NYMS ANNUAL BANQUET DECEMBER 11, 2016

What: Enjoy a wonderful Buffet Luncheon, including soft beverages (cash bar available) and desserts, with your fellow-members and guests.

Enjoy an exciting presentation by Asst. Professor Nicholas Petraco, MS, D-ABC
John Jay College of Criminal Justice (See page 3 for add’l info).

An overall jolly time at one of the oldest restaurants in mid-town Manhattan;
The Landmark Tavern.

When: Sunday December 11, 2016, from noon until 3:30pm.
Where: Landmark Tavern, 626 11th Ave., at W. 46th St New York City, NY
Tel: 212-247-2562.

Cost: $35.00 per person.

How: Reserve your place now* by filling in the Reservation Request form below and mailing it along with your check to the Treasurer (see address below).

*Reservation requests must be received on or before November 28, 2016

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Number attending _________ @ $35/each = (write check amount) _______
Member name________________________________________________________
Address_______________________________________________________________
Phone__________________   eMail____________________
________________________________________________________________
______________________________________________________________
Send this form and payment to:

NYMS Banquet 2016
C/o Mel Pollinger, Treasurer
18-04 Hillery Street
Fair Lawn, NJ 07410-5207

For additional information contact Mel Pollinger
(201) 791-9826 or email: pollingmel@optonline.net

Space is limited, so rush your reservation request in to reserve your place(s) asap.
New York Microscopical Society Board of Managers  
(Officers Term 2016-2017)

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

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

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

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.

Please remember to pay your dues

Buy and Read a Good Book on Microscopy.

A Not-For-Profit Educational Organization,(nyms.org) Page 2 of
On September 29 in Manhattan at the very hospitable Shevchenko Scientific Society's very up to date lecture hall, we opened NYMS' 2016-17 program of monthly lectures by hosting Sally Warring, ABD, the protistologist and international media sensation. John Scott

“Teaching Microscopy,” edited by John Gustav Delly
NYMS Library No. 7149

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From page 1…
Banquet Speaker Nicholas Petraco, Lecture Title: The Factual Story of the Authentication of the Lost 9/11 Flag.

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Coming Up in January, or February, 2017
We will meet in Manhattan together with the New York Society for Experimental Microscopy (NYSEM).

***********************************************************

Mystery Photo for Nov-Dec 2016

Answer on pg 4
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 or Book?

The various microscopes and library are presently for use on the main floor of the New York Microscopical Society building in Clifton, N.J. To arrange for a visit, please contact John Scott, or Mel Pollinger (see pg 2 for details)

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 $40.00 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 lecture meetings of NYMS are usually held in Clifton on the last Sunday of the months of Jan., Feb., Mar., May, Sep., Oct. Exceptions and additions will be noted in the Newsletter, or by email.

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

Pictures by NYMS Members

Crocoite micromount, f.w 3: Mel Pollinger

Radiolarian,b3x2x100; Eric Gravé (see supplement)

Additional Historical NYMS Supplements

Email Newsletter recipients can also receive copies of NYMS Newsletter pdf back-Issues from 2007. Copies of older newsletters will be included in the supplement section 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.
In This Section:
◊ Warring Talk 29Sep2016
◊ Identification with Polarized-light
◊ Historical NYMS Bulletins
◊ McCrone remaining courses
◊ Membership Application
◊ NYMS Items for Sale
◊ Directions to NYMS
◊ Last page images

Radiolarian Photo by Eric Gravé
Michel-Lévy Color Chart

Identification of minerals in polarized light

Reprinted here by permission of Carl Zeiss Microscopy
Polarization in transmitted light

Orthoscopy and conoscopy are the two key methods in traditional transmitted light polarization microscopy. With their different approaches, they provide different options, for example for mineral identification in geological microscopy.

The Phototube Pol is designed for high-performance conoscopy. Thanks to its additional intermediate image plane with suspended crosshair and field of view diaphragm, it permits the conoscopy of crystals larger than 10 μm.

In orthoscopy, every object point corresponds to a point in the image. Minerals are identified by morphological and optical properties like shape, cracks, color and pleochroism, and by their characteristic interference colors. In conoscopy on the other hand, every image point corresponds to a direction in the specimen. This technique requires the use of the highest objective and condenser aperture possible.

When the Amici-Bertrand lens is placed in the light path, the interference or axial image in the back focal plane of the specimen becomes visible. Conoscopy is employed whenever additional information about the specimen is required for optical analysis. It provides interference images that can be seen through the eyepiece and enables differentiation according to 1 or 2 axes and with compensator λ (λ-plate, Red I), according to 1-axis positive/negative or 2-axis positive/negative.

* Field of view diaphragm
Determination of birefringence by means of the Michel-Lévy Color Chart

When a ray of light enters an anisotropic medium, it is almost always split into two linearly polarized waves; the ordinary and the extraordinary ray. Both partial rays are characterized by different propagation rates due to different refraction indices. This characteristic is called birefringence. The oscillation planes of these two partial rays are perpendicular to each other.

The superposition of the two partial waves (constructive or destructive) is called interference; the colors which appear under crossed (90°) polarizers are called interference colors.

Rotating the mineral into the position of extinction
- Total extinction (darkest position of mineral)

Inserting the lambda compensator
(Addition of a path difference of 551 nm)
Assumption: second order blue
(path difference ca 655 nm)

Effect: In subtraction position the mineral appears lavender- to bluegrey (655 nm – 551 nm = 104 nm)

Rotating the mineral by a further 90°
Effect: In this position (addition position) the mineral appears greenish blue (655 nm + 551 nm = 1206 nm)
Result: The interference color has been identified as a second order blue.

Rotating the mineral into a diagonal position
(45° from position of extinction)
- Maximum brightness
- Identification of interference color: blue

This amounts to two distinct possibilities:
- second order blue
  (path difference ca 655 nm)
- third order blue
  (path difference ca 1150 nm)

Determining the birefringence with the Michel-Lévy Color Chart

Follow the 655 nm line of the path difference across to find the intersection with the corresponding thickness line (usually 25 – 30 µm). From this intersection, follow the “sun line” downwards towards the bottom right to pinpoint the respective birefringence magnitude on the scale on the right. In this case this leads to a birefringence value of 0.024; the mineral has been identified as an augite.
Behavior of optically anisotropic crystals in linearly and circularly polarized light, orthoscopy and conoscopy.

Determination of the optical character of uniaxial and biaxial minerals in linearly and circularly polarized light. The reference direction $\eta_y$ of the $\lambda$-compensator is aligned in NE-SW.

In contrast to linear polarization, circularly polarized light allows minerals to display their interference colors devoid of extinction. For that reason, circular polarization is the preferred method for image analytical procedures.
Auguste Michel-Lévy (1844 –1911)
French geologist, Inspector General of Mining and director of the Geological Survey in France, made a name for himself by his research into extrusive rocks, their microscopic structure and origin.

Until this day, the interference color chart proposed by him in 1888 remains an important tool in the identification of thin sections of minerals with polarization microscopy.

Then as now, Carl Zeiss sets benchmarks with their polarized light microscopes, in mineralogy and petrography as well as materialography and other application fields.
News of our Sept 29, 2016 meeting

(Images in the proceeding pages were made in the order of Ms. Warring’s presentation)

Our opening program, reported by NYMS President John Scott:

On September 29 in Manhattan at the very hospitable Shevchenko Scientific Society’s very up to date lecture hall, we opened NYMS’ 2016-17 program of monthly lectures by hosting Sally Warring, ABD, the protistologist and international media sensation. Warring is an innovative and engaging New York University doctoral student in biology, who’s been attracting attention and admiration for writing and illustrating her ‘Pondlife’ Instagram page, Twitter feed, and website, replete with striking and captivating images, videos, tech tips, commentary and links. Warring’s topic: ‘Pondlife: popularizing protists on social media platforms.’

Addressing a rapt audience, Warring sketched her personal background and her professional research on protists living within human and similar organisms. She outlined the ubiquity, profusion, and taxonomy of microbes in general, returning to protists throughout. Sally seems an avid student of history, too, and read to us directly from Antonie van Leeuwenhoek’s amazingly diverse and prolific correspondence. At the same time she skillfully illustrated and well described not only v. Leeuwenhoek’s scientific life and legacy, but also the arcane production and straightforward use of the famous microscope, and some of the many protists he (and she) have collected, studied, and documented in images and in prose.

Giving our energetic and erudite guide a well deserved break, we welcomed Cornell/Rockefeller/Sloan-Kettering dual-doctoral student Du Cheng of his iDU Optics enterprise (www.iDuOptics.com), who kindly stepped up to introduce and demonstrate an iDU mechanico-optical accessory used by Warring and others in Apple iPhone photomacrography. Our audience clustered eagerly around Du’s demonstration.

Soon Sally Warring stood among us as we thronged her podium, completely engaged, and gently deluging her with questions and comments. Sally showed us the portable microscope she often takes along while collecting protists, and described how she herself finds protists in slime and water of local streams and ponds. Warring elegantly demonstrated preparation of live-specimen slides for the microscope stage, explained and implemented simple air-interfacing to her smartphone, and ‘Pondlife live,’ sending moving images of living protists directly from microscope to PC and the Shevchenko Society’s digital audiovisual system, across the Internet via her phone.

As Warring gathered her materials to leave, we opened a folio she had brought along, and enjoyed selections of prints from ‘Pondlife’ editions, available via the website. Afterward, a number of us walked to the gourmet Dining Room at NYMS President John Scott’s nearby Salmagundi Art Club, where we toasted Sally Warring in convivial conversation and over sumptuous fare. Here’s to Sally Warring, to Du Cheng, to NYMS members and all who attended on the 29th. Here’s to the Shevchenko Scientific Society, and here’s to all who helped publicise and produce our 2016-17 Program-opening event!    -JS

Photos & Report by John Scott
Historical NYMS Bulletins For Sale

The bulletins are limited in number and can be purchased, while they last, as a set of 8 Bulletins for $10.00/set plus mailing. Individual copies are $2.00/ea

The bulletins and other out-of-archive publications may be viewed at the NYMS Library in Montclair, New Jersey.

If interested in owning a part of NYMS history, please contact Mel Pollinger by email at pollingmel@optonline.net or simply pick up a set at the next NYMS meeting in Clifton, N.J.

Each set of NYMS Bulletins is comprised of the following:

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
PREPARATION OF METAL FOR MICROSCOPOICAL 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 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
By Roy M. ALLEN
2017 McCrone Microscopy Courses

At McCrone Research Institute, Chicago

McCrone Research Institute in Chicago is pleased to announce the 2017 microscopy course schedule. View the entire McCrone course calendar or select the following links to see all of our courses by type and to register online.

- Asbestos, Fungal Spore, Pollen, Dust and Other Indoor Air Quality Courses
- PLM and Forensic Microscopy Courses
- SEM, IR, Fluorescence, Raman, Sample Prep and Other Micromethods Courses
- Specialty Microscopy and Other Courses

Remaining 2016 Courses

We are still accepting registrations for the following courses. Register today -- seats are limited.

- Advanced Asbestos Identification -- October 24-28, 2016
- Applied Polarized Light Microscopy/Forensic Microscopy -- November 7-11, 2016
- Fluorescence Microscopy -- December 6-8, 2016

Since 1960, McCrone Research Institute in Chicago has offered intensive courses in microscopy that emphasize the proper use of the microscope and more specialized microscopy, focusing on a particular technique, material or field of application. All courses are hands-on, featuring lectures, demonstrations and
laboratory practice.

Visit www.mcri.org for full descriptions of all courses, secure online registration, hotel information, and more.

We look forward to seeing you in Chicago!
Please Print

New York Microscopical Society

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
.................................................................................................................................................................
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Scientific Publications
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Membership in Scientific Societies
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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
29-Feb-2016

N.Y.M.S. Microscope Covers

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
<th>Member Price</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT-003</td>
<td>Small Microscope or Stereo, 15&quot;W x 17&quot;H</td>
<td>$18.00</td>
<td>$20.00</td>
</tr>
<tr>
<td>MT-004</td>
<td>Lab Microscope or Large Stereo, 20&quot;W x 18&quot;H</td>
<td>$23.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>MT-005</td>
<td>Large Lab Scope, 22&quot;W x 21&quot;H</td>
<td>$28.00</td>
<td>$30.00</td>
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<tr>
<td>MT-009</td>
<td>Large Lab Scope with Camera, 9&quot;W x 19&quot;Deep x 23&quot;H</td>
<td>$31.00</td>
<td>$33.00</td>
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<tr>
<td>MT-010</td>
<td>Universal Scope with Camera, 11&quot;W x 25&quot;Deep x 23&quot;H</td>
<td>$36.00</td>
<td>$40.00</td>
</tr>
<tr>
<td>MT-012</td>
<td>X-large Scope</td>
<td>$45.00</td>
<td>$50.00</td>
</tr>
</tbody>
</table>

N.Y.M.S. Microscopes (see below for images)

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
- Rotifer Book by Howard Taylor  $20.00  $40.00
*When available

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 Houten.

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 Houten.

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=TrainTo