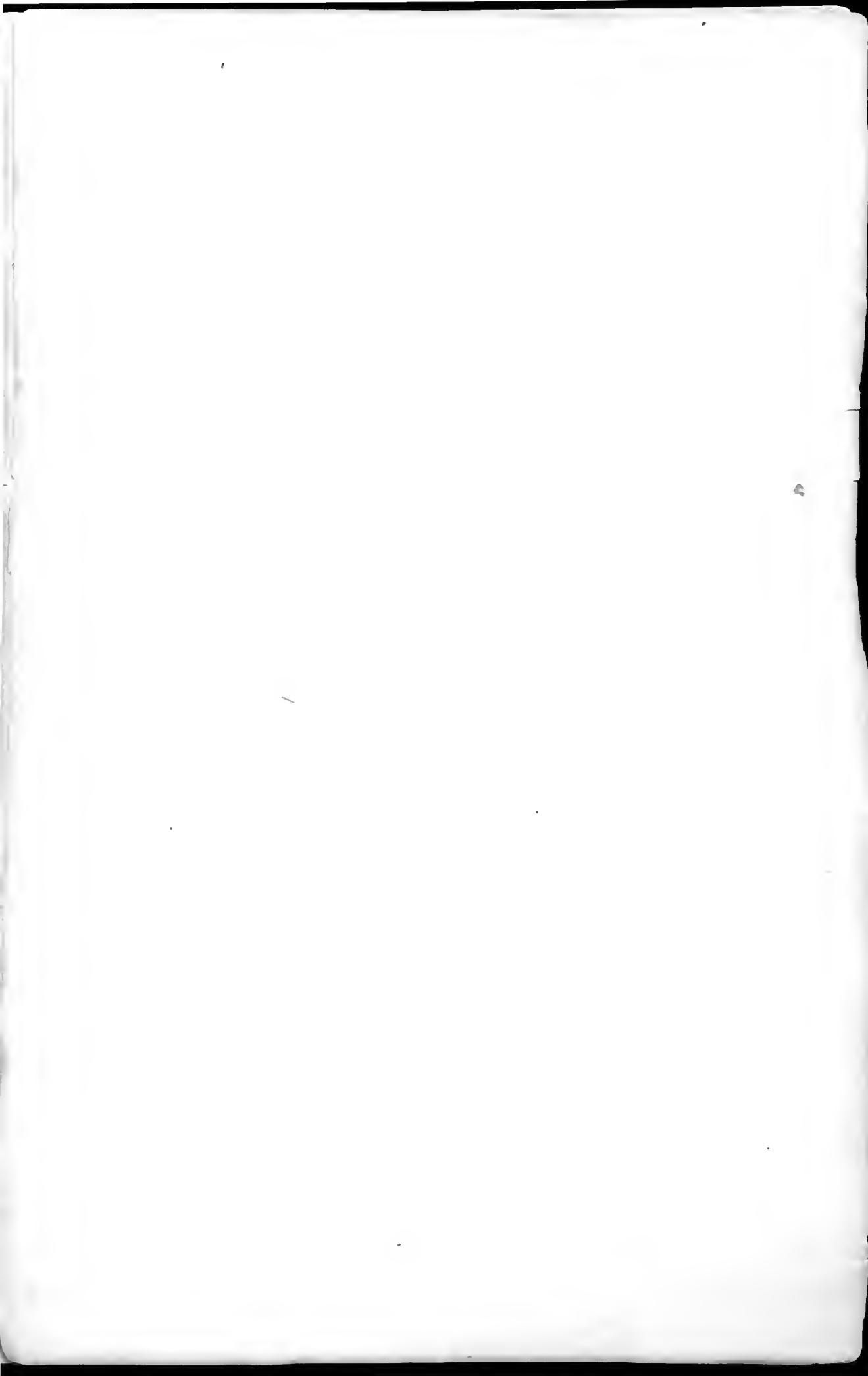


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Call #/80 (2)
1874-90



ACADEMY
NAT. SCI.
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MS. 227

Large Nartnack No 7.

401 Amoeba from Alveum pond. Nov. 7, 1874


At first granular, 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. near & comp. a smaller 10 div. A large uniformly granular nucleus 12 div.

Other contents yellowish or brownish food balls, scattered from 1 to 4. A few denticles; many quadrate & oblong square crystals sharply defined measuring $1\frac{1}{2}$ by $1\frac{1}{2}$ & $1\frac{1}{2}$ 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 formed an oval contracted one 5 long 3 wide  which then divided into 2 each about 3. These then gradually enlarged to 006 and then became confluent in one & then gradually expanded to 22 after contracting to 20 in which condition it remained long after during the examination.

First appearance as in the drawing.

Second appearance this,
part of body elongated.



Two hours at rest it

appeared oval, with hardly any pseudopods
& measured 65 by 55 with the pulsating
vibrile 22. On disturbance resumed
much the first form as seen in figure.

The animal contained apparently but
a very few particles of granular matter.

The granular matter of the substance
appeared ready 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
spermatozooids. Are they testes?

Stephanurus dentatus, in cysts of the kidney
of a hog. Ten worms 21 lines long by 1 line thick,
thick, cylindrical, tapering at the end; 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 fibers, white, opaque, smooth,
no definite interior structure distinguished
from 1 mm to 1.75 mm long by 0.04 to 0.072

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

In meso-ax tissue in surface of pectoral muscles
and limbs etc. from two specimens of the
Little Blue Heron Florida coccyzus.
numerous opaque white elliptical
egg-like bodies, which pertain to a
Scarus = Hypoderma 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. Waver's collection 1056 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 glabella 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 by 1, 2 by 2 + 3 by 3, mostly 2 by 2 a few elongated octahedrons of yellowish color 4 by 3.

Large vacuole 50, ovarian nucleus 20

Yellow food balls 5 to 10


a few glabular algae 7 One denied $\frac{109}{8}$

a few oil globules? 5.

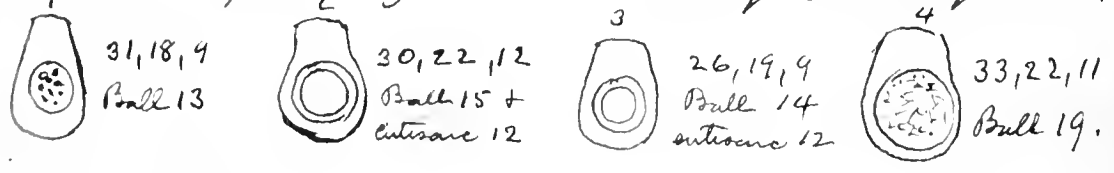
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Dec. 2. *Acanthocystis* from Alseum Pond. Colorless, glabular 20 div. No 10 S & B. Internal central glabule granular 16 diam. separated from outer investment by transparent apparently homogeneous ectosome. Truncate eggs up to 12 in length, basal dikes 2 wide. Could distinguish no ordinary eggs, no nucleus & no atmosphere of fine spicular matter.


404 Dec. 21 Alseum pond.

Spiral Diffugia with ridged surface from Alveum pond.
 Empty shell 40, 34, neck 8 long, mouth 10 wide, from mouth
 to furthest part of constriction or pentation 18 with No 7 S.H.
 The verruculae ridges short, sigmoid, semicircular, oval,
 Y or X shaped with a silvery centre .

Bothrocera papilio Dec. 30, 1874 In Sphaerium of
 Alveum. Test yellowish in most specimens
 evidently tapering at sides from broadest part of
 furrows to summit. In others, somewhat longer more
 or less abruptly narrowed toward summit. Bull
 in interior somewhat variable in size, &
 proportionate quantity of green matter or chlorophyll
 & exterior clean ectosome. In some the latter
 appeared more differentiated from the granular
 interior appearing like a transparent capsule.



In No 1 Bull with few large chlorophyll & alveolar granules in clear
 ectosome. In No 2 & 3 the ectosome differentiated as capsule
 in No 4 large bull full of fine grains of chlorophyll.

Jan. 8th 1871. Minute *Amoeba* 15 by 10, with 10 S. D. H.
Among *Stitella*, supplied by Mr. Hollman in
one of his "life slides". The minute *Amoeba* were
very numerous, in assoc. with *Monas*, *Spirillum* &c.
Appeared to be 3 contractile vacuoles, generally one
would expand at a time gradually up to 3 div. & then
shrink or some rapidly contract again to a more point.
Sometimes two would expand together. Fine granular
entosome occupied anterior $\frac{4}{5}$ of body  Could
not positively determine existence of a nucleus. Found
most of time a more body in advance of more obvious
vacuole or contractile vacuole, which was less distinct
& about 2 div. diam. but it at times appeared like a
vacuole & apparently at times disappeared from view.
The description for an individual at rest
excepting the varying change of outline. But
remained near in some position. Was
sometimes circular, sometimes oval, with slight protu-
sion mostly from hinder part.

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

Individuals sleep like in form 18 by 4 more pretty actively
forward, entosome preceding the granular entosome, sometimes

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

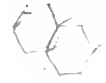
In many of the limaciform actively moving
individuals, dragged some flocculent dirt after them.

The vacuoles in all cases exhibited a
faint pinkish blush.

Xeloda. and its allies. In many the test constructed of disks
alone or disks with bacilla, of beautiful regularity, in others
irregular entires. Mar. 30, 75 noticed an empty test of
A. munita 33 long 22 wide. At the forward half mainly
of circular disks, uniform & regular 2 div, with a few
radial to 6 long & 1/2 wide. The north 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, from *Abasco*
29 long 21 broad with 7 (with NO 7 S.H.) apparently 16 points
to mouth.

An *E. brownsea* 13 long 10 broad with 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. *Cathania papilio*, Sphagnum Museum - Netive + in good condition, with many chloroph. grains mostly about $1\frac{1}{2}$ dia. Body connected by numerous bands to test. Among food was a jointed filamentous algae reaching from near mouth to near tip of pedicel. Alga 32 long joints 8 long 2 broad. chloroph. within shortness & brown. Pressure by diffusing the structure of the entrance brought into view on one side near pedicel of entrance a ~~globular~~ uniform granular nuclear body such as often seen in *Aureocella*, + measuring 1 dia. Test 35 long 24 broad mouth end 10 (Meas. with No 7.) Carmine did not stain the

granular nuclear body, ~~and~~ but stained 8 or more copunctules scattered among + about the size of the chloroph. grains.

1875

April 10 Obtained water from Dauley Spring, which examined same day and subsequently to Ap. 16, exhibited with deciduous & large Nereididae in abundance the following Rhizopods.

Multitudes of *Aurelia zonalis*.

Numerous *Ovulae* probably several species.

Numerous *Aurelia*, several species.

Up to Ap. 16 noticed one *Catharina ligata*

Not infrequently *Loxocera* - apparently two species

C. spherica & *C. scutiformis*.

Many colorless *Acanthocystis*.

A few *Cyphoderia*

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

No *Arceles* observed up to Ap. 15.

1877 May 16 In looking for Trematode parasites in *Planorbis* persons from "Neak" - found none but observed many *Chaetogaster*, in one of which in intestine noticed 3 *Arceles*.

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

July 2th 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 *Spruyella fragilis*, etc. Individuals of *Megalotrocha* with bunches of 3 or 4 eggs adherent. Animal about 60 long (with 104 S.H.); the trochal disk 10 diam. body below disk about 4 thick. W.L. meas. with 104. S.N.

Gregarina. Liebertkuhn, Mem. cour. de l'Acad.

Belg. xxvi, 3-27

Schmidt, Abh. Senck. Gesel. 1, 1854, 170, 173 Tab. XIV.

Stein. Müll. Archiv 1845. In Reovirus, pneumatus = cytodies in intestine,

Lumbricoides - Earthworm. Anatomy. E. R. Lankester. Du. Jour. Mic. Sc. 1864-5.

April 23, 1882. In morning caught in my
study a Geomastix forceps. Intestine
contained about a dozen Gregarines,
of varying size, milks white opaque.
In general fusiform. At first comparatively
quite. Appeared to have a delicate
pubescence by which it may probably
have been attached to the mucous
membrane of the stomach. Pubescence
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 ac-
cording to degree of contraction. Animal
active. Moving forward, contracting first
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
H. under a flat stone about 1 foot
by 4 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 $\frac{1}{2}$ in diameter.
Also five groups of a small red Coccus;
the largest group $1\frac{1}{2}$ long by $\frac{3}{4}$ in wide; the
smallest group $\frac{1}{2}$ in long by $\frac{1}{4}$ wide. Not
an aphid 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. taper-
ing posteriorly and acute or obtuse. The larger
uniformly and distinctly granular, with a nearly
central spherical or slightly oval clear nucleus
in a more defined central nucleolus. The larger
ones mostly contained from one to five curved
elliptical transparent clear bodies (see figure)
usually occupying the fore 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 *Caprella hirsuta pectoris* on the
Municipal Ground. Extremes of specimens
in flower & fruit. Smallest 9 lines long;
largest 2 feet $\frac{1}{4}$ of an inch.

Eolis. Found on *Ulva latissima*, Annon in 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 almost ~~to~~ 4 divergent tentacles. First linguiform setine behind & not reaching beyond the papillae. The latter fusiform, externally translucent whitish, vent brown on 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. P. Chaffetz. Hinds afternoon. Stated that in Cullem 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 in quarantine 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. G. made post mortem examination. The spleen much engorged & from it took blood, of which gave me for examination a 4oz. bottle full, the following day Friday afternoon. I examined this immediately afterwards, and found it teeming with Bacillus anthracis, straight, when two or three united bent or zigzag, entirely unarticulated. From .006 to .03 mm long. A chain of 3 connected zigzag segments measured 14 div. mic. scale with $\frac{1}{10}$

Monday May 15 The Bacilli appeared to be unvital or at least largely replaced by an immense increase of very minute spherules or perhaps ellipses, hardly larger than broad, or minute dumbbells, or twin capsules in various 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 $\frac{1}{10}$ scales.

June 1. 1882 Gregarina in *Nyctalestes pennsylvanicus*.
from under bark, Fairmount Park.

Gregarina numerous in ventricles. 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 cylindrical, wider than the
head at the fore-part, narrowing behind, posterior
extremity blunt. Outer membrane longitudinally
striate, and at posterior extremity apparently ciliate.
A young one was clavate with head the widest
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-irradiate cills, 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 & enfolded laterally by the head
as represented in fig. Sometimes more or less embracing
or partially twisted together, but usually quite and
lying side by side. Often show 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 organisms
but none in conjunction. The smallest seen
figures, oval, with an compressed ellipsoidal part
as seen in section to the head. Nucleus central, very
obvious with several irregular nucleoli. Body &
head distinctly striate longitudinally. Body also
externally finely ciliated. Length 0.06 mm 0.03 broad.

June 9. Another beetle opened. Many organisms,
mostly small. In a number from 75 to 90 10^7 long,
or 0.3 to 0.36 long by 0.06 wide the nucleus was
oval, central or anterior and with a number
of spherical nucleoli nucleus 0.04 by 0.032 wide
nucleoli 1 to 2 or 0.004 to 0.008. nucleus 0.04 by 0.032
with four nucleoli from 2 to 2 1/2 & several smaller. Occ-
asionally at back end of body. In one nucleus
counted seven nucleoli

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

- No 1 Half 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, *Agamonea capularia*



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 end incurved
obtusely with a minute mucous. Oesophagus 2.5 mm long
by 0.7 wide - second portion of intestine cylindrical, milk white
half as long as oesophagus 0.375 wide; third portion intestine
more capacious cylindrical. Rectum short, ending about

0.25 from tail end. Generative apparatus undeveloped.

1888 Jan. 18.

Spiroptera megastoma Rud. *Filaria megastoma* Seb.

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.

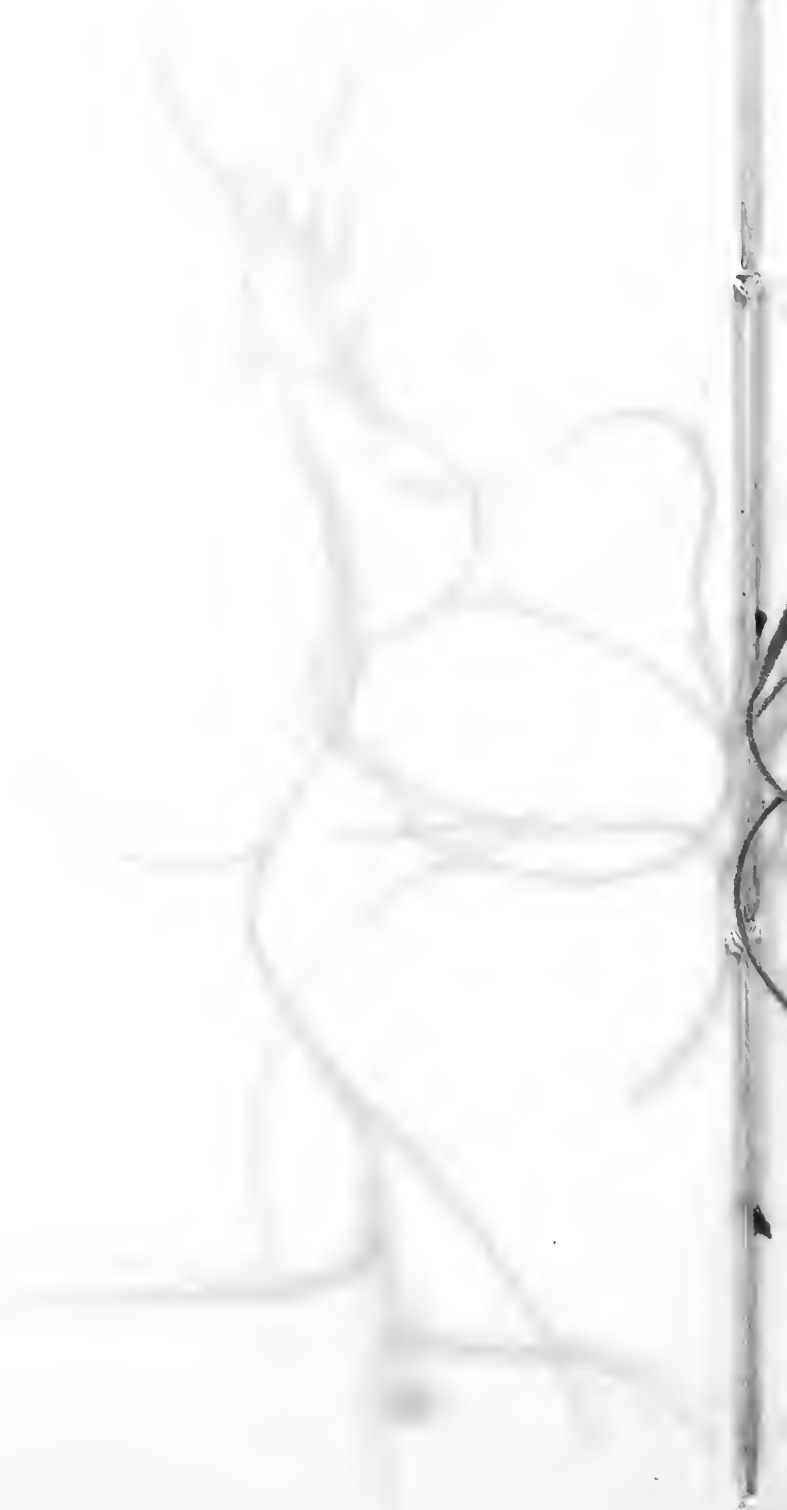
Jan 25 Delicate hair-like worms from the intestine of a Cat. Hairlike, pale chocolate brownish, attenuated towards the extremities.  Head rounded unarm'd. Posterior extremity spiral; more so in the male. Tail short, acute. In female tail curved crinical and ending in an abruptly acute point
5 females 3 inches long 0.25 mm broad
2 males 16 lines long 0.125 mm broad.

Bad Hatter, Mt. Desert Me.

August 1886

Nemertes. In great numbers under stones between
tides. From an inch to 3 inches contracted
by 1 in. to 3 in. no. elongate to double extent.
Mostly look smoky black others variably
blackish to liver brown. Under surface former
appear olive green & others brown. Head
flattened oval, with a pair of lateral forceps.
Eyes variable 2 to 6 on each side. Proboscis
narrow, without the nail-like armature.
Intestine dorsoid or laterally pinnated, Body
behind attenuated, acute. Mouth termino
Gen. aperture large & conspicuous, below the
mouth.











Acanthocyrtis Carter

Acanthocyrtis viridis

Gresser:

Greef:

Actinophrys viridis Ehr.

Acanthocyrtis turfacea, Carter







Protista το πρωτότονον, the first of all, primordial.

Monera μονήγης, simple

Cytodae, Cytodes, ~~cells~~, plasma masses without nucleus.

Gymnocytodes = naked cytododes

Lepocytodes, = membranous or covered cytododes.

Cellulae or Cytta, Cells, plasma masses with nucleus.

Gymnocytta = naked cells

Lepocytta = membranous or covered cells.

Plastides

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