

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



Volume 9 (29) Number9

Nov-Dec 2015

Editor: (201) 791-9826

SEASONS GREETINGS

NYMS Banquet at Landmark Tavern,

NYC, 06Dec2015

A fine Sunday for a fun and friendly gathering of NYMS members and their guests. Good food, good drink, good conversation, good speaker presentation, lots of fun for all. Landmark has been welcoming NYMS folks for many years, always warm and friendly, classic old New York.







A Not-For-Profit Educational Organization, Page 1 of 4

Board of Managers

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Manager, 2013-2016 Peter Diaczuk peter.diaczuk@gmail.com; (212)237-8896, 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

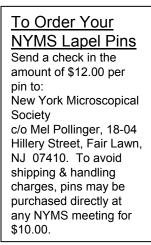
Junior (under age 18) \$10 Annually <u>Regular</u> \$30 <u>Student (age 18 or above) \$20</u> Annually <u>Supporting</u> \$60 Annually <u>Corporate</u> (includes one advertisement in NYMS News) \$175 Annually <u>Life</u> \$300 (payable within the year) To avoid missing notices: Notify Mel Pollinger if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

Awards Given by the New York Microscopical <u>Society</u>

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



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 emailing: pollingmel@optonline.net **************************************

Please remember to pay your dues

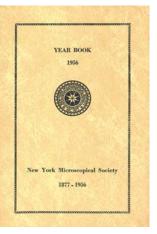
Buy and Read a Good Book on Microscopy.

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

The following original-print bulletins can be purchased by NYMS members.

The bulletins are limited in number and can be purchased, while they last,

at \$2.00 each. Also available in limited supply are original-print NYMS journals

While they last at \$10.00 each. The journals date back to 1896. The bulletins,

Journals and other out-of-archive publications may be viewed at the NYMS

Library in Clifton, New Jersey. If interested in owning a part of NYMS history,

please contact Mel Pollinger by email pollingmel@optonline.net or by daytime phone at (201) 791-9826

Vol. 1 New York, N. Y., January, 1937 No.3 COLLECTING RECENT DIATOMS *By* JOSEPH F. BURKE

Vol. 1 New York, N. Y., February, 1937 No. -4 PREPARING RECENT DIATOMS *By* JOSEPH F. BURKE

Vol. 1 New York, N. Y., November, 1937 No.5 MOUNTING RECENT DIATOMS *By* JOSEPH F. BURKE

Vol. 3 New York, N. Y. June, 1951 No: 1

PREP ARA TION OF METAL FOR MICROSCOPICAL EXAMINATION

by F. Gordon Foster Fellow, New York Microscopical Society

Vol. 1 New York, N. Y., December, 1936 No.2 MAKING A ROCK SECTION

By GEORGE E. ASHBY

Vol. 1 New York, N. Y., February, 1936 No.1

THE MYCETOZOA

By Roy M. ALLEN

By ROBERT HAGELSTEIN

Vol. 2 New York, N. Y., April, 1944 No.1 THE HISTORY OF THE MICROSCOPE

By ROBERT HAGELSTEIN Vol. 1 New York, N. Y., January, 1940 No.6 MOUNTING INSECTS BY THE PRESSURE METHOD,



Droplet by Jeff Glover

Shot with available (back) light, with sun just off frame.

Olympus OM-D EM-5, lens, 12-50 in Macro Mode. Image stats:

F-22, -1.0EV, 1/320sec, Focal Length (macro) 43mm, ISO200. Shot @10:05.

Available light (lots of it) and hand held.

Processed via Paint Shop Pro with slight contrast and shadow correction.

Location - Lehigh Gorge State Park, Rockport Area

Marine Biology Link to check out. http://research.mblwhoilibrary.org/works

McCrone Courses

Call or write for course information: McCrone Research Institute: 2820 S. Michigan Avenue, Chicago IL 60616-3230 Phone: 312-842-7100

Coming Up in 2016

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

Errata for <u>January 2015</u> Pg1 NYMS Booth images labeled :

Pg1 NYMS Booth images labeled as EAS 2015 were actually from EAS <u>November 2014</u>

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 <u>extended pdf version</u> 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).

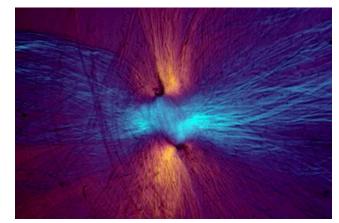
NYMS Meeting Dates

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 undergoing some repairs.

Answer to Mystery Photo for October 2015



Bovine Collagen fibers, 100x under polarized light Did you you guess correctly?

Mystery Photo for Nov-Dec 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

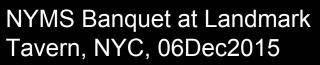
A Not-For-Profit Educational Organization, Page 4 of 4

N.Y.N.S. Supplement Section

November-December 2015

In This Section:

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Meeting 2015 Wood ID lecture
Jay Holmes Tardigrades
Nikon Small World winner
Chemical Crystallization start
McCrone courses 2016
McCrone Microcrystal Compendium
NYMS EAS Booth visitors
Membership Application
NYMS Items for Sale
Traveling Directions to NYMS
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Landmark Caver

Landmark Cavern

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□ Mel

6 0 0



WHAT WOOD IS THAT?

A furniture conservator's approach to wood identification by Yuri Yanchyshyn of Period Furniture Conservation, LLC on 25 Oct 2015 at NYMS in Clifton, NJ A highly detailed and extremely interesting presentation of the scientific method of identifying woods, emphasizing the use of light microscopy as an effective tool. Each section of the presentation became a scientific search for the truth inside the wood. One of the most dynamic and educational lectures presented for NYMS.



BEARS FROM THE HEIGHTS MEET TEACHERS UNDER THE WHALE

On September 25th the NYMS team of Guy d' Baere and Jay Holmes were joined by Aga Pierwola from the Museum to host a "Tardigrades Table" under the great Blue Whale in the Milstein Hall of Ocean Life at the American Museum of Natural History's Gottesman Center's Educator Evening for the special exhibit "Life at the Limits." Tardigrades are featured in the exhibit for their wide ranging abilities to survive high and low temperatures, and dessication among other amazing feats. Our space was small, but we made the most of it with three stereo dissection microscopes, one monocular compound light

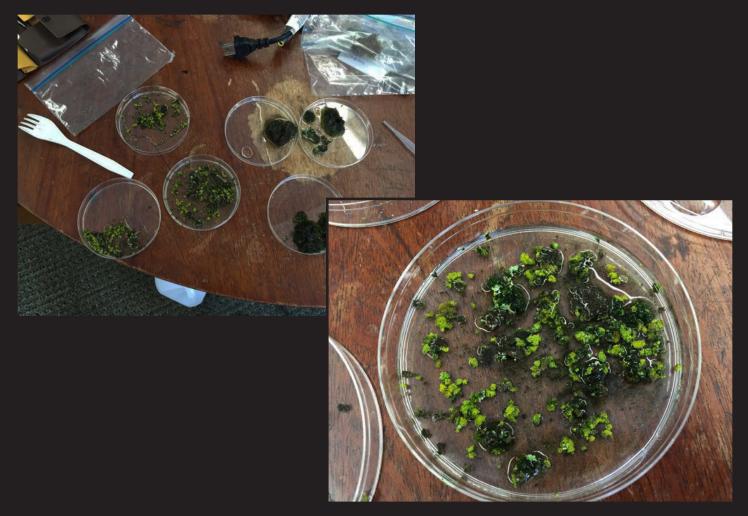




the sun was heading around the corner). The wall is a retaining wall, with soil on the other side, which probably helps keep it a little cooler and damp. The Common Goldspeck lichen is a tough lichen, able to withstand the challenges of urban life a little better than many other lichens. It is a very fine, almost dusty lichen, but was thick and flaking off in places, so a little was flicked into a small bag and brought back to the Museum. microscope and one folding projection scope beaming and image onto a flip chart screen.

Local Stars:

The tardigrades were locals! Aga and Jay collected moss and lichen samples from locations near the Museum and from the cemetery wall on West 155th Street. This Common Goldspeck (*Candelariella vitellina*) turned out to be very productive. The site on 155th Street is a northeast facing wall which gets a bit of morning sun (the photo was taken around 7:30 AM and



Back at the Museum we placed the lichen fragments into a petri dish with distilled water and allowed it to soak for three hours before the first check. At this point we did observe three active tardigrades! They soaked for another few hours before the big event. It was a bit of a challenge hunting for bears live at an event with about 500 teachers. We had lines of folks waiting then the flurry of activity when a sighting occurred. It is always a trick encouraging the lucky viewer to share the opportunity. It seems to be so easy to become entranced by their movement! It was nice to get them up on the projection microscope so more could see.

The tardigrades spent the night in an office in the Department of Education at the Museum and then joined a group of teachers and a few of their children the next day for a teacher workshop. Many participants had a

chance to enjoy some viewing during lunch and after the session (the focus of the session was not water bears but middle school science investigations).

It was a great opportunity to chat with teachers about microscopes and share or rekindle that spark of seeing some of the amazing organisms that live right in our neighborhoods. Several were interested in the whole collection process and the equipment we were using (intentionally equipment very similar to items they probably have in there schools). I am sure more opportunities will arise, and all are welcome to join the fun. The more hands we get out there, the more we will be able to encourage teachers to bring these experiences to their student and spark their interest in the world around them. - Jay Holmes



New York Microscopical Society member Frank Reiser took 20th place in Nikon's 2015 Small World Photomicrography Contest.

The winning photograph is of the underside of a diving beetle's, *Dysticus sp,* foot. The international contest's top twenty



prints will be part of Nikon's Small World traveling exhibition through 2016. The Small World exhibition schedule is accessible here: www.nikonsmallworld.com/tour

The photograph is part of a larger project Reiser has undertaken to create a series of large-file, high-resolution photomicrographs, printed at 16 X 20 inches and larger, to showcase the slide-making skills of Victorian era naturalists. Creating the high-resolution pictures uses a method known in photomicrography circles as "Stack and Stitch". It is a procedure whereby computer processing power combines well resolved areas from many images into one. For the Small World winning photograph, a microscope objective of magnification higher than the camera's frame size can accept of the selected area is used. The subject is then moved and photographed until a series of pictures covers what is desired for the

final outcome. This is done to utilize the higher resolving power afforded by a larger numerical aperture (NA) lens. In this instance, to see the subject in its entirety, six overlapping image sections were needed. The six image files were then combined into one picture using Photoshop's Photomerge. To overcome the shallow depth of focus inherent to higher NA objectives, each of the six image sections were created by using another computer processing program, Zerene Stacker. Stacker programs (there are others such as Helicon Focus and Combine Z) work by running through a series of pictures taken of one unmoving subject and select the sharpest areas from each. The program does this by comparing the contrast of adjacent pixels as a measure of sharpness. For the *Dysticus* picture stacks of 100 individual frames were shot at sequentially focused steps and then processed using Zerene. The final photo-merged picture is compiled information taken from 600 individual pictures.

A Stack Shot controller was used to automate focusing the microscope and operating the camera. The Stack Shot controller is programmable as to the number of exposures the camera will take, how many degrees the fine focus knob rotates between pictures, the interval between each process, as well as, the projects starting and ending points. A step-motor, the type used in computer printers, attached to the microscope's fine adjustment knob provides the torque for focusing.

The *Dystichus's* foot photo was taken with a Nikon Labophot II using a Nikon 210/0 BD 10X NA 0.25 objective and a Nikon 2.5X projection eyepiece. Three LED lamps equipped with diffusers provided top-stage illumination. The camera body was a Canon Mark II D5 capturing with Canon RAW. Magnification when printed at 8.5 X 11 is 140X.

Photo Caption

A magnified view of specialized hair and suction cups on the underside of a fresh-water male diving beetle's foot, *Dytiscus sp*. The modified forefeet of male diving beetles are needed by male beetles to remain attached to a female beetles' wet, slippery shells during mating while the female violently tries to dislodge the male by swimming erratically and even crashing into stones and water plants. Only male beetles having the most effective suckers on their front feet get to pass on their genetic endowment.

Chemical Crystallizations under Polarized Light

By Mel Pollinger

Regarding the procedure I used for the Amoxicillin picture, below; A small amount of the material was dissolved in hot water, filtered while hot and transfered to a 2"x4" microscope slide, covered with a cover glass and placed on a, adjustable hot plate with a surface thermometer. A pre-heated 10gm weight was placed on the cover glass and the solution was allowed to go to ambient very slowly using the temperature control on the hot plate. After most of the water had evaporated, the slide was cool enough to let crystallization occur. A thorough search throughout the slide, found a small area that contained the coil-like structures that I photographed using polarized light. The rest of the slide had interesting crystal forms, too, but that one area was definitely **cool city**.

I started doing this stuff in 1964, while working as a lab tech for a generic drug and vitamin manufacturer in the Bronx. It had all begun as a result of doing USP melting point determinations using a <u>Fisher-Johns Melting-Point</u> apparatus and observing the various crystallizations of the various sample melts during cooling. Eventually, I set up my own melting point equipment at home. The microscopical adventure had begun.

Lots of experiments followed long into the 1990s with many pleasing results and lots of duds. I worked with hundreds of compounds in hundreds of ways. The aim,was always to get interesting images. I went through lots of 35mm Extachrome Tungsten film. Now I have been in the ongoing process of digitizing those 35mm slides (about 5,000 of them). It's not likely I'll ever finish digitizing them, but the process has been educational and fascinating , allowing me to become somewhat handy with Photoshop, Powerpoint, Paradox and various 35mm scanners. One thing, above all, was that I never knew what I would find on any slide.

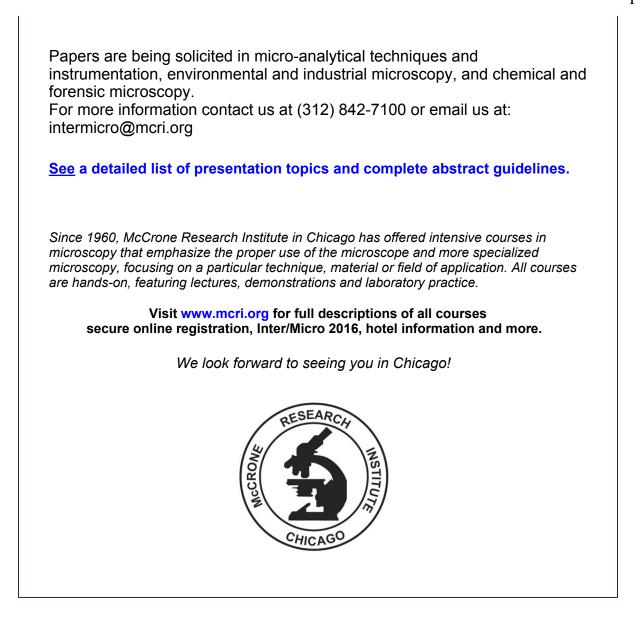


Main Identity

- From: "McCrone Research Institute" <info@mcri.org>
- To: cpollingmel@optonline.net>
- **Sent:** Monday, November 30, 2015 10:02 AM

Subject: Microscopy Courses 2016 and Call for Papers at McCrone Research Institute, Chicago





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- From: "McCrone Research Institute" <publications@mcri.org>
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- Sent: Wednesday, December 09, 2015 4:19 PM

Subject: A Modern Compendium of Microcrystal Tests for Illicit Drugs and Diverted Pharmaceuticals

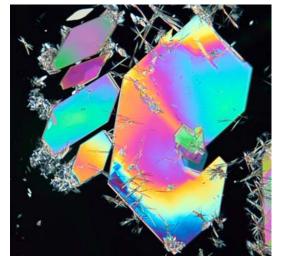
McCrone Research Institute presents...

A Modern Compendium of Microcrystal Tests for Illicit Drugs and Diverted Pharmaceuticals

McCrone Research Institute announces its new online publication, *A Modern Compendium of Microcrystal Tests for Illicit Drugs and Diverted Pharmaceuticals,* which fulfills a critical need for reliable analytical methods and assists forensic scientists and other researchers in their work.

This compendium contains 19 drugs for which microcrystal tests using various reagents have been previously developed. It describes in detail the microcrystals formed from each test and includes photomicrographs, morphology illustrations, optical properties, notes and infrared (IR) spectra of the microcrystals.

Microcrystal tests, using polarized light microscopy (PLM), can identify most illicit drugs specifically and quickly, and they are inexpensive compared to other methods. In addition, proper use of the light microscope and



microcrystal tests can check and confirm the results obtained by alternative methods.

The photomicrograph (above) shows a microcrystal test for pseudoephedrine with dilituric acid.

Learn more and download the Modern Compendium of Microcrystal Tests at www.mcri.org.

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Students visiting the NYMS booth at EAS 2015



John Jay College, New York City, N.Y.



Cedarcrest College, Allentown, PA

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

		Nickname
Phone		E-Mail
Phone Would you prefer t		
On what topic are y		
Education D Librar Who referred you to Academic and Hon Degree	y □ Finance □ Curator □ F NYMS? orary Degrees: Conferring Institution	ttees? Yes No Awards Membership lousing Program Publications History Date
•		
	ntific Societies	
I have enclosed a c \$30, Supporting \$60 advertisement in NY I understand portion	nal if over 18) heck for \$ to cover 1), Life \$300(payable within 1 (MS News), Junior \$5 (under ns of the above information 1	ny application fees for membership {Annual he year), Corporate \$175(includes one 18 years old)}.Student (over 18) \$20 nay be used in NYMS publications. phone included in the NYMS Directory.
Signature		Date

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

New York Microscopical Society Items For Sale 08-Sept-2015

N.Y.M.S. Microscope Covers

ltem #	Size	Member Price	List Price
MT-003	Small Microscope or Stereo, 15"W x 17"H	\$18.00	\$20.00
MT-004	Lab Microscope or Large Stereo, 20"W x 18"H	\$23.00	\$25.00
MT-005	Large Lab Scope, 22''W x 21''H	\$28.00	\$30.00
MT-009	Large Lab Scope with Camera, 9"W x 19"Deep x 23"H	\$31.00	\$33.00
MT-010	Universal Scope with Camera, 11"W x 25"Deep x 26"H	\$36.00	\$40.00
MT-012	X-large Scope, 20"W x 28"Deep x 32"H	\$45.00	\$50.00
	N.Y.M.S. Microscopes (see below for in	nages)	
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

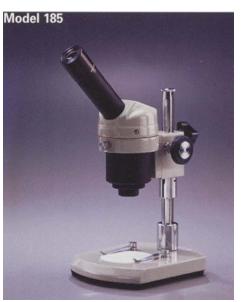
Other Items

NYMS Glossary of Microscopical Terms	\$30.00	\$35.00
NYMS Patch	\$5.00	\$7.00
Microscope Cleaning Kit*	\$40.00	\$45.00
NYMS Lapel Pin	\$10.00	\$15.00
NYMS Engraved Pen	\$7.00	\$10.00

*When available



Model 131: Tungsten Model 131-FLU: Fluorescent





Model 125-LED Cordless

Model 185: 20x



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.

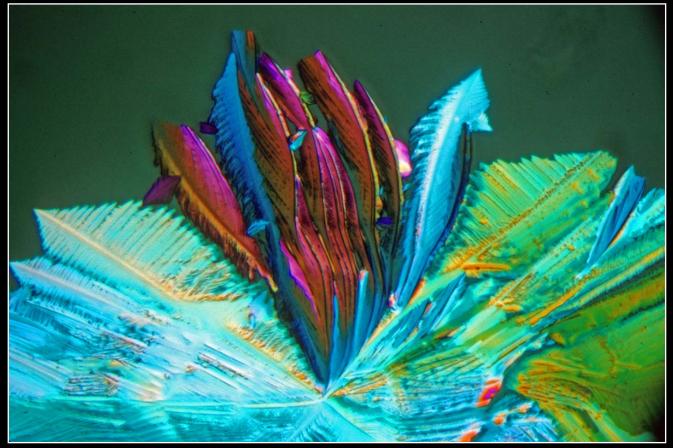
<u>From route 46 coming from East:</u> Take Paulson Avenue Exit in Clifton and follow to Second light, Clifton Ave turn right. Go to next light, Colfax, turn left, go three blocks and turn right on Mount Prospect Ave.. Building 66F is half block on right.

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



Arabo-ascorbic acid, 100x (P1162808)b6x4x200 Polarized-light: by Mel Pollinger



Fringed Gentian petals, Lehigh Gorge, Hickory Run State Park: by Jeff Glover