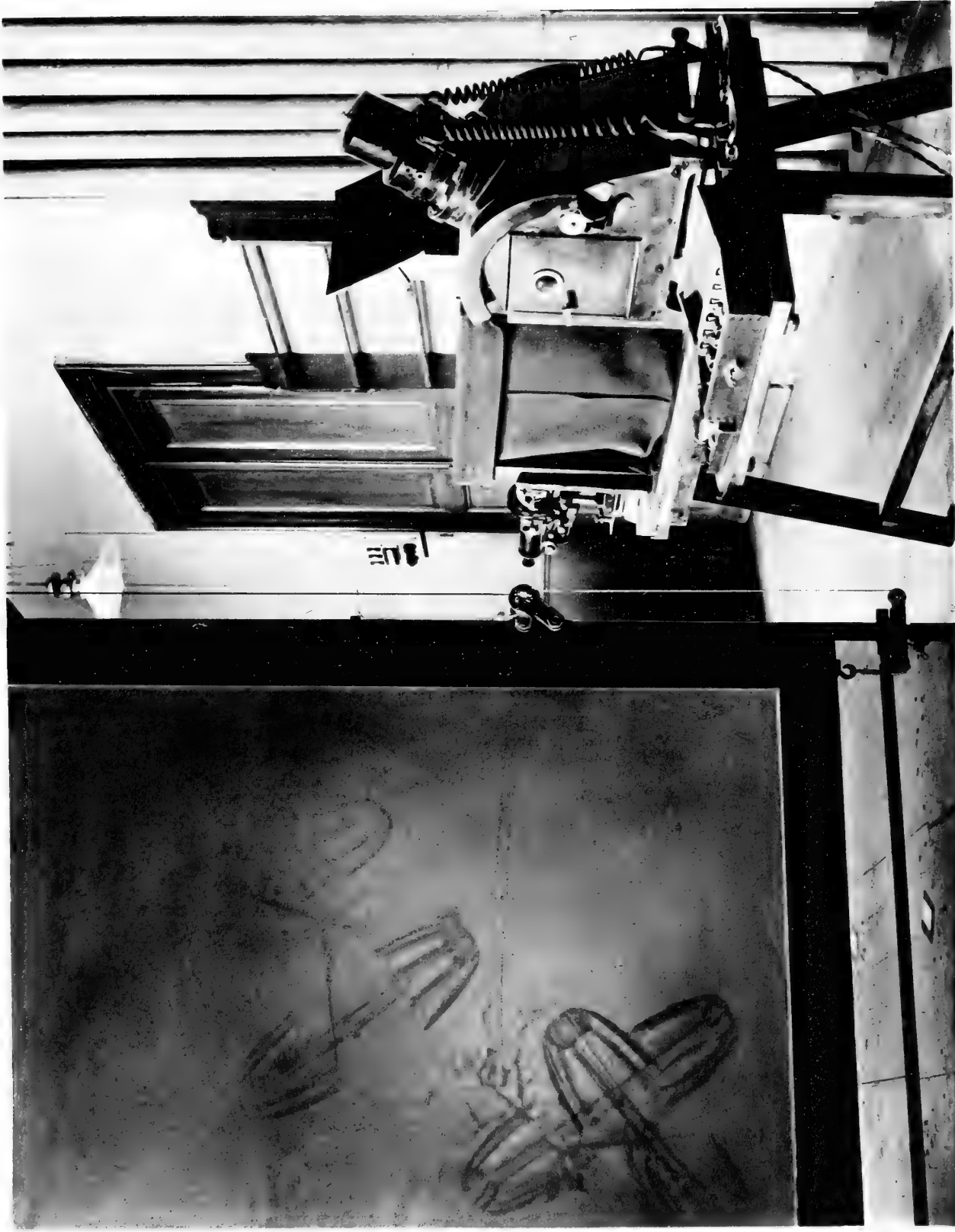
PLATE 109.

PLATE 109.

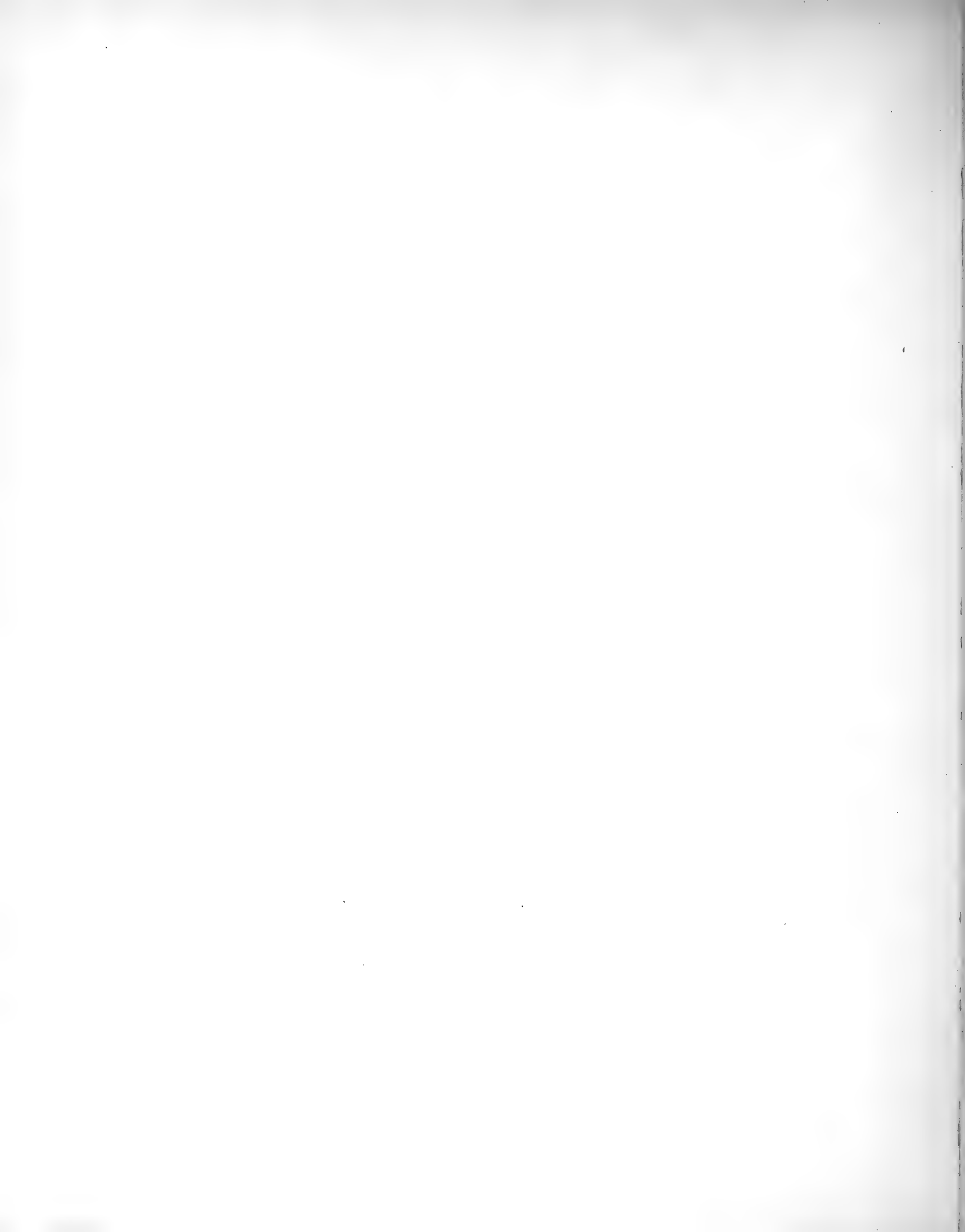
*The projection measuring apparatus.*

Front-view. The mirror is behind the frosted glass-plate and therefore invisible.

The spicules seen projected on the frosted glass-plate are macramphidises and microhexactines of *Hyalonema (Hyalonema) agassizi* Lendenfeld.



*The projection-measuring-apparatus.*







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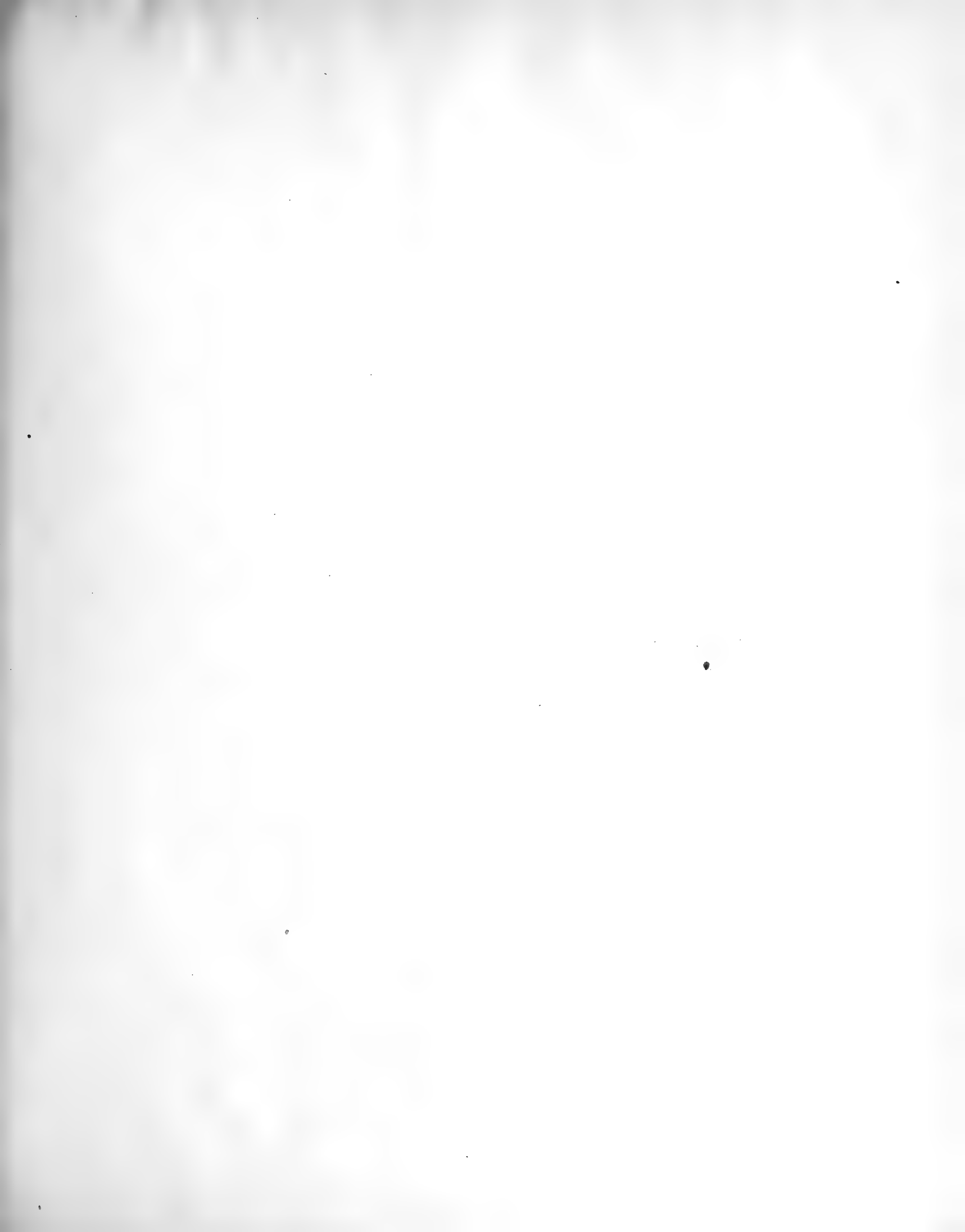
There have been published of the BULLETIN Vols. I. to LIV., and Vol. LVIII.; of the MEMOIRS, Vols. I. to XXIV., and also Vols. XXVI. to XXIX., XXXI. to XXXIV., XXXVI. to XXXVIII., XL. to XLII., and XLIV.

Vols. LV. to LVII., and LIX. of the BULLETIN, and Vols. XXV., XXX., XXXV., XXXIX., XLIII., XLV. to XLVIII. of the MEMOIRS, are now in course of publication.

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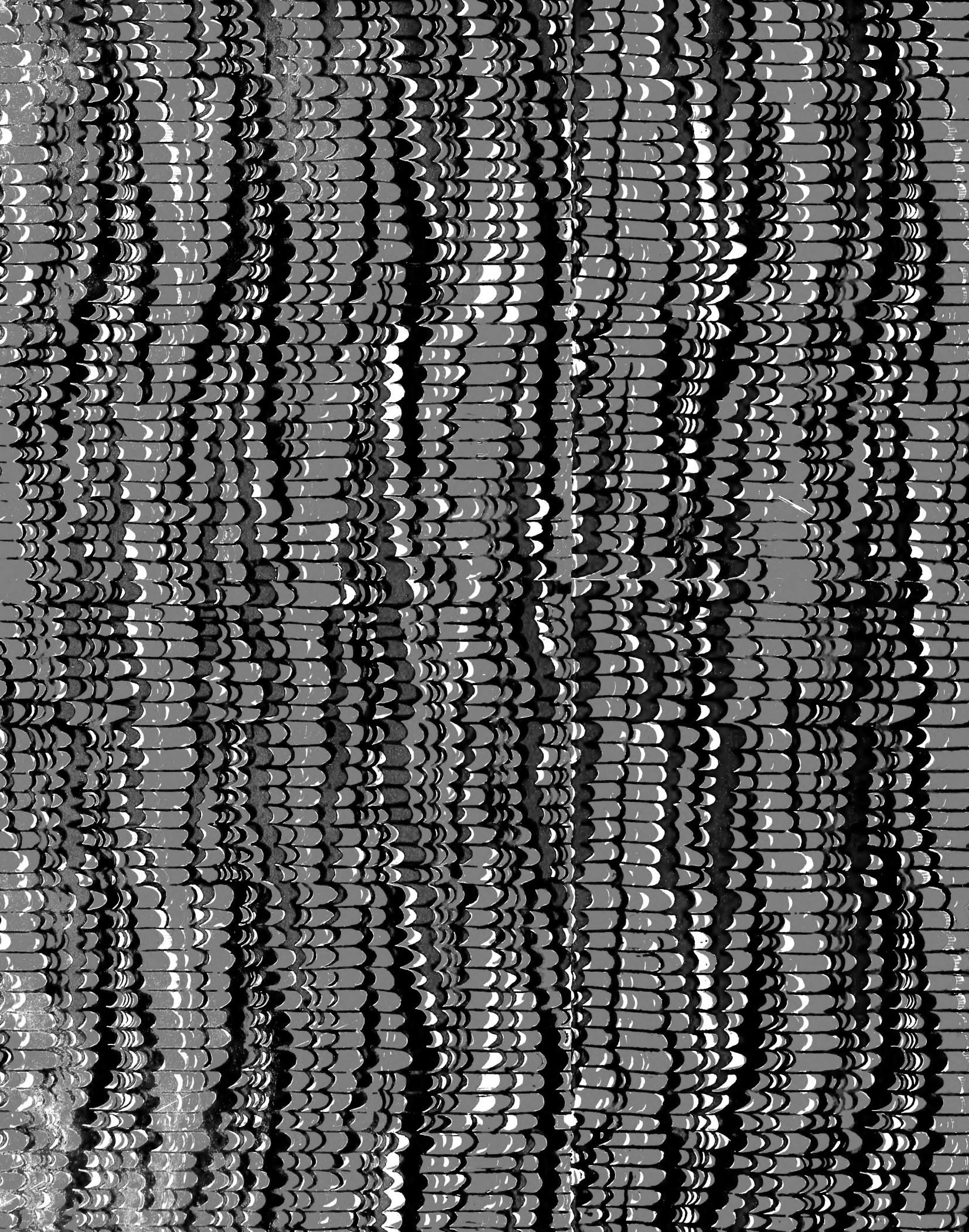




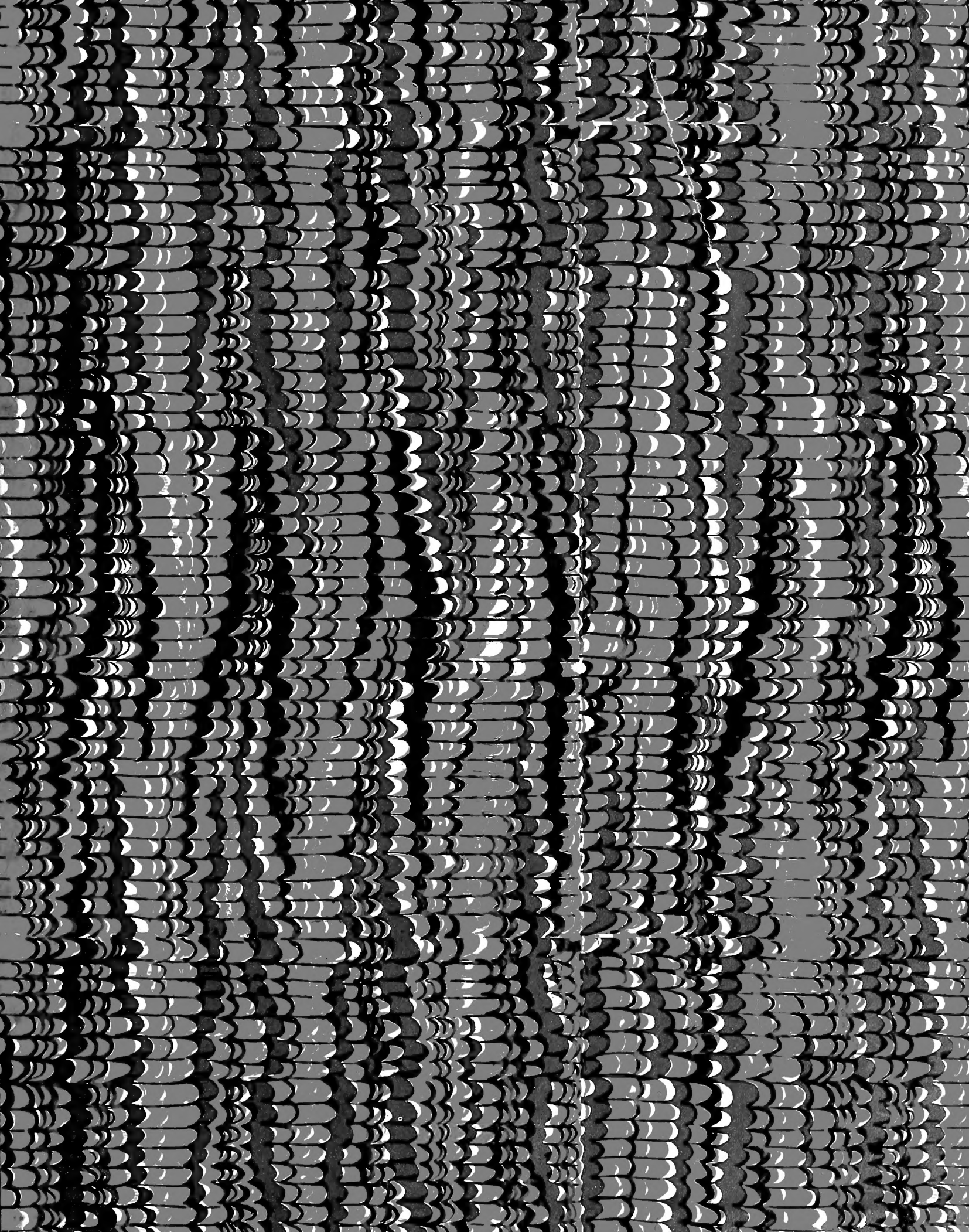














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