Newsletter

Of the

New York Microscopical Society

1 Prospect Village Plaza
(66F Mt. Prospect Avenue)
Clifton, New Jersey 07013-1918
GPS: Latitude 40.8648N, Longitude 74.1540W

April 2015 **Editor: (201) 791-9826** **Volume 9 (29) Number 4**

13th Annual Microscope Day at John Jay

Wednesday, April 22nd, 2015
"New" Building, 524 W. 59th St
New York, NY 10019
(Fifth floor, Room 5.67)

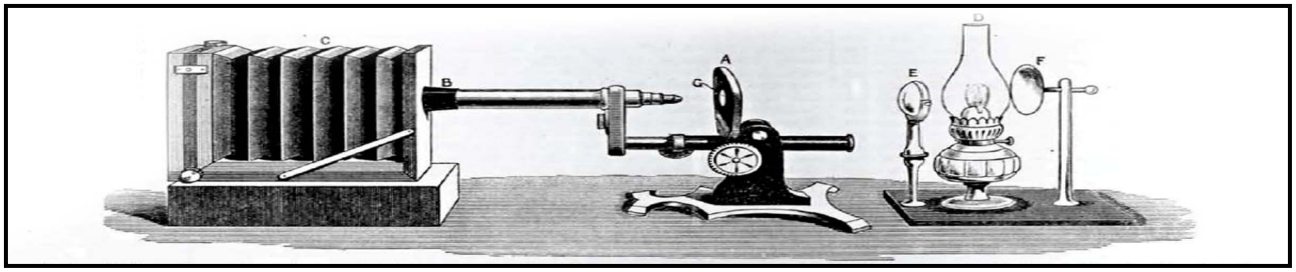
Presented by New York Microscopical Society and John Jay College

Please join us for this event, which begins at 10:00 AM and concludes at 3:00 PM. It is an informal event where speakers will give short presentations with ample time in-between to interact with other attendees and speakers.
This year's speakers and their presentation titles (exact times and order of speakers is subject to change):

10:00 Dr. Lawrence Kobilinsky, Chair, Department of Sciences, John Jay College – *Opening Remarks*
10:15 Dr. Jennifer Rosati, University of Windsor, Ontario and John Jay College, *"Insects under the microscope: How microscopy is advancing the ancient art of taxonomy"*
11:00 Det Greg DiCostanzo, Firearms Analysis Section, NYPD Forensic Investigation Division, *"The Son of Sam Shootings"*
12:00 **Lunch Break and mingling with the exhibitors**
1:00 Adam Hartley, Forensic Evidence Inc, "*So you don't own a confocal…"*
1:30 Ted Schwartz, Senior Forensic Scientist, Westchester County Forensic Laboratory, *"The Rapist Who Never Learned The Ropes"*
2:00 Anthea Chan Ng, Forensic Chemist, DEA Northeast Laboratory, "*Microscopy and the Analysis of Plant Material in a Forensic Drug Lab"*
2:30 Last opportunity to mingle with the exhibitors
3:00 Peter Diaczuk, New York Microscopical Society - *Closing remarks*
Exhibitors: Several firms dealing with microscopes and microscope accessories have graciously agreed to set up exhibits of their products for the day.
Refreshments to be served. This event is free and open to all those interested in microscopy

Photo ID necessary for entry into building

From a "Work Journal" Saturday March 19, 1892 sent in by Jay Holmes



Save a Tree: Get The Extended Newsletter: By Email Only

Board of Managers

John Scott	nyconsnfdn@aol.com;	(646) 339-6566	June 2015	President
John A. Reffner	jareffner@cs.com;	(203) 358-4539	June 2015	Vice President, Program Chair
Mel Pollinger	pollingmel@optonline.net;	(201) 791-9826	June 2014	Treasurer, Editor, Librarian, Facilities Mgr.
John R. Reffner, Jr.	jrr1lp@gmail.com;	(215) 527-1882	June 2014	Secretary
Roland Scal	rscal@qcc.cuny.edu;	(718) 631-6071	June 2016	Board, Curator Pro Tem
Angela Klaus	klausang@shu.edu;	(973) 761-1840	June 2015	Board
Louis Sorkin	entsult@aol.com;	(914) 939-0917	June 2015	Board, Webmaster
Andrew J. Winter	andrew.winter@co.middlesex.nj.us;	(732) 816-3793	June 2016	Board, Education Chair
Guy de Baere	guydbaere@aol.com;	(347) 668-4798	June 2015	Board, Outreach, Pro Tem
Brooke Kammrath	bkammrath@newhaven.edu;	(203) 931-2989	June 2016	Board, Membership chair
Seymour Perlowitz	perlowitzs@hotmail.com;	(718) 338-6695	June 2016	Board
Peter Diaczuk	Peter.diaczuk@gmail.com;	(212) 237-8896	June 2016	Board, Past President

For additional information contact the Editor: Mel Pollinger at (201) 791-9826, or pollingmel@optonline.net

Dues and Addresses
Please remember to mail in your Dues to:
Mel Pollinger
Treasurer, NYMS
18-04 Hillery St.
Fair Lawn, NJ 07410-5207

Junior (under age 18) $10 Annually
Regular $30
Student (age 18 or above) $20 Annually
Supporting $60 Annually
Corporate (includes one advertisement in NYMS News) $175 Annually
Life $300 (payable within the year)
To avoid missing notices:
Notify Mel Pollinger if you have changed your address, phone or email.

Awards Given by the New York Microscopical Society
The New York microscopical Society takes great pleasure in recognizing and rewarding individuals who have contributed to either the activities of the society or to furthering microscopy. These awards are described in our website and in a pdf file for our email newsletter recipients. All members are eligible to nominate individuals for these various awards, and are encouraged to do so.
John A. Reffner, Awards Committee Chairperson

Awards Committee
Chair: John A. Reffner
Members
Jan Hinsch
Peter Diaczuk
Angela Klaus
John R. Reffner

Mel Pollinger, Editor
18-04 Hillery St.
Fair Lawn, NJ 07410-5207

To Order Your NYMS Lapel Pins
Send a check in the amount of $12.00 per pin to:
New York Microscopical Society
c/o Mel Pollinger, 18-04 Hillery Street, Fair Lawn, NJ 07410. To avoid shipping & handling charges, pins may be purchased directly at any NYMS meeting for $10.00.

The Mission of the New York Microscopical Society is the promotion of theoretical and applied microscopy and the promotion of education and interest in all phases of microscopy.

Alternate Meeting Notifications
Please note that due to time constraints in publishing, some meeting notices may be available by calling Mel Pollinger at 201-791-9826, or by visiting the NYMS website, or emailing: pollingmel@optonline.net

****

Please remember to pay your dues

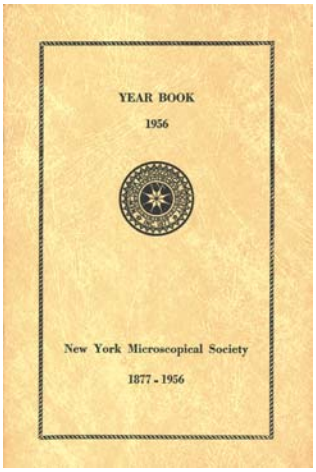
Buy and Read a Good Book on Microscopy.

From the Library:

The NYMS Library contains over 3,700 cataloged volumes, among these is a full set of McCrone's Particle Atlas and copies of Microbe Hunter Magazine.

Come on down and read!

Contact: Mel Pollinger (201) 791-9826, or email Mel at pollingmel@optonline.net



NYMS Yearbook 1877-1956

Be A Volunteer – There's *Always* Something to do and see at NYMS.

If you wish to contribute some of your time to NYMS, please contact me at (201) 791-9826 or by email at pollingmel@optonline.net

Coming Up in 2015

EAS Live Webinars for 2015:

Please search on the below indicated web address and review the EAS Website below for information regarding the upcoming Live Webinars in 2015.

http://easinc.org/wordpress/?page_id=2974

Forensic Courses: NYMS will be announcing these lectures by email and in each Newsletter. The first of the series was on April 15, 2015: "**BULLET RICOCHET AND CRITICAL ANGLE IMPACTS."** For each of the lectures the doors at NYMS-Clifton will open at 8am, with the lecture beginning at 8:30am. **Contact Andrew Winter, Education Chair for registration applications and additional information.** andrew.winter@co.middlesex.nj.us; **(732) 816-3793**

In Memoriam: Walter Aschoff
Died early February 2015

Walter W. Aschoff joined NYMS 1956, was conferred a Fellowship in 1977, became a Life Member. Walter received the Ashby award in 1978. He was President from 1988-1989. In 2014, Walter donated his microscopical equipment, books and slides to NYMS.

Some memories of Walter

I first met Walter in 1977 when I attended the NYMS Course on Use of The Microscope. Walter was the NYMS Education Chair. He remained in that position until the late 80's.

A few years later he became NYMS Treasurer and held that job until he was elected NYMS President in 1988. He remained on NYMS Board until about 2000. He continued to attend NYMS meetings until about 2005 when he became too unsteady on his feet to attend.

Walter spent large amounts of time working for NYMS over the entire period and was the face of NYMS to most people.

Wallter was an amateur microscopist. He and his brother ran a family coal and lumber company until sometime in the 60's and then went into real estate, running an office building and an apartment complex. *Don O'Leary*

Outreach Programs Reaching Out

Thanks to the efforts of NYMS Outreach Chairman, Guy de Baere and a handful of NYMS volunteers, we were well-represented at SCONYC this March. Guy has furthered our Outreach program to include NYMS at the *Estuary Day at Coney Island Creek* event.

For information regarding this and other Outreach events, contact Guy de Baere (see page 2, Board of Managers list0

EAS
CALL FOR PAPERS
On-line submission is now open!
Join us November 16-18, 2015 in Somerset, NJ

We invite you to be part of EAS by contributing a paper for oral or poster consideration. EAS seeks contributions from scientists in **ALL** areas of analysis, which make its program uniquely strong. Submit at: **www.eas.org/asubmit**

Introducing new submission deadlines for 2015!

Visitors Always Welcome to NYMS

Although most of our lecture meetings, workshops and classes are held in the NYMS Clifton facility on the last Sunday of the month, the building may be opened for special purposes at other times, by appointment only. For such an appointment, please contact Mel Pollinger by phone at (201) 791-9826, M-F noon to 9:30pm, or by email at pollingmel@optonline.net.

From The Editor...

if you have an email address: Getting the newsletter by email means you can receive an **extended pdf version** that cannot be sent by "snail mail." Even if you only continue your USPS delivery of the newsletter, NYMS needs your email address for reporting priority events and special news. Being able to contact you quickly by email means better communication between you & NYMS■■ Mel

Need to use a Microscope?

The various microscopes that are presently set up on the main floor of the New York Microscopical Society building in Clifton, N.J. are there for the use of its members.

From Gary Mayer: In need of parts for older Olympus Microscopes? Contact J.C. Ricky in Ohio at (740) 862-9252

Microscope Cleaning Kit

A complete set of tools and accessories to keep your microscope in optimum operating condition. The kit is put together by our previous Curator/Educational Chairman, Don O'Leary, and available directly from NYMS, while they last, for only $35.00 plus shipping & handling, or may be purchased at a meeting. Call or email Mel Pollinger for details (see page two for contact numbers).

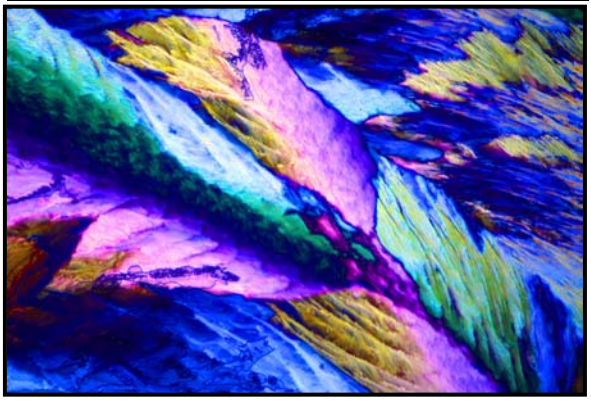
NYMS Meeting Dates

Most meetings of NYMS are usually held in Clifton on the last Sunday of the months of Jan., Feb., Mar., Apr., May, Sep., Oct. Exceptions will be noted in the Newsletter.

NYMS microscope slide collections are available for study at meetings and by appointment.

Please note that our website is presently under repair.

Answer to Mystery Photo for Mar 2015



Polarized light photomicrograph of Aspirin, 50x (Image #P1250929), from a melt. Did you guess correctly?
Preparation & image by Mel Pollinger

Mystery Photo for April 2015

Want to take a guess? Send it to me by email or call me: pollingmel@optonline.net, (201) 791-9826

Additional Historical NYMS Supplements

Email Newsletter recipients will also be getting copies of NYMS Newsletter pdf back-Issues from 2007. Copies of older newsletters will be sent as I convert them.

Attention NYMS Members

Got something to sell? Article to publish? Pictures for the newsletter? Looking to buy something? Want to use the library? Want to use a NYMS microscope? For any of the above, contact the Editor, Mel Pollinger.

Supporting Member

N.Y.M.S. NEWSLETTER SUPPLEMENT

April 2015

In This Section:

Crustacea: Copepoda: *Cyclops*
sp. female with egg sacs.
March 8,2010, freshwater lake
Image by A.W. Thomas

WINTER IS FOR MICROSCOPY
II MULTICELLULAR ALGAE

Anthony Thomas
mothman@nbnet.nb.ca

In the March 2015 Newsletter I discussed the equipment I use and described some local unicellular freshwater algae. Here in Part 2 I will introduce some multicellular forms.

Haematococcus although a single-celled alga it gives the appearance of being multicellur as it occurs in colonies coating shallow rock pools. It thrives in enriched waters and is a common inhabitant of concrete bird-baths. It occurs in three forms:
i)a swimming cell consisting of a wide sheathlike wall and an an ovoid green chloroplast, often with a spot of orange-red carotenoid pigment; two flagella extend outwards at, what appears to be, the anterior end of the cell (Fig. 1a).
ii)a round sessile cell, green with some central carotenoid pigment (Fig. 1b).
ii)a round red cyst that is able to withstand drying (Fig. 1c). The red is the strong antioxidant astaxanthin which is thought to protect the resting cyst from the detrimental effects of UV-radiation from direct sunlight when the cells are in dry conditions.

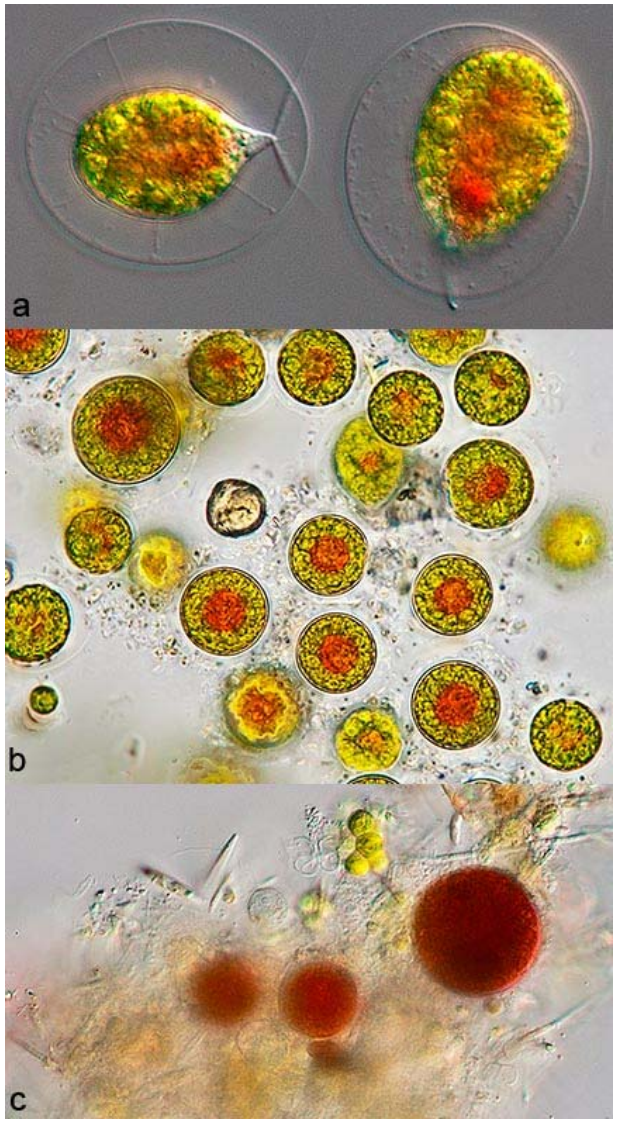


Fig. 1. *Haematococcus* sp. from my concrete garden birdbath:
a: swimming cells
b: normal cells
c: resistant cysts

Volvox is a relatively large, up to 1 mm diameter, actively-swimming colonial alga that can contain as many as 50,000 cells. Difficult to photograph owing to its spherical shape and its constantly rotating swimming action. Young colonies are small clear spheres with small green chloroplasts of indiviual vegetative cells connected to adjoining cells by strands of cytoplasm (Fig. 2a). As the colony matures it produces daughter colinies inside the ball which show up as large green blocks of chlorophyll (Fig. 2b). In late Fall as environmental conditions deteriorate the colony produces resting spores containg the same orange-red pigment seen in the resting spores of *Haematococcus* (Fig. 3). These spores overwinter and start a new colony when conditions improve.

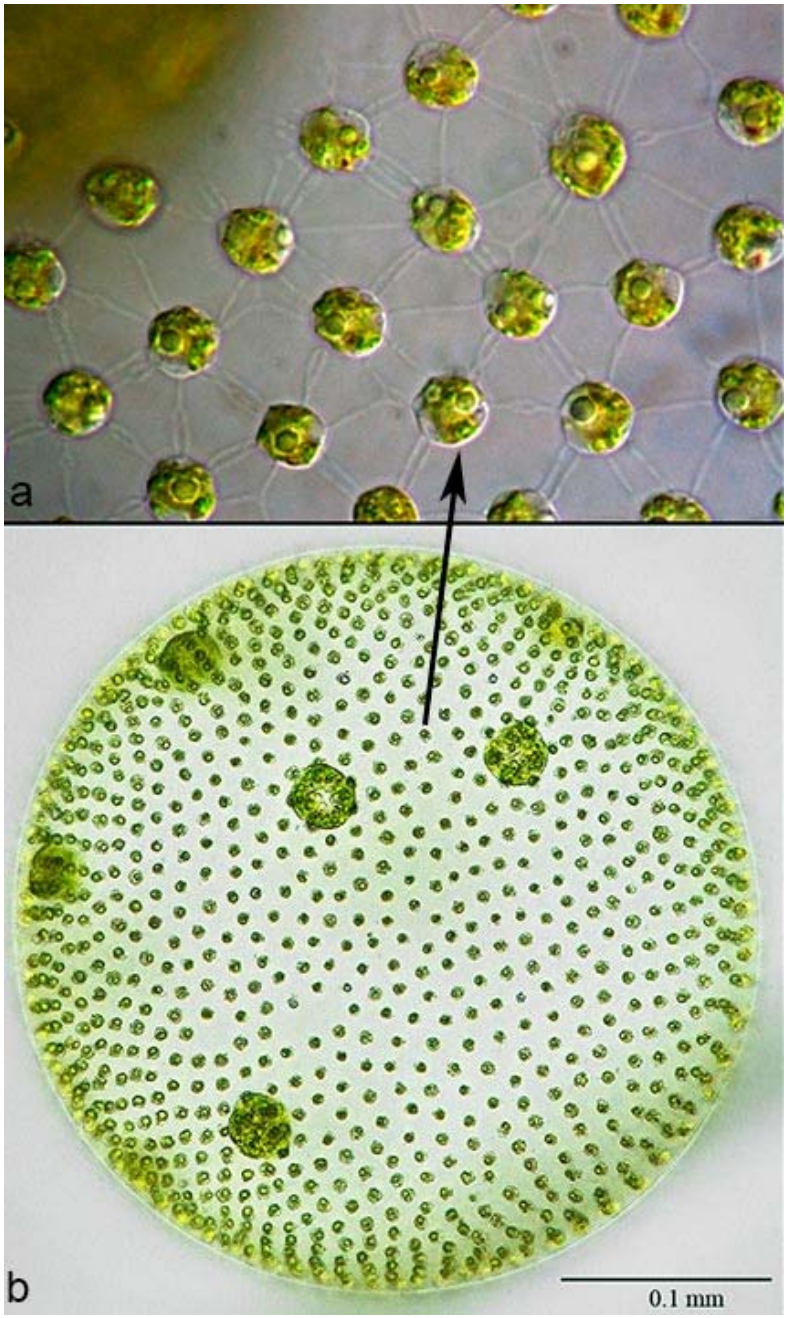


Fig. 2. *Volvox.*
a: green chloroplasts of individual cells with strands of clear cytoplasm connecting adjacent cells.
b: mature colony showing many small green individual cells and 5 larger daughter cells.

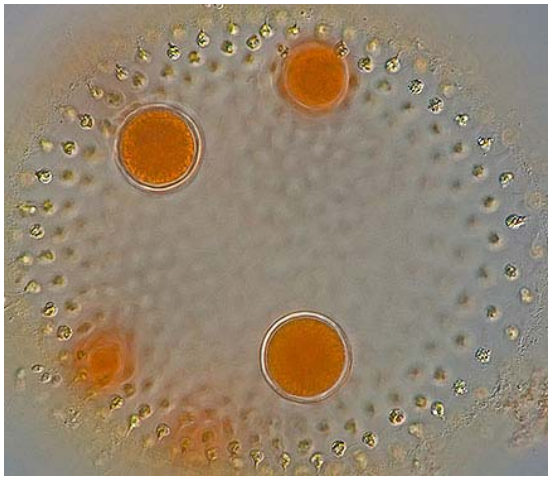


Fig. 3. *Volvox.*
Resting spores.

Pediastrum species occur as platelike colonies. The few I have seen are circular in outline. In the outer circumference the cells have protrusions/indentations whereas those in the inner plate are more regular. The inner cells may be contiguous (i.e., touching) or there may be spaces between adjacent cells. The plates are somewhat delicate and will break apart if not carefully handled (Fig. 4).

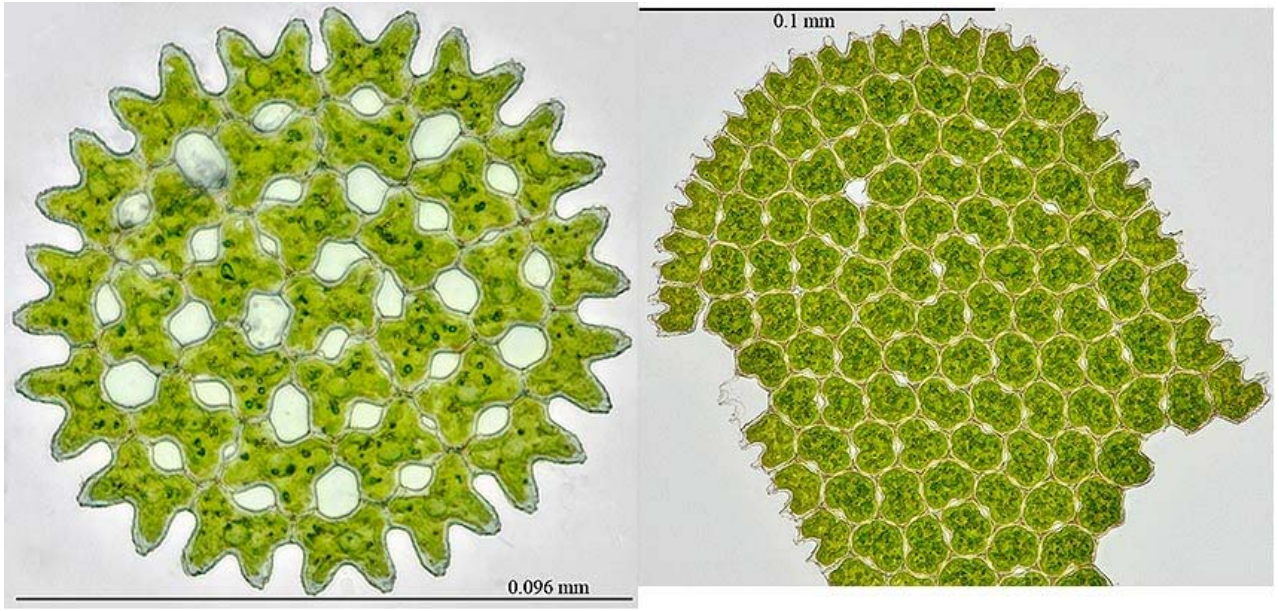


Fig. 4. Two species of *Pediastrum*

Many species in several genera have individuals living together in sphere of mucilaginous jelly. I think this specimen (Fig. 5) is *Sphaerocystis*. What was one individual has cleaved into several daughter cells (da) and all these are in their own little ball of jelly (je). Note the wide gelatinous sheath (sh) surrounding of the colny.

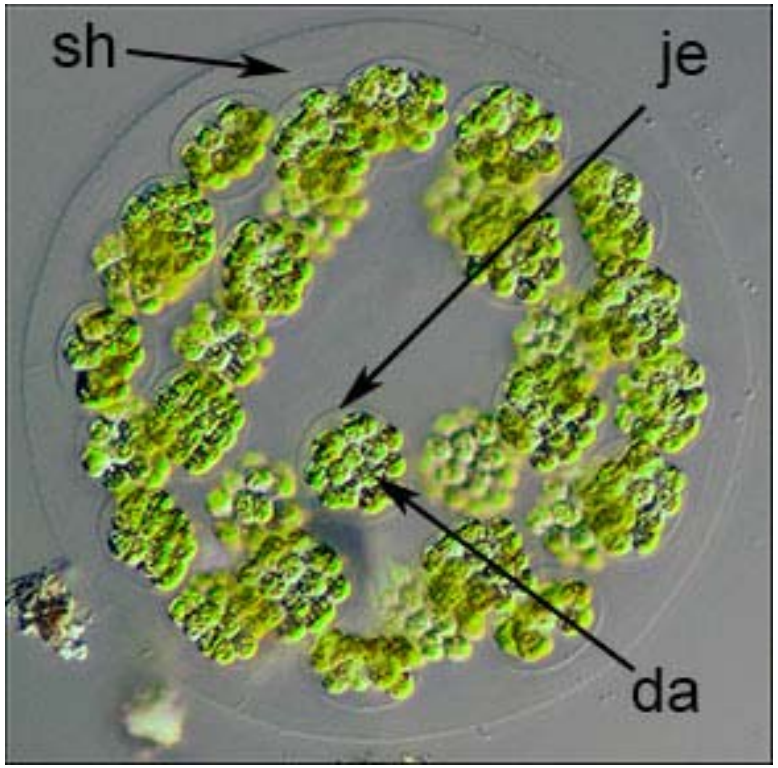


Fig. 5. Colonial algae in a mucilaginous sphere; possibly *Sphaerocystis*.

Perhaps the best known, at least in name, unbranched filamentous algae is *Spirogyra.* Each elongate cell (ce) contains one or more spiral chloroplasts (ch), cells are joined end-to-end to make a filament and usually many filaments occur together to form an obvious mat of green algae (Fig. 6)

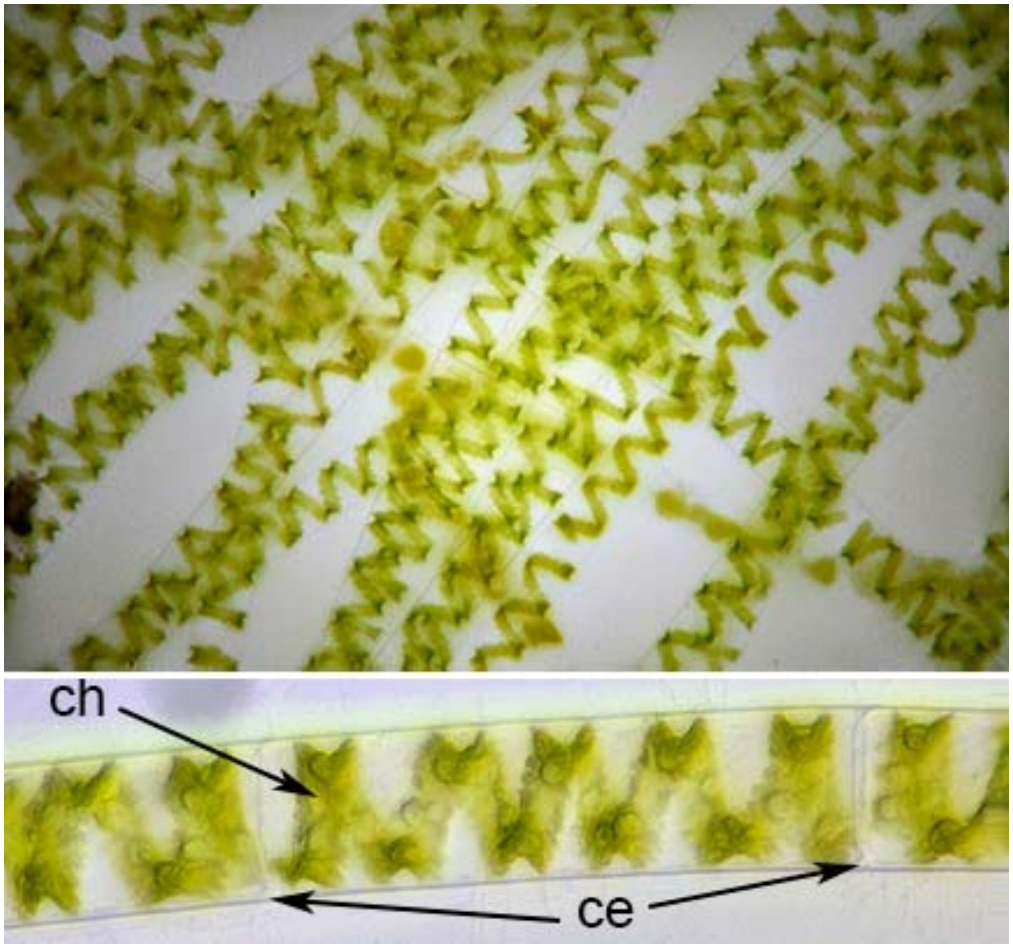


Fig. 6. *Spirogyra*
top a typical mass of filaments, each filament a string of individual cells

bottom an individual cell.
ch spiral chloroplast
ce end walls of a single cell

Zygnema is another genus of filamentous algae. Here each individual cell contains two star-shaped chloroplasts which makes identification simple. Some species have the filaments enclosed in a gelatinous sheath, just detectable in my image as fibrils extending outwards from the cell wall (Fig. 7).

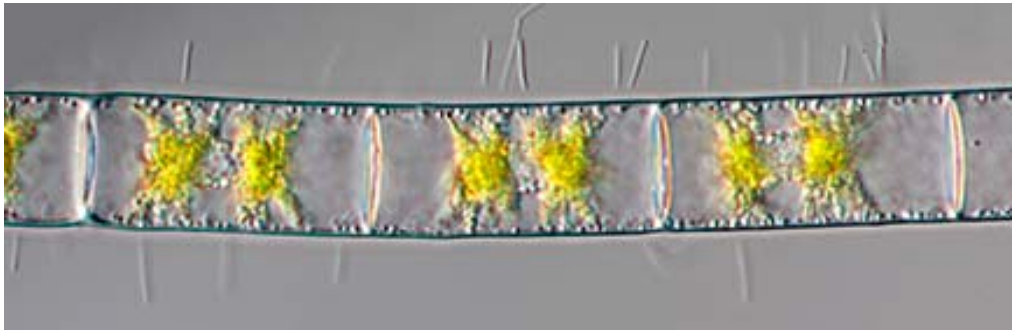


Fig. 7. *Zygnema,* showing characteristic chloroplasts

In my text book “Prescott, G.W. 1954. How to know the Freshwater Algae” one of the keys separates the filamentous algae based on the shape of the chloroplasts:

a) a parietal ribbon as seen in *Spirogyra*,
b) axial stellate as seen in *Zygnema*, and
c) an axial plate as seen in this genus *Mougeotia* (Fig. 8).

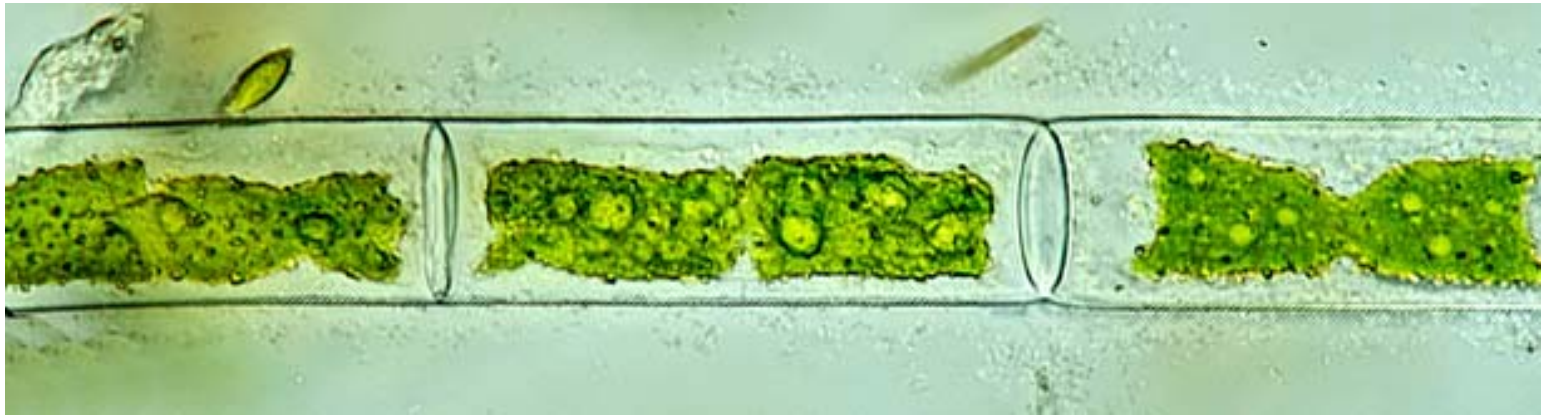


Fig. 8. *Mougeotia*, showing characteristic plate-shaped chloroplasts

Hyalotheca is another filamentous algae with short, almost square in side view, cells are often filled with green photosynthetic chloroplasts. The entire filament may be encased in thick mucilage sheath as seen in this image, Fig. 9 top, of ***H. dissiliens***. In one report I read it was suggested that the sheath contributes to colonial coherence and increases the chance of dispersal as the filaments readily stick to migratory water fowl. I suspect that the sheath would also help keep the filaments moist, when in air, and prevent the algae drying and dying.

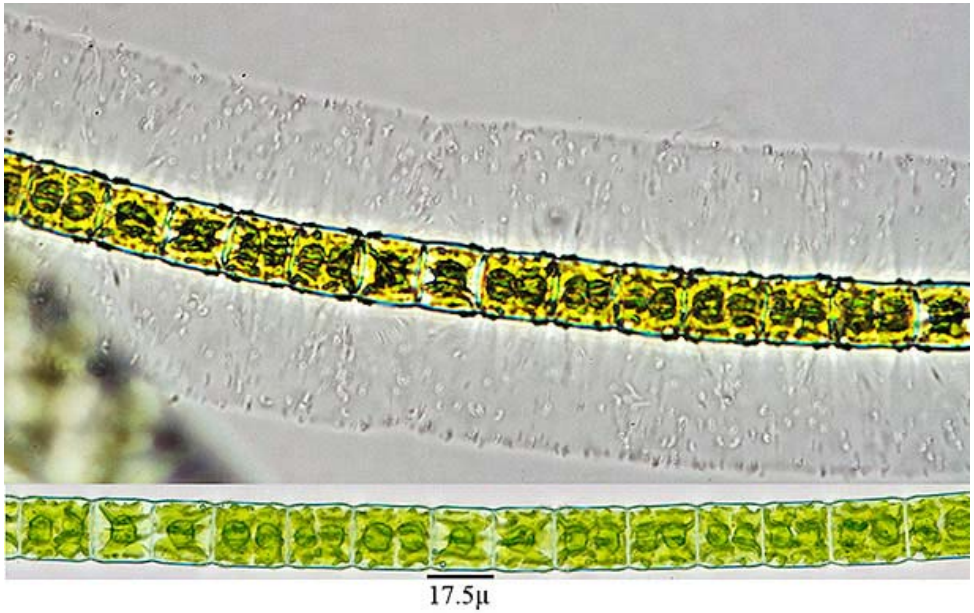


Fig. 9. *Hyalotheca dissiliens*

Besides the filamentous multicellular algae in the previous pages there is a group of multicellular algae that are branched. In this group of branched algae are species in the genus:
Draparnaldia, consisting of a filament of large cells forming an axis from which tufted plumes of branches of small cells.arise (Fig. 10).

Fig. 10. *Drapanaldia*

Bulbochaete is another branched species but the branches are far fewer (Fig. 11) than the branch structure in *Draparnaldia.*
Bulbochaete can be recognized by the presence of bulb-like bases (Fig. 11, b) of the long 'hairs' projecting from the top of the cells.

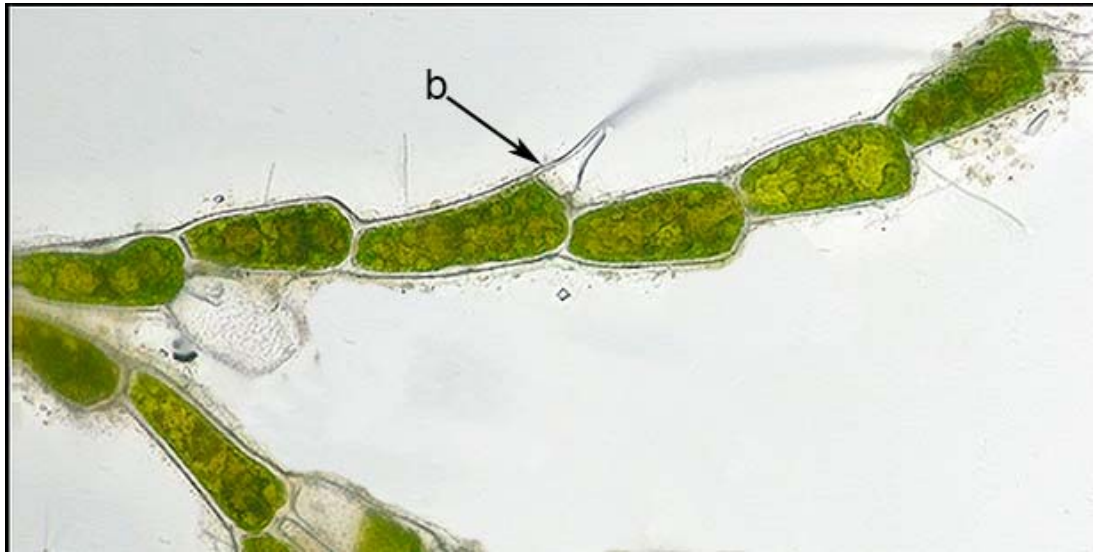


Fig. 11. *Bulbochaete*
b bulb-like base of cell's 'hair'

13th Annual
Microscope Day at John Jay

Wednesday, April 22nd, 2015
"New" Building, 524 W. 59th St
New York, NY 10019
(Fifth floor, Room 5.67)

Presented by New York Microscopical Society and John Jay College

Please join us for this event, which begins at 10:00 AM and concludes at 3:00 PM. It is an informal event where speakers will give short presentations with ample time in-between to interact with other attendees and speakers.

This year's speakers and their presentation titles (exact times and order of speakers is subject to change):

10:00 Dr. Lawrence Kobilinsky, Chair, Department of Sciences, John Jay College – *Opening Remarks*

10:15 Dr. Jennifer Rosati, University of Windsor, Ontario and John Jay College, "*Insects under the microscope: How microscopy is advancing the ancient art of taxonomy"*

11:00 Det Greg DiCostanzo, Firearms Analysis Section, NYPD Forensic Investigation Division, *"The Son of Sam Shootings"*

12:00 **Lunch Break and mingling with the exhibitors**

1:00 Adam Hartley, Forensic Evidence Inc, "*So you don't own a confocal…"*

1:30 Ted Schwartz, Senior Forensic Scientist, Westchester County Forensic Laboratory, *"The Rapist Who Never Learned The Ropes"*

2:00 Anthea Chan Ng, Forensic Chemist, DEA Northeast Laboratory, "*Microscopy and the Analysis of Plant Material in a Forensic Drug Lab"*

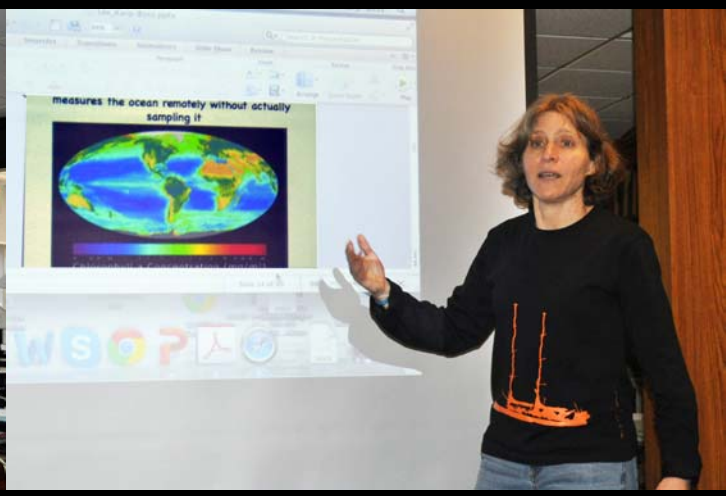
2:30 Last opportunity to mingle with the exhibitors

3:00 Peter Diaczuk, New York Microscopical Society - *Closing remarks*

Exhibitors: Several firms dealing with microscopes and microscope accessories have graciously agreed to set up exhibits of their products for the day.

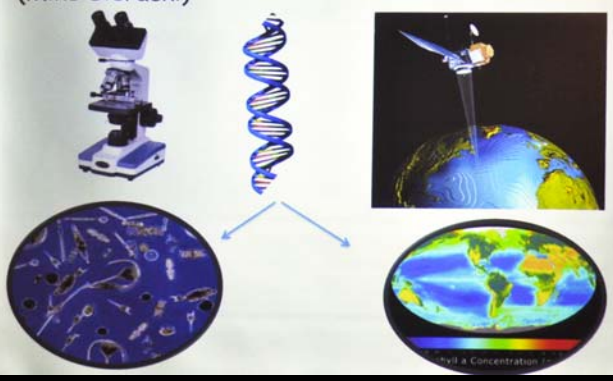
Refreshments to be served. This event is free and open to all those interested in microscopy
Photo ID necessary for entry into building

Images from Sunday March 29, 2015 Meeting & Lecture at NYMS in Clifton, N.J.
"Small is big: understanding the invisible world of phytoplankton"
Speaker: Dr. Lee Karp-Boss, Ph.D.



Approaches to study phytoplankton

"With a finite amount of funding one can either know a lot about a few of them (individual based approach) or little about many of them (bulk measurements approach)"
(Mike Sieracki)



THE PLANKTON

In 1L of sea water:

1 - 10,000 metazoans

1 - 100 million protists (phyto, micrograzers)

1- 10 billion prokaryotes (bacteria & archa

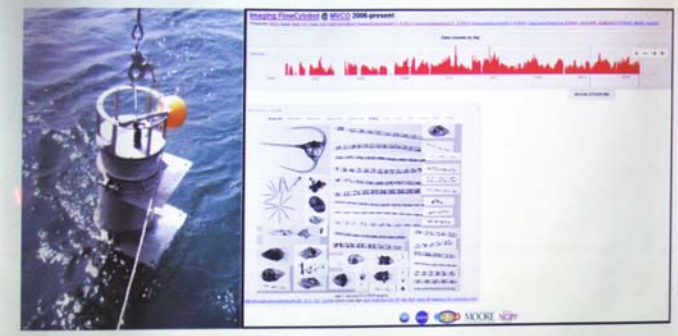
10 - 100 billion viruses

"Few object are more beautiful than the minute siliceous cases of the diatomaceae: were these created that they might be examined and admired under the high powers of the microscope?"
(Charles Darwin)

Art forms of nature (Haeckel 1904)

By artist Klaus Kemp

Ocean Observatories

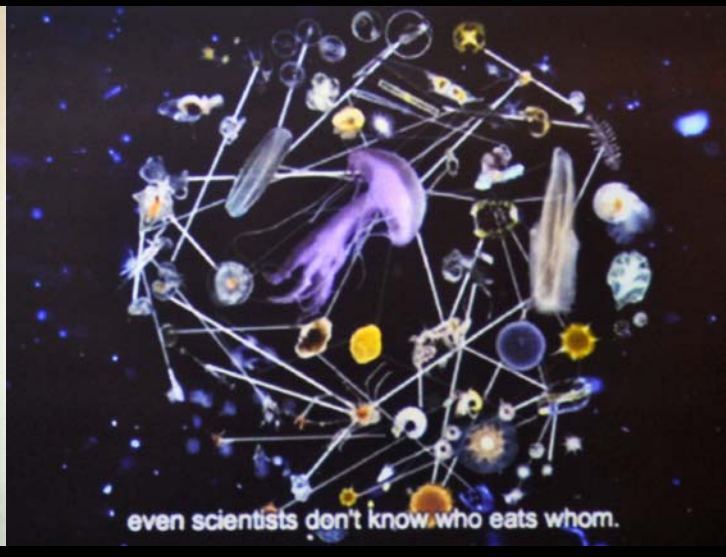


Heidi Sosik & Rob Olson

Small is big: understanding the invisible world of phytoplankton

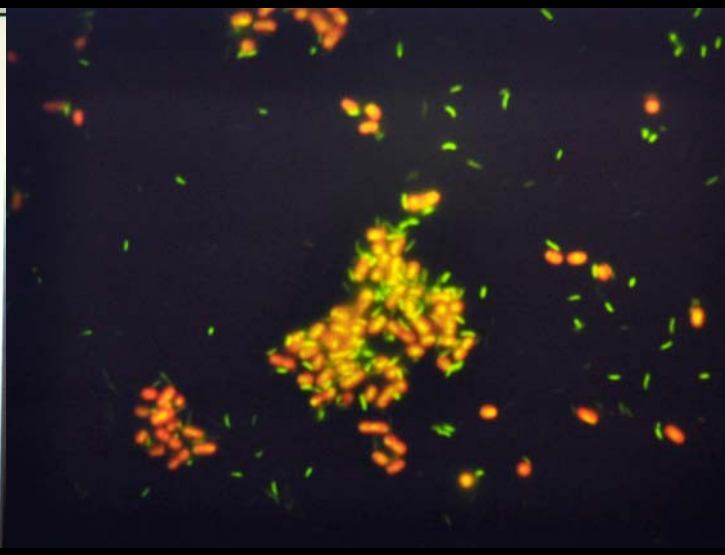
Lee Karp-Boss
School of Marine Sciences
University of Maine

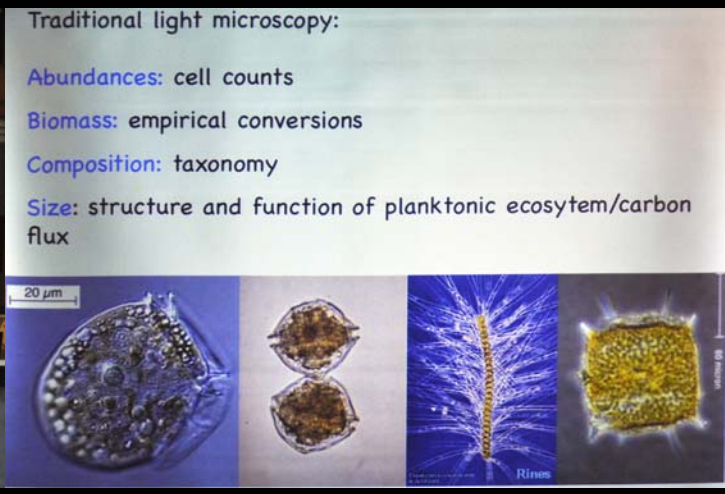
Christian Sardet, LOV, CNRS



even scientists don't know who eats whom.

Phytoplankton Lecture





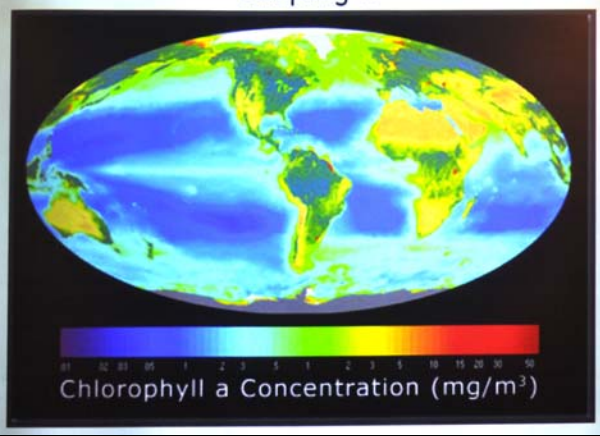
Phytoplankton Lecture

Diatoms

- Background
- Main characteristics
  - -The frustule
  - - Life cycles
- Mechanical properties

satellite based estimates of chlorophyll biomass

measures the ocean remotely without actually sampling it



Imaging flowcytobot

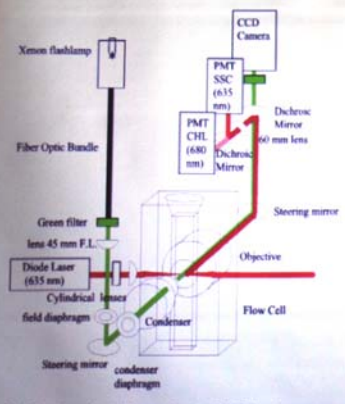


Fig. 3. Schema of optical layout of Imaging FlowCytobot.

Thank you!

WORK

An Illustrated Journal of Practice and Theory

FOR ALL WORKMEN, PROFESSIONAL AND AMATEUR.

VOL. IV.—No. 157.] SATURDAY, MARCH 19, 1892. [PRICE ONE PENNY.

WORK WORLD.

SHEFFIELD ivory-cutters have plenty of work, there being a good demand for table-knife handles, chiefly of the commoner varieties. Ivory still maintains its high prices, choice cut pieces ranging from 32s. to 60s. per pound.

* *

One of the largest colliery wire ropes made in Sunderland has just been sent from Messrs. Glaholm & Robsen's. It is six miles in length, and weighs twenty-four tons. It required two heavy waggons and twenty horses to transport it from the works to the railway station.

* *

An uncommon way of using enamel in jewellery—viz., where it is quite transparent, or *à jour*, as it is called—is now to be well seen in a pearl, diamond, and enamel bracelet, which forms part of Mrs. H. Bolckow's bequest in the South Court of the South Kensington Museum.

* *

Machine-cut files are being turned out in Sheffield in great perfection, the process being to machine-cut them first, and then cross-cut them by hand. There would be no objection to this provided the goods were sold as partly machine and partly hand-cut, but complaints are abroad that the machine-cut files are sold as hand-cut.

* *

In connection with the Leather Trades Exhibition, to be held at the Agricultural Hall, Islington, N., from the 4th till the 18th of April next, the committee have decided to hold a series of competitions for students and craftsmen in various branches of the boot trade. Twelve silver medals will be given as first prizes, and for the second best in each class a certificate will be awarded.

* *

The dock deliveries of timber for London still show a considerable decrease, owing mainly to the late strikes. The returns up to the present show a decrease of 1,887 standards under the delivery for the same period last year. The demand for all kinds of timber is just now very limited, and the stagnation is pervading every department of the trade. Some prime parcels of Tabasco and Cuba mahogany were sold recently, and realised good prices, one log, containing 175 ft. sup., fetching as much as 1s. 9½d. per foot.

* *

There is little change to notice in the heavy iron trades of Sheffield. Prices remain unaltered, and there is not much prospect of improvement, excepting special lines, such as railway material. The slight improvement noticeable in the cutlery trades has just continued, and matters are moving more freely, so far as the home markets are concerned. In the departments and markets where trade was moderately good last year there is a large falling-off, not only in common goods, but also in the more expensive class of merchandise.

* *

Fashion is as paramount in furnishing and decorating as with ladies' costume, of which fact the new season's designs in grounded paperhangings give irrefutable testimony. Stripes—in half-satin and talc effects of plain colours and self-tones—we have in plenty with which to satisfy the present craving for drawing-rooms in "the French style." In best bedroom lines, and for morning rooms, etc., there is a surfeit of charming semi-natural floral designs, all very full and harmonious in colour, although approaching too dangerously near imitations of nature to be satisfactory as designs for wall-coverings. Imitation tapestry papers are also in strong demand, chiefly for dining-rooms, for which they are very suitable, if selected with judgment and hung with skill.

* *

The dinner of the Birmingham Jewellers' and Silversmiths' Association, which was postponed from last month on account of the death of the Duke of Clarence, is to be held to-day at the Great Western Hotel, Birmingham, with Mr. Chamberlain in the chair as usual. Have those people anything to announce this year? They have had something to say on three occasions. First, there was a lecture on jewellers' art by Mr. Chamberlain, with comparisons and illustrations drawn from Egypt. Another year he announced the starting of a jewellers' technical school at Birmingham; and last year that they had so moved the authorities at the City and Guilds Institute here in London as to get the subject of goldsmiths' work officially recognised, thus showing London the way. But is this creditable to London? Goldsmiths' Company—wake up!

To facilitate the transportation of exhibits for the Chicago Exhibition, arrangements have been made with five hundred railways and steamship lines. The British railways have undertaken to carry goods for English exhibitors to and from the port of shipment at half rates. The American railways will charge the usual rates to Chicago, but will bring back the goods free. Many of the steamship companies have reduced their tariffs to 11s. per ton, and have consented to adopt a reduced passenger tariff for exhibitors and their employees.

* *

The Midland Counties Trades and Industrial Exhibition will be held at Bingley Hall, Birmingham, from April 11 to May 14. It will embrace twenty sections, including Engineering and Machinery, Mining and Metallurgy, recent inventions of all descriptions, Decoration, Furniture, Gas and Electricity, Domestic Appliances, etc. Sections 19 and 20, for which free space will be allotted and medals and certificates awarded, are set aside specially for the artisan classes. No. 19, Women's Industries, will include Carving, Ceramics, Domestic Furniture Designs, Artificial Flowers, Painting, etc. No. 20, Artisans' Industries, will embrace Models, Designs, Fretwork, Inventions, Specimens of Handiwork, etc.

* *

In Halifax the engineers' tool trade is still depressed. Many of the shops are working short of usual hands, while others are dividing the work into week "shifts." No large contracts are on hand, except, perhaps, one or two local contracts for pipes in the foundries. The prospects of the small and thick wire-drawing trade show improvement. Coating weaving and worsted spinning are also depressed; while Brussels carpet weaving remains firm, and tapestry shows slight improvement. Card-making, depending on the textile trades, remains moderate, as is also the leather-belting industry. There is a strike in the brush trade, which, combined with the present high price of materials, is likely to make difficulties with the masters. The Halifax County Council have received powers from the Board of Trade to construct electric-lighting stations and supply current through the principal thoroughfares. This will, no doubt, brighten the prospects of trade in the electric engineering departments.

cu[illegible]ent, together with a lower internal resistance of the cell. A very handy arrangement [illegible] the plates, easily made by amateurs, is [illegible] here directed. Procure plates of zinc [illegible]d carbon of a size suitable to the cells [illegible]out to be used. Get two pieces of hard wood, ½ in. in thickness, ¾ in. in width, and long enough for the two ends to rest on the edges of the battery cell; cut a recess in each piece of wood to fit the zinc plate on each side when the plate is clipped between them; then give each piece three coats of varnish, or soak them well in melted paraffin. The two strips of wood are then to be placed on each side of the zinc plate, with ½ in. of its top above the wood, and the two pieces fastened together with brass screws at the ends. A binding-screw on the zinc will hold it up and serve as a terminal, and a wide-jawed brass clamp will secure the two carbon plates on each side of the wood.* When the battery is not in use, these clamps can be loosened, and all the plates put into water, to cleanse them from traces of the solution.

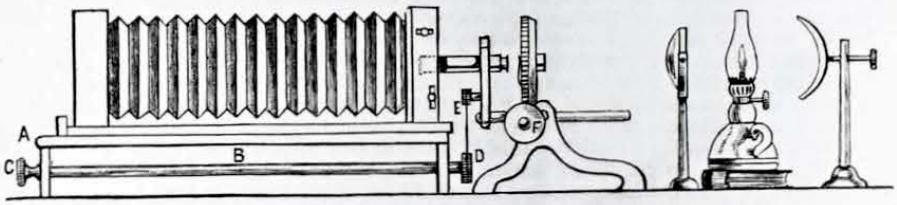


Fig. 2.—A Convenient Arrangement for Fine Adjustment—A, Stand for Camera; B, Connecting-Rod turned by Milled Head, C; D, Pulley connected with Fine Adjustment, E; F, Screw for roughly focussing Object.

Solution for Chromic Acid Battery.—The mixture for charging the cells of this battery is made up of 3 ozs. of chromic acid dissolved in one pint of water, to which must be added 3 fluid ozs. of sulphuric acid. The mixture must be allowed to cool before placing it in the battery cell. If chromic acid cannot be obtained, a similar mixture with bichromate of potash may be employed, but chromic acid is preferable to bichromate of potash.

Bichromate of Potash Battery.—The bottle form of bichromate of potash battery may also be employed in working an induction coil, or any one of the box batteries described in No. 89, Vol. II., of WORK, in the series of papers on "Model Electric Lights."

Bunsen and Grove Batteries.—The best effects from spark induction coils are obtained from them when worked with current from a battery of Bunsen cells or of Grove cells. Persons who have these cells and object to the nitrous fumes given off by the nitric acid in the porous cell, may substitute for this a solution of chromic acid, using the same cells and the same elements.

Batteries for Medical Coils.—Almost every generator of electricity known, and almost every form of battery invented, has been and is used to work these coils. The simple voltaic arrangement of copper and zinc plates immersed in dilute sulphuric acid, held in glasses, as shown at Fig. 1; Dr. Wollaston's improvement of zinc plates enclosed in a loop of sheet copper; Smee's battery, with platinised silver plates opposed to zinc; Walker's battery of carbon plates opposed to zinc; and many other single fluid cells worked with dilute acid, have all been used for the purpose. Some inventive minds have launched out into modifications of these batteries, and have called the modified batteries by their own names. Similar modifications have been made, and named from batteries in which carbon, surrounded with peroxide of manganese, forms the negative element, and zinc, in a solution of sal-ammoniac, forms the positive element, as seen in the well-known Leclanché battery. The sulphate of mercury series of batteries, such as the Marie Davy and Latimer Clark cells, and also the chloride of silver series, represented by the Gaiffe, Warren de la Rue, Skrivanow, and Schanchieff cells, have all had attention from the modifiers of batteries for medical coils. In all these inventions, portability and freedom from messy liquids and noxious vapours has been the chief aim. The closely-sealed forms of batteries have therefore been in most favour. For pocket coils (those ingenious little instruments for giving unpleasant electric shocks to unwary and meddlesome outsiders) a compact and non-messy form of battery became a necessity; hence these have been generally operated by some modification of the silver chloride series of batteries. These have the disadvantage of soon running down, so to speak, and ceasing to give current after a short period of activity.

Lithanode Battery.—Perhaps the best battery for these coils is the sealed lithanode battery, manufactured by Messrs. Cathcart, Peto, & Radford, the electrical engineers, for lighting portable electric lamps. These cells are made small enough to go into the inside pocket of a coat, and are curved to fit the body. As the electro-motive force of each pair of elements is 2·3 volts, and the cells are only of pocket-book weight, a most powerful battery can be easily carried without inconvenience. When once charged, they remain in this condition ready for action during a period of several months; they yield a large quantity of current, and when exhausted can be easily re-charged, as accumulators are charged, by sending a strong current through them from another battery or from a dynamo machine.

The E. S. dry battery, the Gassner, and other so-called dry cells, may also be employed in working small medical coils. These have the advantage over ordinary cells in that they are unbreakable, and contain no liquid to be spilled by overturning the cells.

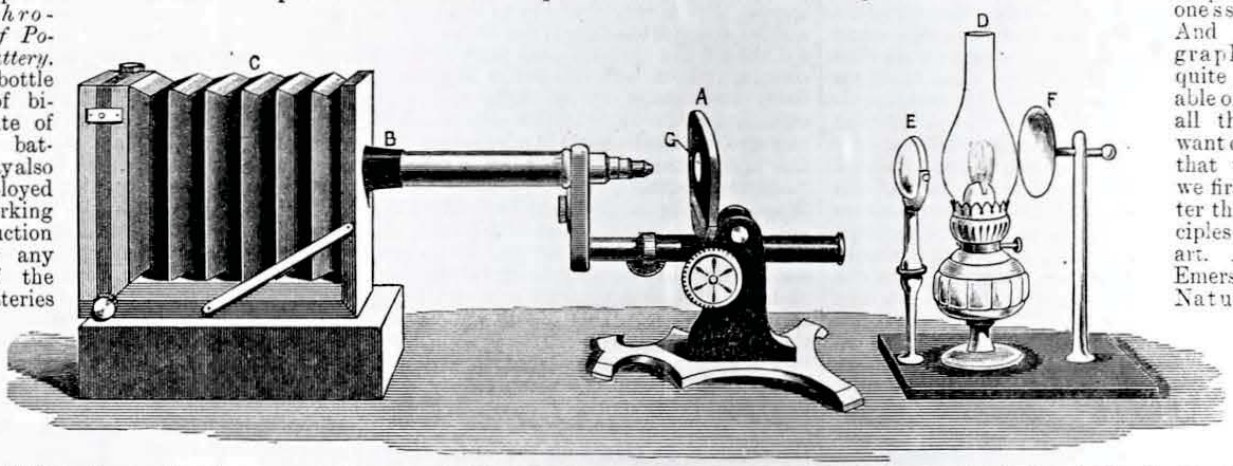


Fig. 1.—Method of arranging Camera and Microscope for Work by Lamplight—A, Microscope, the Tube of which is inserted in the Front of the Camera, C, and the Joint rendered Light-tight by means of the Velvet, B; D Lamp, the Light from which is reflected from the Concave Mirror, F, and concentrated on the Object by the Bull's-eye Condenser, E. The Object is placed at G.

MICRO-PHOTOGRAPHY WORK.

BY ARTHUR RENAUD (B.A. OXON.).

PHOTOGRAPHY, as an accessory to scientific research, is making daily advances, and a knowledge of its principles is becoming more and more necessary to the student. Whether one is a devotee of the telescope or the microscope, or even the chemical laboratory, one finds the process of delineating the objects under one's notice which photography gives us of immense value in prosecuting one's studies. And photography is quite capable of doing all that we want done in that way if we first master the principles of the art. As Dr. Emerson, the Naturalistic Photographer, says, in a description which certainly does not fail in its object for want of elaborateness of expression:—"Not content with her vast triumphs over the infinitely great, she dives down to the infinitely small, and stores up for us portraits of the disease-bearing generation of *Schizomycetes*, the stiff-necked *bacteria* and the wriggling *vibrio*, the rolling *micrococcus* and the fungoid *actinomycosis*, with deadly tresses: these she pictures for us, so that we may keep them on small plates, or else she throws them on screens, so that we are able to study their structure. On those screens, too, we can gaze on the structure of the Proteus-like white blood-corpuscle, and we are able to study the very cells of our tongues, our eyes, our bones, our teeth, our

* Illustrated in WORK, p. 36, Vol. III.

Main Identity

From: "Eastern Analytical Symposium & Exposition" <newsletter@eas.org>
To: <pollingmel@optonline.net>
Sent: Friday, March 20, 2015 12:24 PM
Subject: Elemental Impurities According to USP and ICH - Talk to an Expert about the Upcoming Requirements

Confused on the changes in requirements?
Do you want to know what to plan for?
Join this webinar to discuss LIVE with Tim Shelbourn, one of the USP Expert Committee Members

Webinar: Wednesday, April 8th, 9:30am ET

$305 or less!

See Registration page for pricing; click on link below

Elemental Impurities Compliance for the Pharmaceutical Industry: An Overview of the New Compendial Requirements and Analytical Strategies

Webinar Description

In 2005, the United States Pharmacopeia (USP) began the process of replacing the sulfide precipitation based Heavy Metals general chapter <231> with atomic spectroscopy based standards, Elemental Impurities chapters <232> and <233>. Going on a decade later, these standards are set to become regulatory enforceable-the most recent published implementation date provided by USP is December, 2015. These standards represent a dramatic departure from the venerable Heavy Metals test (used both by the US and in Europe) in that a specific list of elements is provided. Each element is associated with a specific permissible daily exposure limit (PDE's) for various routes of administration. More recently, the International Conference on Harmonization (ICH) has published the Q3D document, a Guideline for Elemental Impurities, which is anticipated to be implemented in early 2016.

The subject is of principle importance to the manufacturers of new drug products as they will be required to comply with the new elemental impurities standards either through thorough risk assessments or through testing. If the manufacturer's compliance strategy involves testing, there are many things to consider with regards to selecting the correct analytical technique (atomic absorption, ICP emission spectroscopy, ICP mass spectrometry or XRF).

The objective of this live training webinar is to provide an understanding of the new standards and guideline, what testing is required in order to comply with the spirit of the documents, how to perform a proper risk assessment, and how to perform suitable analytical measurements.

Learning Benefits:

-An overview of USP <232> and <233>.
-Reviewing ICH Q3D.
-Risk assessments.
-Compliance strategies.

-Analytical considerations and selecting the best technique.
-Analytical method validation.

Webinar Details

Wednesday, April 8th, 9:30-11:30am ET (New York)
Instructor: **Tim L. Shelbourn**, Research Scientist, Eli Lilly and Company, Member, General Chapter Expert Committee, USP

Click here for specific details about this course

CONTACT US:

EAS
PO Box 185
Spring Lake, NJ 07762
(732) 770-7324
askeas@eas.org
www.EAS.org

Register

for this webinar - select April 8th, Elemental Impurities

EAS has partnershed with Pharma Webinars to bring new online professional training to the analytical science community. Our webinars are not pre-recorded but live and interactive. There will be time for questions after the presentation. Group rates available.

Visit our website for more information on our webinars and check out the list of **short courses** we will be offering November 15-18, in Somerset NJ: www.EAS.org

Connect with us on:

Main Identity

From: "Eastern Analytical Symposium & Exposition" <newsletter@eas.org>
To: <pollingmel@optonline.net>
Sent: Monday, March 02, 2015 11:20 AM
Subject: EAS Call for Papers Is Now Open! New Deadlines for 2015

EAS
CALL FOR PAPERS
On-line submission is now open!

Join us November 16-18, 2015 in Somerset, NJ

We invite you to be part of EAS by contributing a paper for oral or poster consideration. EAS seeks contributions from scientists in **ALL** areas of analysis, which make its program uniquely strong. Submit at: www.eas.org/asubmit

Introducing new submission deadlines for 2015!

Oral Submission

New deadline! EAS is accepting oral abstracts from March 1 - **June 15th**! Visit our website for the list of areas of interest and submission details.

Learn More...

Poster Submission

You asked. We listened! EAS is keeping the abstract submission site for posters open until **September 30th**!

Learn More...

EAS February Retort is now available

Check out the preliminary list of short courses, invited sessions and other programs being planned for November. ***Click here***

Forward this email

New York Microscopical Society

Please Print

Please send with payment directly to:
New York Microscopical Society
c/o Mel Pollinger, Treasurer
18-04 Hillery Street
Fair Lawn, NJ 07410-5207

I hereby apply for membership in the New York Microscopical Society

Name: (Dr., Ms., Mr.).....Nickname.....
Home Address.....
.....
Phone.....Fax.....E-Mail.....
Work: Company.....Address.....
.....
Phone..... Fax.....E-Mail.....
Would you prefer to receive NYMS mail at home ☐ At work ☐ By e-mail (best way) ☐
Principal work or interest in Microscopy.....
.....
On what topic are you available as a speaker? .....
.....
Would you like information about NYMS committees? Yes ☐ No ☐ Awards ☐ Membership ☐
Education ☐ Library ☐ Finance ☐ Curator ☐ Housing ☐ Program ☐ Publications ☐ History ☐
Who referred you to NYMS?.....
Academic and Honorary Degrees:
Degree Conferring Institution Date
.....
.....
.....
Scientific Publications.....
.....
.....
Membership in Scientific Societies.....
.....
Date of birth (optional if over 18).....
***I have enclosed a check for $..... to cover my application fees** for membership {Annual $30, Supporting $60, Life $300(payable within the year), Corporate $175(includes one advertisement in NYMS News), Junior $5 (under 18 years old)}.Student (over 18) $20*
I understand portions of the above information may be used in NYMS publications.
I would prefer my home ☐ work ☐ address/ phone included in the NYMS Directory.

*Signature.....*Date.....
NYMS Headquarters: One Prospect Village Plaza, Clifton, NJ 07013 Telephone (973) 470-8733

New York Microscopical Society Items For Sale

N.Y.M.S. Microscope Covers

Item #	Size	Member Price	List Price
MT-003	Small Microscope or Stereo	$18.00	$20.00
MT-004	Lab Microscope or Large Stereo	$23.00	$25.00
MT-005	Large Lab Scope	$28.00	$30.00
MT-009	Large Lab Scope with Camera	$31.00	$33.00
MT-010	Universal Scope with Camera	$36.00	$40.00
MT-012	X-large Scope	$45.00	$50.00

N.Y.M.S. Microscopes

185	Monocular Dissecting Microscope	$85.00	$99.00
131	H.S. Student Microscope	$190.00	$245.00
131-FLU	H.S. Student Microscope (Fluorescent)	$200.00	$255.00
125-LED	H.S. Student Microscope (LED)	$240.00	$309.00

Other Items

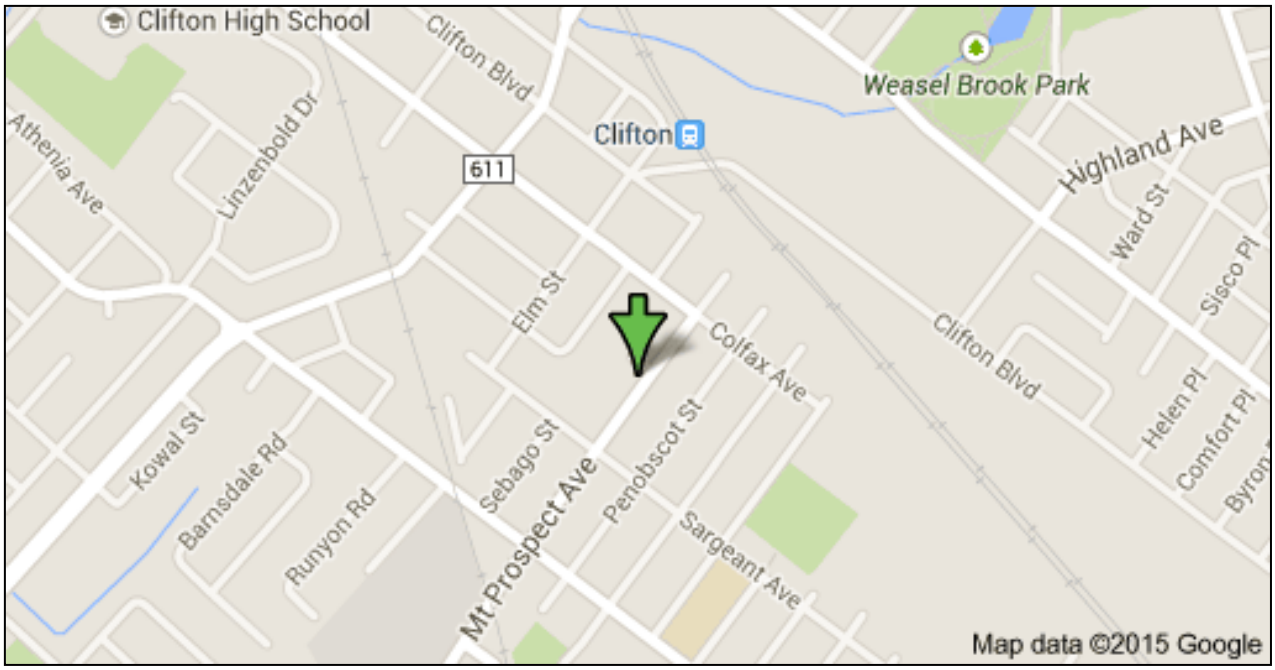
NYMS Glossary of Microscopical Terms	$20.00
NYMS Patch	$5.00
Microscope Cleaning Kit	$35.00
NYMS Lapel Pin	$10.00

Model 131: Tungsten

Model 131-FLU: Fluorescent

Model 185: 20x

Model 125-LED Cordless



Directions to NYMS Headquarters

One Prospect Village Plaza
(66F Mount Prospect Avenue)
Clifton, NJ 07013

GPS: Intersection of Colfax & Mt. Prospect:
Latitude 40.8656 N, Longitude 74.1531W,
GPS: Our building: Latitude 40.8648 N,
Longitude 74.1540 W

From George Washington Bridge:
Take Interstate Route 80 west to Exit 57A, Route 19 South. Take Route 19 to Broad Street and continue two lights to Van Houten Avenue. Turn Left. Go to second light, Mount Prospect Avenue and turn left. Building 66F is on the left side , one and a half blocks from Van Houton.

From Lincoln Tunnel:
Follow exit road to NJ route three west. Continue to Bloomfield Avenue exit. Turn right to Circle and go three quarters to Allwood Road West. Mount Prospect Avenue is a few blocks on the right (a small street) Turn right and go to first light (Van Houton) continue. Building 66F is on the left side , one and a half blocks from Van Houton.

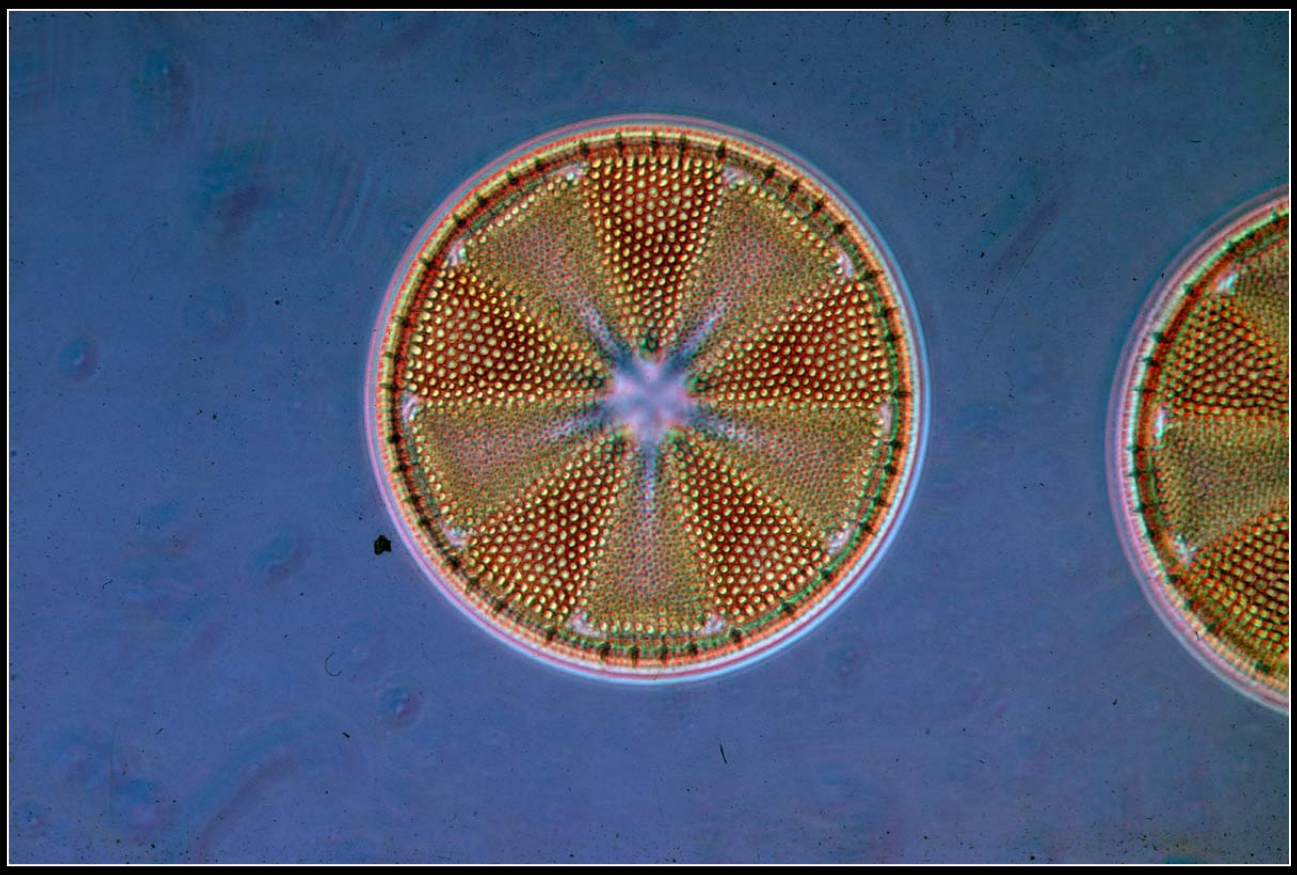
From North:
Take Garden state Parkway South to Route 46 Clifton Exit. On 46 Make second exit to Van Houton Ave. Continue to third light Mount Prospect Avenue and turn left. Building 66F is on the left side , one and a half blocks from Van Houten.

From Route 46 coming from west:
Take Broad Street Exit in Clifton and follow Directions above from GW Bridge.

From route 46 coming from East: Take Paulson Avenue Exit in Clifton and follow to Second light, Clifton Ave turn right. Go to next light, Colfax, turn left, go three blocks and turn right on Mount Prospect Ave.. Building 66F is half block on right.

Public transportation from NY:
Take NJ Transit train from Penn Station to Secaucus Transfer Station. Change trains to Bergen Line to Clifton (call NJ Transit for schedules). From Clifton Station cross under tracks to first street and go left one block to Mount Prospect Street, turn right and Building 66F is one half block on Right.

If you plan to come by bus or train, please copy the links below into your browser:
http://www.njtransit.com/sf/sf_servlet.srv?hdnPageAction=TripPlannerItineraryTo
http://www.njtransit.com/sf/sf_servlet.srv?hdnPageAction=BusSchedulesP2PTo
http://www.njtransit.com/sf/sf_servlet.srv?hdnPageAction=TrainTo



Diatom: Actinoptychus heliopelta, 160x Feb70 fr11 a6x4x200: image by Eric Gravé

Cat Flea, *Ctenocephalides felis* (Insecta: Siphonaptera: Pulicidae); brightfield & darkfield