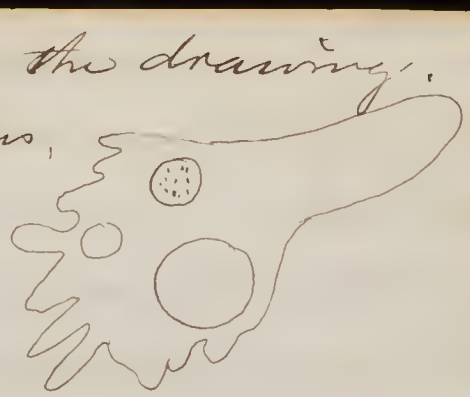
Large Nautiuck No 7.

401 Amœba from Abscess pond. Nov. 7, 1874
At first globular, transparent, colorless, with short digitate pseudopods. 50 div, with pseudop. 10 to 15 by 3 & 4, a few to 20 by 3.
Body & pseudopods finely granular.
Contents a large vacuole 22 div. clear & comp. a second smaller 10 div. A large uniformly granular nucleus 12 div.
Other contents yellowish or brownish food balls, scattered from 1 to 4. A few denuded; many quadrate & oblong square crystals sharply defined measuring 1 by 1 ½ by ½ & 1 by ½ exact form undetermined but some appeared to be octahedral.
Moved slowly, changing form, the pseudopods contracting & disappearing, & protruding & elongating. The large vacuole was observed to collapse during about 2 seconds but did not entirely disappear, as found an oval contracted one 5 long 3 wide ⬭ which then divided into 2 each about 3. These then gradually enlarged to ⬭ 6 and then became confluent in One & then gradually expanded to 22 afterwards contracting to 20 in which condition it remained long after during the examination

First appearance as in the drawing.
Second appearance thus,
pearly body elongated.



Two hours at rest it
appeared Oval, with barely any pseudopods
& measured 65 by 55 with the pulsating
vesicle 22. McIntosh's cercaria
much the first form as seen in Lymne.

The animal contained apparently but
a very few particles of gravity sand.

The granular matter of the entoxance
appeared easily to pass into the
pseudopods, which appeared faintly,
finely but distinctly granular to
the ends.

Around the circumference of the
large vacuole observed 5 granular
balls measuring 4, 5, & 6 div. in which
the granules exhibited active swarming
or molecular motion resembling that of
spermatozoids. Are they testes?

Stephanurus dentatus. In cysts of the kidney of a hog. Two worms 21 lines long by 1 line thick, thick, cylindrical, tapering at the ends; anterior end straight; posterior end of female incurved. Tail short, as thick as long and ending in a minute recurved papilla-like point.

Gordius. Jan. 26, 1890

Mass from Conowingo, Cecil Co. Md

56 individuals. 7 females, 49 males.

As follows:

28 smaller males ranging from 85 to 200 mm long by from 0.375 to 0.5 mm thick

21 larger males ranging from 190 to 310 mm long and 0.625 to 0.875 mm thick

the 7 females from 140 to 200 mm long by 1 and 1.25 mm thick.

Caudal end of male incurved & forked.

Caudal end of female straight & blunt.

Jan. 26. 1890 Examined the following:

White, elliptical bodies, embedded in muscles of three specimens of the Blue-bird, Sialia sialis. obtained by Dr. Warren, in Florida.

Bodies, numerous, embedded among the

muscular fibres, white, opaque, smooth, no definite interior structure distinguishable from 1 mm to 1.75 mm long by 0.04 to 0.072

Similar bodies from Dr. E. Bares, obtained from muscles of a Mallard, Anas boschas. Bodies opaque white, smooth, elliptical. 2 mm to 4 mm long.

In areolar tissue or infusion of pectoral muscles and limbs &c. from two specimens of the Little Blue Heron Florida coerulea. numerous opaque white elliptical egg-like bodies, which pertain to an Acarus = Hypoderas 1.25 to 1.5 mm long by 0.375 broad, with 4 pairs of brown, chitinous, bristly limbs.

Jan 28, 90 A carcass of another Sialia sialis, Dr. Warren's collection No 56 with numerous white egg-like bodies 1 to 2 mm long embedded superficially in muscles especially on back outside of thighs & in neck. No appearance of legs detected. Same as in the other specimen above indicated.

Subsequently observed globules 65 div. diam at rest & without pseudopods, vacuole expanded to 28.

402 From same specimen viewed with No 10 S & B. im. which gave following six testes? 8, 10, 12 div.

Crystals of several kinds – Square ones 1 lg 1, 2 lg 2 & 3 lg 3, mostly 2 lg 2 a few elongated octahedrons of yellowish color 4 lg 3.

Large vacuole 50, Ovarian nucleus 20

Yellow food balls 5 to 10

a few globular algae 7 One denuded ~~XIII~~ 10 lg 8

a few oil globules? 5.

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403 Dec. 2. ~~Astinophaeriana~~ Acanthocystis from Alessum Pond. Colorless, globular 20 div. No 10 S & B. Internal central globule granular 16 diam. separated from outer investment by transparent apparently homogeneous extensure. Fuscate rays up to 12 in length, basal disks 2 wide. Could distinguish no ordinary rays, no nucleus & no atmosphere of fine spicular matter.

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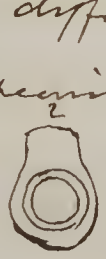
404 Dec. 21 Alessum pond.

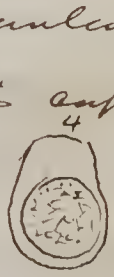
Spiral Difflugia with ridged surface from Abreem pond. Empty shell 40, 34, neck 7 long, mouth 10 wide, from mouth to fundus part of constriction or pentation 18 with No 7 S.H. The vermicular ridges short, sigmoid, semicircular, oval, Y or X shaped with a silvery centre  .

Cattaria papilio Dec. 30, 1874 In Sphagnum of Abreem. Test yellowish in most specimens regularly tapering at sides from broadest part of fundus to mouth. In others, generally larger more or less abruptly narrowed towards mouth. Ball in interior somewhat variable in size, & proportion quantity of green matter or chlorophyl & exterior clear ectosarc. In some the latter appeared more differentiated from the granular endosarc appearing like a transparent capsule.

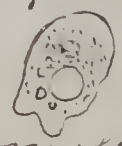
1 
31, 18, 9
Ball 13

2 
30, 22, 12
Ball 15 &
ectosarc 12

3 
26, 19, 9
Ball 14
ectosarc 12

4 
33, 22, 11
Ball 19.

In No 1 Ball with few large chlorophyl & colorless granules in clear ectosarc. In No 2. & 3 the ectosarc differentiated as capsule in No 4 large ball full of fine grains of chlorophyl.

Jan. 8th 1875 Minute Amœba 15 & 10, with No 10 S.D.B. Among Vitella, supplied by Mr. Hollman in one of his "life slides". The minute Amœba were very numerous, in assoc. with Monads, Spirillum &c. Appeared to be 3 contractile vesicles, generally one would expand at a time gradually up to 3 div. & then slowly or more rapidly contract again to a mere point. Sometimes two would expand together. Fine granular entoplasm occupied posterior 4/5 of body  Could not positively determine existence of a nucleus. Found most of time a small body in advance of more obvious vacuole or contractile vesicle, which was less distinct & about 2 div. diam. but it at times appeared like a vacuole & apparently at times disappeared from view. The dimensions for an individual at rest excepting the varying change of outline. Body remained nearly in same position. Was sometimes circular, sometimes oval, with slight protrusions mostly from hinder part.

In another individual spread out to 18 & 12 very transport & finely granular, besides the three distinct & changing vacuoles, there was an indistinct nucleus about 2 which remained unchanged.

Individuals slug-like in form 18 & 4 more partly actively forward, ectoplasm preceding the granular entoplasm, sometimes

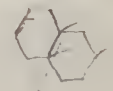
projecting lateral processes, and occasionally branching. Others at rest circular, oval or even irregularly quadrate or triangular, with papilliform processes projecting from all parts of circumference.

In many of the limaciform actively moving individuals, dragged some flocculent dirt after them. The vacuoles in all cases exhibited a faint pinkish hue.

Nebela. and its allies. In many the test constructed of disks alone or disks with bacilla, of beautiful regularity, in others of irregular outlines Mar. 30, 75 Noticed an empty test of N. numnulina 33 long 22 wide. At the fundus half mainly of circular disks, uniform & regular 2 div, with a few ovalles to 6 long & ½ wide. The mouth half of bacilla mainly and disks 1 div diam or less. All the disks & bacilla of this specimen were beautifully regular.

Mar. 31, 75 Euglypha compressa without hairs, for Abscess 24 long 21 broad mouth 7 (with No 7 S.H) apparently 16 pinuls to mouth.

Also E. brunnea 13 long 10 broad mouth 3 broad, test 5 thick & 2 wide at mouth end. No 7 S.H.

April 5/75 Euglypha compressa, empty test with a good view of the mouth which was nearly round, 7 by 6 with 16 oral scales. Length of test 24 breadth 18 ~~thickness~~ 9. Hairs lateral 5 long, apparently starting from angles of the hexagons, thus. 

April 6. Cathaina papilio. Sphagnum Arbuscum. Active & in good condition, with many chlorophyl. grains mostly about 1½ div. Body connected by numerous bands to test. Among food was a jointed filamentous algae reaching from near mouth to near tip of fronds. Algae 32 long joints 8 long 2 broad. chlorophyl within shrunken & brown. Pressure by diffusing the structure of the entrance brought into view on one side near fronds of entrance a ~~globular~~ uniform granular nuclear body such as often seen in Amoeba. & measuring 7 div. Test 35 long 24 broad mouth and 10 (Meas. with No 7.) Carmine did not stain the granular nuclear body. ~~and~~ but stained 8 or more corpuscles scattered among & about the size of the chlorophyl grains.

1875

April 10 Obtained water from Darley Spring, which examined same day and subsequently to Ap. 16, Exhibited with Dociliums & large Navicular in abundance the following Rhizopods.

Multitudes of Aurelia zonalis.

Numerous Difflugia probably several species.

Numerous Aurelia, several species.

Up to Ap. 16 noticed one Catharia ligata

Not unfrequently Lesquereia - apparently two species C. spherica & C. scutiformis.

Many colorless Acanthocystis.

A few Cyphoderia

An occasional Difflugia, the oval one with tilted mouth, a pyriform one, and the Echinopyxis.

No Arcellae observed up to Ap. 15.

1877 May 16 In looking for Trematode parasites in Rana lis pervous from "Neck" - found none but observed many Chaetogaster, in one of which in intestine noticed 3 Arcellae.

July 5, 1877 In a bunch of Limnias from beneath a stone from Fairmount Dam counted 118 tubes or individuals.

July 7th 1877 Megalotrocha albo-flavicans.
Found abundantly in bunches adherent to
under side of stones below Fairmount Dam, in
association with Limnias, which occurs isolated
and also in profuse bunches. Associates
Spirillia fragilis, &c. Individuals of
Megalotrocha with bunches of 3 or 4 eggs adherent
Animal about 60 long (with No 4 S.H); the trochal
disk 10 diam. body below disk about 4 thick.
All meas. with No 4. S.N.

<u>Gregarina</u>. Lieberkuhn. Mem. cour. de l. Acad.
Belg. XXVI, 3-27
Schmidt. Abh. Senck. Gesel. I, 1854,
170, 173 Tab. XIV.
Stein. Müll. Archiv 1845. In <u>Rectinus</u>
<u>pusmatus</u> = cytoblesin intestine.

Lumbricus - Earthworm. Anatomy. E. R.
Lankester. Qu. Jour. Mic. Sc. 1864-5.

April 23, 1882. In morning caught in my study a Cernatia forceps. Intestine contained about a dozen Gregarines of varying size, milk white opaque. In general form. At first comparatively quite. Appeared to have a delicate proboscis by which it may probably have been attached to the mucous membrane of the stomach. Proboscis soft, cylindrical sometimes tapering, but usually appeared as if broken at the end & often at the base. sometimes appeared globular or in its place were several globules. It was faintly granular. Head large variable in form, according to the condition of contraction, longer or about as long as broad. Body clavate, blunt behind & tapering, varying according to degree of contraction. Animal active. Moving forward, contracts, fore before backward, expanding, bending wrinkling transversely, especially at the tail end. Nucleus usually invisible excepting in the smaller ones.

Red Ant. May 3, 1882. Wallingford Station on Westchester R. R. In a piece of wood in vicinity. A nest of Red ants, F. under a flat stone about 1 foot by 7 inches. Adherent to the under side were six distinct groups, of white Aphides closely crowded and even piled on one another; the largest group about 3 in. by 1 in; the smallest about ½ in diameter. Also five groups of a small red Coccus; the largest group 1½ long by ¾ in wide; the smallest group ½ in long by ¼ wide. Not an aphis nor a coccus was on the ground beneath, which was furrowed by tortuous galleries through which many of the ants were running, although most of them clung to the under side of the stone around their flocks of cows. All the ants were of the one kind. Ants and heads together were included within a space of six by four inches.

Gregarinoid parasite. May 4, 1882. See drawing of date. From intestine of the white wood worm - Enchytraeus? - with only 2 rows of pedal spines) Bodies fusiform, of variable size, no head, but a short mammilliform beak; tapering posteriorly and acute or obtuse. The larger uniformly and distinctly granular, with a nearly central spherical or slightly oval clear nucleus and a more defined central nucleolus. The larger ones mostly contained from one to five curved elliptical transparent clear bodies (see fig. a) usually occupying the free part, but sometimes posterior. The smaller ones pale granular with a central nucleus; but in many of the smallest it was absent or else escaped notice.

May 8, 1882 Capsella bursa pastoris on the University Ground. Extremes of specimens in flower & fruit. Smallest 9 lines long; largest 2 feet 1/4 of an inch.

Eolis. Found on Ulva latissima, thrown on beach at Atlantic City, March 31, 1877. Six specimens from 2 to 4 lines long. Body translucent whitish, or several pale yellowish or brownish. Head blunt, with 4 divergent tentacles. Foot lingueform obtuse behind & not reaching beyond the papillae. The latter fusiform, externally translucent whitish but brown within the interior; tips white & blunt. The papillae appeared to be arranged in transverse rows on each side of the body & the smallest in front & behind. Apparently 8 or 9 rows.

Bacillus anthracis. May 12, 1882 Dr. R. Ostlandfelter. Friday afternoon. Stated that in Salem Co., N. J. he had been called to see a herd of cows, apparently all well. From the flock during the past year about a dozen had died, and were investigated by the Board of Health. They had lately been moved & were apparently all well. To increase the stock four had been added & of these two had subsequently died. A cow apparently well on Wed. May 10th was milked in the evening as usual. The next morning Thursday it died. Some

day Dr. S. made post mortem examination. The spleen much engorged & from it took blood, of which gave me for examination a 4 oz. bottle full, the following day Friday afternoon. I examined this immediately afterwards, and found it teeming with <u>Bacilli anthracis</u>. straight, when two or three united bent or zigzag, entirely motionless. Form .006 to .03 mm long. A chain of 3 connected zigzag segments measured 14 div. mic. scale with 1/10

Monday May 15 the Bacilli appeared to be encysted or at least largely replaced by an immense increase of very minute spherules or perhaps ellipses, hardly larger than bacilli, or minute dumbbells, or twin corpuscles in varied degrees of division, or in chains of such dumbbell like bodies of variable length a chain of 3 dumbbells measured 3 divisions of the micrometer with 1/10 wales.

June 1. 1882 Gregarine in Nyctobates pennsylvanicus. from under bark, Fairmount Park.

Gregarina numerous in ventriculus. White remarkably long and narrow, ranging from 1.25 to 1.5 mm long by 0.125 to 0.175 broad. Head small spheroid 0.1 to 0.15 diam., feebly papillate at summit. Body cylindroid, wider than the head at the free-part, narrowing behind, posterior extremity blunt. Outer membrane longitudinally striate, and at posterior extremity apparently ciliate. A young one was clavate with head the indent part. Length 0.3 mm, width of head extremity 0.1 mm. The nucleus was visible to one side of the body & this appeared also to contain two large vacuoles. The integument was distinctly longitudinally striate & appeared also to be covered with minute non-vibratile cilia, not however extending on the head.

One opened June 3. Numerous Gregarines, many of large size and in conjugation. This is peculiar: two individuals of same or different sizes or ages lying side by side or parallel & coiled laterally by the head as represented in fig. Sometimes more or less embracing or partially twisted together, but usually quiet and lying side by side. Often slow contraction of any part of the body with transverse wrinkling.

Different individuals measured from 0.75 to 2 mm long.
June 4. Another beetle opened, and many Gregarines
but none in conjunction. The smallest seen
figured, oval, with an compressed elliptical papilla
as seen in section to the head. Nucleus central, very
obvious with several irregular nucleoli. Body &
head distinctly striate longitudinally. Body also
posteriorly finely ciliated. Length 0.06 mm 0.03 broad.

June 9. Another beetle opened. Many Gregarines,
mostly small. In a number from 75 to 90 μ long
or 0.3 to 0.36 long by 0.06 wide the nucleus was
oval, central or anterior and with a number
of bluish nucleoli nucleus 0.04 by 0.032 wide
nucleoli 1 & 2 or 0.004 to 0.008. nucleus 0.04 by 0.032
with few nucleoli from 2 to 2½ & some smaller. Oc-
casionally at back end of body. In one nucleus
counted seven nucleoli

Dec. 16th 1885. Worms in ice supplied by Dr. S. C. Thornton, Morristown, N. J.

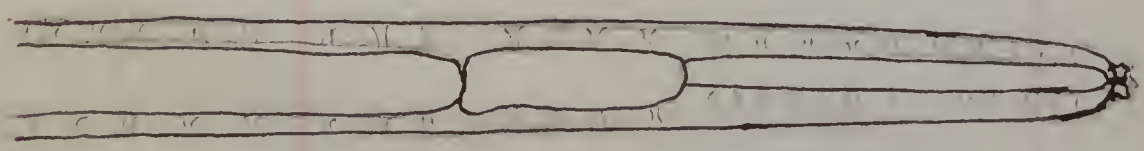
No 1 Nearly an inch long by 0.15 mm broad, 48 segments; first with blunt conical lip & no spines. Four rows of spines with 3 spines in each fascicle. Spines slightly sigmoid or nearly straight, attached end hooked, free end pointed & not forked.

No 2. More robust and white 4 lines by 0.25 mm 34 segments including oval segment. Generative apparatus between 3 & 6th spine segments.

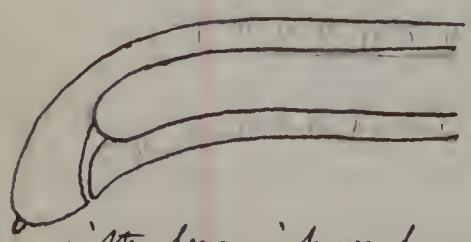
No 3 5 lines with 36 segments Spines 0.3 to 0.375 mm

No 4 6 lines with 50 segments.

1888 Jan 14 Pieces of Cod-fish, Gadus callarias, with a dozen reddish and brownish worms coiled and embedded in the flesh. Ascaronema capsularia



Mostly 20 lines long by 1 mm broad smallest 12 lines by 0.5 mm.



Worm translucent reddish, with brownish or brownish white intestine. Cylindrical tapering at both ends; head papillate, tail and incurved obtuse with a minute mucro. Oesophagus 2.5 mm long by 0.7 wide - second portion of intestine cylindric, milk white half as long as oesophagus 0.375 wide; third portion intestine non capacious cylindric. Rectum short, ending about

0.25 from tail end. Generative apparatus undeveloped.

1888 Jan. 18.

Spiroptera megastoma Rud. Filaria megastoma Sch.

Portion of stomach with swelling or tumor about an inch broad, multilocular, obtained from it 66 females & 42 males, former from 10 to 14 mm long latter 7 to 9 mm long. Tail of male with two spicules, and five papillae on each side; 4 in advance & one behind anus. From Vet. Dep. submitted by From the Horse.

Jan 25 Delicate hair-like worms from the intestine of a Cat. Hair like, pale chocolate brownish, attenuated towards the extremities. ———— Head rounded unarmed. Posterior extremity spiral; more so in the male. Tail short, acute. In female tail curved conical and ending in an abruptly acute point

5 females 3 inches long 0.25 mm broad

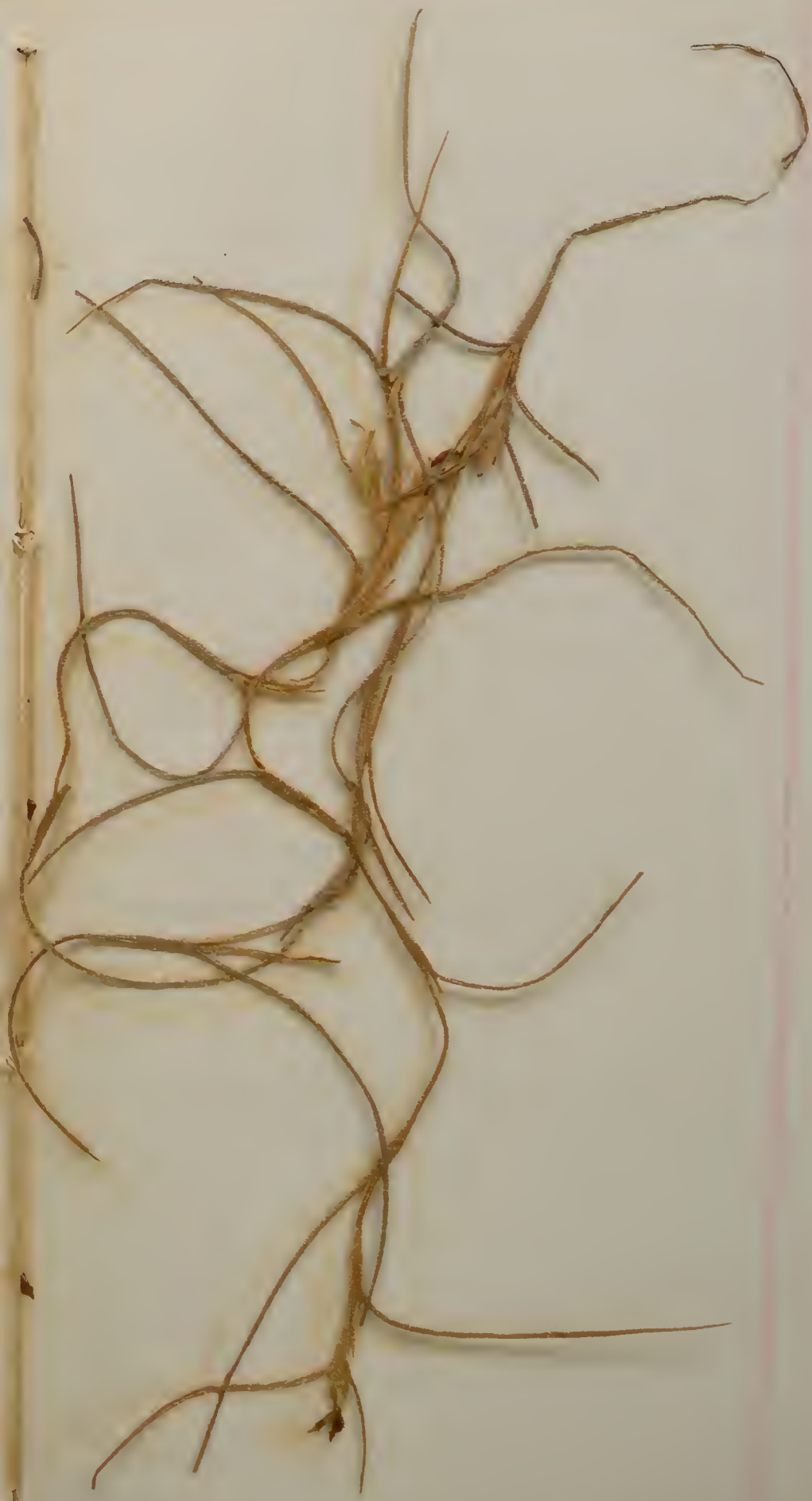
2 males 16 lines long 0.125 mm broad.

[illegible]

[illegible]

Bar Harbor, Mt. Desert Me.
August 1886

Nemertes. In great numbers under stones between tides. From an inch to 3 inches contracted by 1 m to 3 m m. elongate to double extent. Mostly look smoky black others variably blackish to olive brown. Underpersons former appear olive green & others brown. Head flattened conical, with a pair of lateral forceae. Eyes variable 2 to 6 on each side. Proboscis narrow, without the nail-like armature. Intestine dendroid or laterally pouched, Body behind attenuated, acute. Mouth terminal Gen. aperture large ~~de~~ conspicuous, below the mouth.



Acanthocystis Carter

Acanthocystis viridis
Greeacher:
Greef:

Actinosphaerium viridis Ehr.

Acanthocystis turfacea, Carter

Protista τὸ πρωτιστον, the first of all, primordial.

Monera μονήρης, simple

Plastides

Cytodae, Cytodes, ~~[illegible]~~, plasma masses without nucleus.

Gymnocytodes = naked cytodes

Lepocytodes, = membranous or covered cytodes.

Cellulae or Cyta, Cells, plasma masses with nucleus.

Gymnocyta = naked cells

Lepocyta = membranous or covered cells.