



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

March 2012

N.Y.M.S. (973) 470-8733

Volume 6 (26) Number 3

Meeting Announcement

2012 Winter-Spring Lecture Series

Saturday, March 24, 2012, Lecture starts at 2pm
NYMS Headquarters, Clifton, NJ

A method of pressing materials to observe phase transitions and engineer crystals. By William Neuberg

Having worked with various devices to press on microscopical specimens, I have developed a simple device using a pen tip with the ball removed that allows observation while pressing. This has been used to observe phase transitions from solid to liquid and between solid polymorphs. I will show photos of the device and various crystalline specimens, a wide variety of waxes, and describe these.

Bill Neuberg received a BS in Chemistry from Rensselaer Polytechnic Institute in 1954 and served as a Naval Aviator prior to joining his family chemical business. He developed the use of micronized wax and PTFE in printing ink and first became involved with microscopy to measure particle size. He has since studied microscopy with McCrone and crystallography at Rutgers and used the microscope for various investigations related to solid lubricants. He has published investigations on the mechanism of the rub resistance in printing ink, illustrating that when rubbed, waxes flow as though melting and PTFE seems to shear along crystal planes. His current work involves the study of wax properties including polymorphism and crystal engineering. Bill is presently Chairman and Technical Director of Shamrock Technologies in Newark, www.shamrocktechnologies.com.

Born 3/5/30 in Hackensack

Grandfather and father chemical traders, uncles chemical salesmen. B.S. Chemistry RPI '54, US Navy, Naval Aviator, fighter pilot. flight instructor. Various chemical development drilling mud, sales, and manufacturing, consumer product mfg and sales, cream of tartar recovery, shipping, mfg, sales, wax sales, wax development, invention, business.

Doors will be open at Noon. Refreshments will be available. Those attending can have a tour of our facility and also see our member-accessible microscopy lab and library. For additional information please contact Mel Pollinger (pollingmel@optonline.net) or (201)791-9826, no later than noon on Saturday, Feb. 25th, or cell= (201) 314-1354 (meeting day only)

February 26, 2012 Micromineral Workshop



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Awards Committee

Chair: John A. Reffner

Members

Jan Hinsch
Don O'Leary
Mel Pollinger

Dues and Addresses

Please remember to mail in your Dues to Mary McCann, Membership Chair (see this page for address).

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 Mary McCann and Mel Pollinger if you have changed your address, phone or email.

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.



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

Dues for 2012 is now due!

Buy and Read a Good Book on Microscopy.

A Review of the NYSEM-NYMS Joint Meeting

The New York Microscopical Society (NYMS) and The New York Society of Experimental Microscopists (NYSEM) held their annual joint meeting on Wednesday February 15, 2012 at Weill Cornell Medical College. The invited speaker was Erik L. Snapp, Ph.D., Assistant Professor Department of Anatomy & Structural Biology Albert Einstein College of Medicine. The title of his talk was: "Fluorescence Microscopy Applications for Cell Biology: Practical issues with Fluorescent Proteins and measuring protein mobility in Cells". Dr. Snapp discussed quantitative fluorescence microscopy methods to reveal information about protein mobility in living cells. He informed us of a new class of superfolder GFP probes with enhanced fluorescence properties that make them ideal for live cell imaging. Dr. Snapp's informative talk stimulated a number of probing questions from those in attendance.

The NYMS & NYSEM joint meeting continues a long tradition where the membership of our two societies can interact scientifically and socially. Thirty people, representing members of both societies, were in attendance. The talk was followed by a social hour with refreshments.

Frank Macaluso



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.



NYMS Outreach 2012

The schedule for NYMS outreach with the Central Park Conservancy events are:

- On a Wing, at the Belvedere Castle, Saturday May 19th, noon to 3 PM

- Family Fishing Day, on the Harlem Meer, Saturday June 23rd

- Social at the Dana Discovery Center on the Harlem Meer, Thursday October 18th, 6:30 PM - 8

Volunteers to help and plan are needed and welcome. Come join the fun and help NYMS grow.

Guy De Baere

From a message sent by Thom Hopen forwarded by Jean Portell: A very interesting website on diatoms and two other websites by Jay Holmes.

<http://www.ucl.ac.uk/GeolSci/micropal/diatom.html>

<http://www.cryptolithus.com/microscopy/Bancks/bancks.html>

http://www.cryptolithus.com/microscopy/Bancks/lenses/Lens_Lap_8.html

Jay is a member of NYMS and an educator at the American Museum of Natural History.

Microscope Day

In April Mic Day will take place at John Jay College, date to be announced.

NYMS Welcomes Visitors

Although most NYMS events and meetings are held in Clifton, New Jersey on Sundays, the building may be opened for visitors at other times providing an appointment is made with Don O'Leary or Mel Pollinger at least two days prior to the desired appointment time. NYMS Headquarters at Clifton, NJ will be open by appointment only to members from 8:00pm to 10:00 pm most Tuesday evenings.

Those members wishing to visit must call Don O'Leary or Mel Pollinger to confirm. Don's cell-phone number is (201) 519-2176 or email: dkoleary@verizon.net. Mel's Home phone number is (201) 791-9826 or email: pollingmel@optonline.net

Dues for 2012 is now due!

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.

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 Curator/Educational Chairman and available directly from NYMS for only \$35.00 plus shipping & handling, or may be purchased at a meeting. Call or email Mel Pollinger or Don O'Leary for details (see page two for contact numbers).

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

Answer to Mystery Photo for February 2012



Eye [of Goose]. Image by MelPollinger.



Taken in Spring of 2011 at the Celery Farm in Allendale, NJ. Note the sky and sun reflection. Did you correctly guess? Seymour Perlowitz came the closest with: eye of a bird.

Mystery Photo for April 2012



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.

Got something you want to sell, trade or publish in the Newsletter and/or on the website? Write, call or send an email message to:

201-791-9826 or pollingmel@optonline.net (images ok)

or

Mel Pollinger, Editor

NYMS Newsletter

18-04 Hillery Street

Fair Lawn, NJ 07410



Supporting Member

NYMS Newsletter Extended Section, March 2012

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 Houton.

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 ProspectAve.. 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

In This Section: Directions to NYMS

- NYMS Dues Notice
- Spring Microscopy Courses Application
- Article: Camera Stand for Photomicroscopy
- NYMS Micromineral-Micromount Workshop
- EAS Call for Papers
- Skip Palenik Bio Sketch
- Sale Items & Image

Dear NYMS Member,

Dues Are Due in January

NYMS Membership dues for 2012 are now payable. We are in the process of setting up a full program of speakers, courses, workshops and celebrations at our Clifton headquarters in 2012. NYMS values your support and participation.

Please make sure to include your current email address. Email communications are particularly useful for announcing any short-term program changes, and provide convenient means for sending supplementary materials. In addition email saves paper and postage - and saves you space. If you have a web site related to your microscopy interests please let us know – we'll add it to the roster.

And--Please include any of your Contact information that has changed in the last two years.

NYMS MEMBERSHIP CONTACT INFORMATION

Name: _____

Email address: (please print clearly) _____

Address for Newsletter? Email : __Y/N Home _____

Work _____

Microscopy Related Website _____

Address: _____

Telephone: Work _____ Home: _____

Microscopy interests:

I do Light _____ Electron _____ Other (what?) _____ microscopy

I use microscopes at Work _____ Home _____

I use microscopes for Research _____ Teaching _____ QC _____ Hobby _____ other _____

Mostly I view specimens that are: Biological ____ Industrial ____ describe? _____

Or Other (what?) _____

I also enjoy viewing (what?) _____

In microscopy I am a Professional _____ Amateur _____ Beginner _____

Are you interested in working on NYMS Committees? Awards _____ Membership _____ Education _____ Library _____ Finance _____ Curator _____ Program _____ Publications _____ History _____

Checks should be made out to NYMS. Updated contact information may be included with your check to the address below, or it may be sent by email to me at mccanns@tiac.net,

Mary McCann

Regular Membership: \$30 per year. Supporting Membership: \$60 per year. Life Membership is \$300, payable within 1 year Corporate Membership: \$175

Junior Membership (18 or under): \$10

Student Membership (over 18 & a student) is \$20

Thank you for your response!

Mary McCann

NYMS Membership Chair

161 Claflin Street

Belmont MA 02478



New York Microscopical Society
Bernard Friedman Memorial Workshops
Use of the Microscope & Polarized Light Microscopy
April 28, May 5, 12, 19, 26, June 2,9, 2012

A basic course on light microscopy which will cover the following topics:

Theory of microscopy, Kohler Illumination
Diffraction Theory, Contrast Methods
Polarized light, Phase Contrast, Interference
Hoffman contrast, Rheinberg, Dark-field & oblique Illumination

An advanced course on polarized light microscopy which will cover the following topics:

The nature of polarized light
The origin and interpretation of interference colors
Birefringence and crystal orientation, The Indicatrix
Compensation and variable compensators
Interference figures and their interpretation

The workshop will consist of seven consecutive Saturdays of lectures and hands on labs to cover the theoretical and practical aspects of microscopy. The course instructors are *Jan Hinsch* formerly of Leica Microsystems, Inc., *Dennis O'Leary* of Micro-Optical Methods, *Mary McCann* of McCann Imaging, *John Reffner* of John Jay College and N.Y.M.S. Instructor *Don O'Leary*.

WHEN: April 28, May 5, 12, 19, 26, June 2,9, 2012. 10AM to 4 PM

WHERE: One Prospect Village Plaza, Clifton, NJ 07013, accessible by public transportation. Information on car pools and transportation will be provided.)

COST: \$695 for NYMS members, \$725 for non-members (includes membership) Lunch and course materials are included. Checks made out to NYMS.

HOW: Register using form below. Limited to the first 12 registrants.
Send form to: Don O'Leary, 10 Sampson Street, Unit 113, Saddle Brook, NJ 07663

FURTHER INFORMATION: Call D. O'Leary (201) 519-2176, E-mail: dkoleary@verizon.net

PLEASE MAIL THIS APPLICATION WITH YOUR PAYMENT

Registration Form Use of the Microscope & Polarized Light Microscopy

N.Y.M.S. Member _____ (\$695) Non-Member _____ (\$725), April 28 to June 9

Registration for Use of the Microscope only (4 Sessions)

N.Y.M.S. Member _____ (\$395) Non-Member _____ (\$425), April 28 to May 19

Registration for Polarized Light Microscopy Only (4 Sessions)

N.Y.M.S. Member _____ (\$395) Non-Member _____ (\$425), May 19 to June 9

Name _____

Address _____

City _____ State _____ zip _____

Phone (W) _____ (H) _____

e-mail address _____.

Please send your application and payment directly to:

NYMS Spring 2012 Courses
c/o Mel Pollinger, Treasurer
18-04 Hillery Street
Fair Lawn, NJ 07410-5207

A Camera Stand for Photomicroscopy

Michael Reese Much, RMS EMS
Bethlehem, Pennsylvania, USA

I have found that there are very good values in Swift microscopes on eBay. Last year I wrote an article on Micscape about restoring a Swift Collegiate. I had been watching eBay for a Swift trinocular and won a bid of \$150 for an MD3300-D with 4x, 10x, 20x and a 100x oil objectives. The seller felt guilty about not shipping it for two weeks and refunded \$50, so I got it for an exceptional price. The only problem was the diffuser for the lamphouse was cracked, but I was able to fabricate a new diffuser by taking the glass out of a 46mm camera filter ring and sanding the glass to a frosted state using very fine grit sandpaper.

My intention was to mount an Olympus E-420 to the photo tube for photomicrography using a 1960s era Pentax microscope adapter that I modified to Olympus Four Thirds by epoxying an MF-1 OM to Four Thirds Adapter to the Pentax microscope adapter. I'm always on the lookout for the Pentax adapters because they are easily modified and well-built.

As it happened last winter, I found a high-tech yard sale on the Internet. Among the items were a Beseler 45MCRX enlarger and a Pentax microscope adapter. I was interested in both. I emailed the seller asking where he was located. He replied he was in the Finger Lakes region of New York state (about 350 miles from my home) and if I came up to pick up the enlarger it was mine for free. Needless to say, my wife and I trekked up there on a miserable snowing February Saturday to pick up the enlarger. I also got the Pentax adapter for \$10. The seller had all kinds of electronic and photographic items, and he also gave me a 4 foot column for an Omega D-Series enlarger. On the way out the door he also offered me a free set of Vivitar extension tubes that he said didn't fit any of his gear. As luck would have it, when I got home I found out they were for the Olympus OM System, for which I have a lot of macro gear.

This saga actually leads back to the Swift trinocular.

When I mounted the DSLR on the scope's photo tube with the modified Pentax adapter, it was impossible to get a sharp image due to vibration from the camera, even when using the Anti-Shock function in the camera to delay the shutter firing. Since the scope had a swiveling head, I thought that epoxying the head into position would solve the problem, since even with the set screw firmly tightened into the head's dovetail channel it was not solid. No such luck.

I had been very lucky with my other trinocular and my stereo scope regarding vibration, but it looked like I would have to go with the only solution left to my fellow microscopists – the enlarger stand jerry-rig. Ted Clarke and Paul James have written about positioning the camera above the eyepiece with no contact with the scope itself.

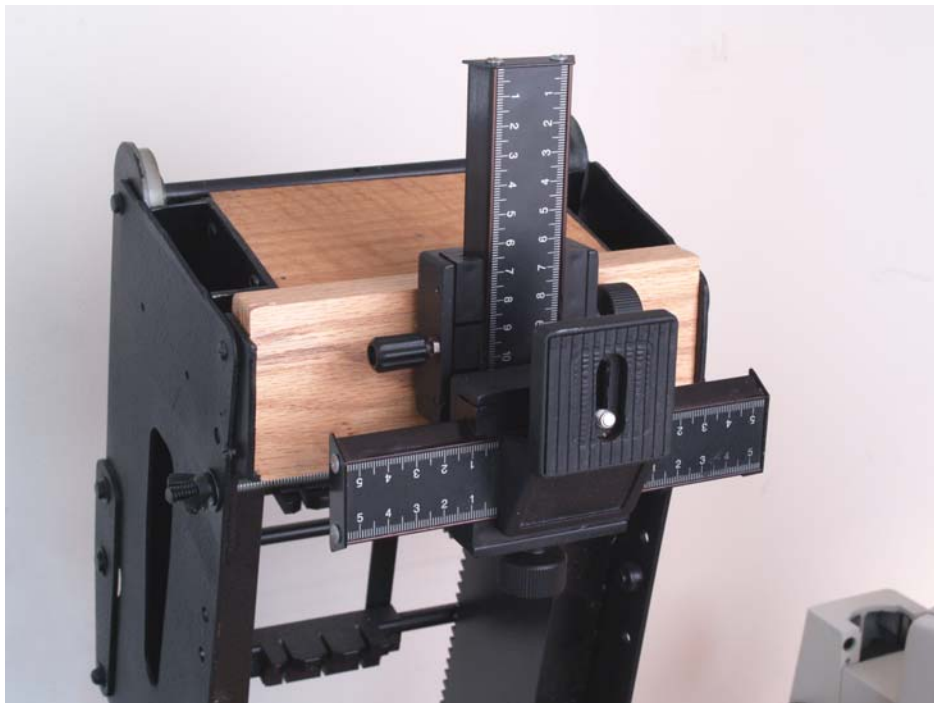


I put the Omega enlarger column on my workbench and started evaluating what wasn't necessary, which was quite a lot. The assemblies for spring loading the enlarger head, the lamp house mechanisms, the negative stage and about two feet of the four foot height would have to go. So in addition to lots of unscrewing, it also meant a lot of metal cutting with the Dremel power tool to get rid of unnecessary metal. For years I had been using the ceramic Cut-Off Wheels, and every Christmas I buy that huge selection of Dremel

expendables in the big plastic case, but I had never tried the fiber Cut-Off Wheels. Friends, they are miraculous. If too much pressure is put on the ceramic wheels, they shatter. The fiber wheels hold in there until they are just a nub. And they cut much faster. The column was mounted on a heavy oak base with an 18 inch outrigger on the back to laterally stabilize the base.



The top of the enlarger column was closed with a block of oak and a focusing rail was mounted on another block of oak to accommodate the camera. The flanges on the sides of the column were squeezed in to lock them in place with a $\frac{1}{2}$ -20 threaded rod, as can be seen just below the oak block holding the focusing rail.



The focusing rail was necessary to be able to align the camera with the microscope for parfocality.



Now the saga gets interesting. I tried numerous eyepieces – wide field, Olympus NFKs, everything I had, but two problems remained: the magnification was too great and the chromatic aberration was horrendous when trying to project the image directly onto the camera sensor. What was different about this setup from my other trinocular? My other trinocular has a prism that is pulled out of the light path for the binocular eyepieces to project the image directly to the camera sensor.

The Swift uses a beam splitter, so part of the light always goes to the eyepieces and part of the light goes to the photo tube. The setup would require a relay lens to correct the magnification and the chromatic aberration. I had two Olympus OM-Series lenses – a 28mm and a 50mm. The 50mm had too much magnification, but the 28mm was just right. I had gotten the 28mm years ago after reading about

Ted Clarke's setup, but on my scope there was too much barrel distortion and the field flatness was unacceptable. For some reason (and I am not an optical physicist – I do this stuff through trial and error – which is why have a load of parts), the 28mm performs brilliantly on this system.



As you can see, the relay lens (the Olympus 28mm) has to be almost in contact with the eyepiece on the scope. Then the optical path is made light tight with the neck of a black silk sock held in place below the photo tube by a pipe cleaner (the black professional model). The last step is to setup parfocality by focusing using the focus rail and Live View in the E-420 using a stage micrometer slide for calibration. The E-420 has a magnified view in Live View, allowing critical focus. The next step will be to make a table of the field coverage in microns for each objective using the stage micrometer slide.

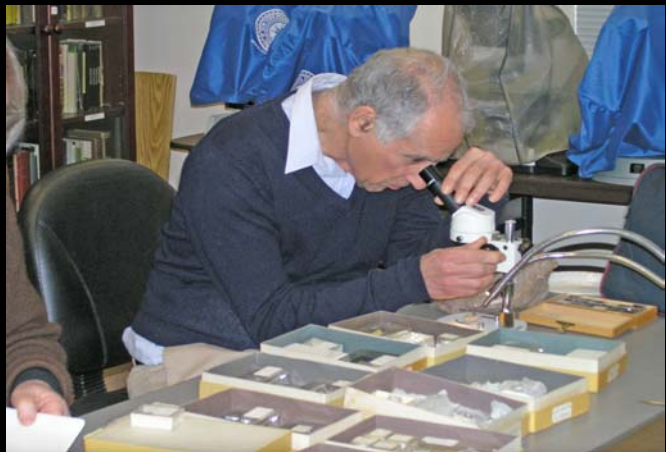


I hope what I have learned through this arduous process may help you in setting up your systems. This whole process took about four months of on-again off-again experimentation, but now I can actually get down to creating some images.

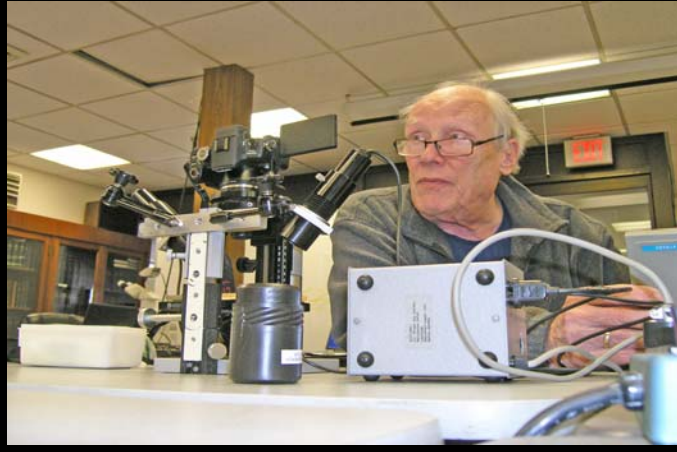
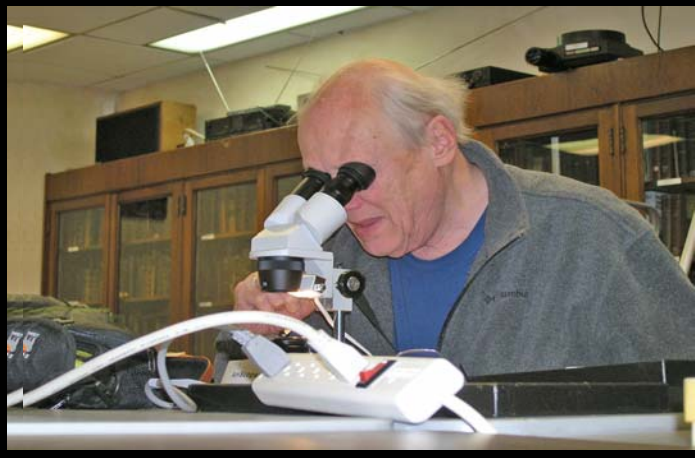
I would also like to express my appreciation to all of the contributors to Micscape for their generous sharing of their knowledge and travails.

Michael Reese Much can be contacted at Amoeba1@rcn.com

NYMS Micromount Workshop at Clifton, NJ, 26-Feb-2012



NYMS Micromount Workshop at Clifton, NJ, 26-Feb-2012



Call for Papers



We want **YOU** to be part of the
2012 Eastern Analytical Symposium:
Energizing Analytical Solutions.

Online submission opens March 1, 2012
Deadline: April 15, 2012

2012 Eastern Analytical Symposium & Exposition
Garden State Exhibit Center | Somerset, NJ
November 12–15, 2012

Visit www.EAS.org for details.



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Spring Lake, NJ 07762

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EAS seeks contributions from scientists in many areas of analysis, which makes its program uniquely strong. Areas of interest include:

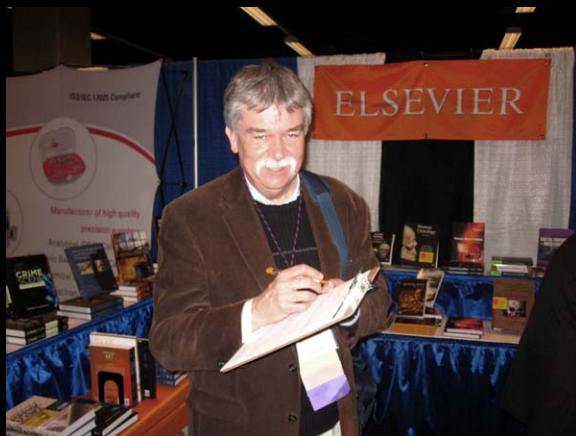
Bioanalysis	Laboratory Management	Sample Preparation (SPME, SFE, Microextraction)
Chemometrics	Laboratory Miniaturization	Science Education
Conservation Science	Liquid Chromatography (HPLC and UPLC)	Sensors
Consumer Product Analysis	Mass Spectrometry (all areas)	Separation Science (all areas)
Environmental Analysis	Microchemistry	Solid State Analysis
Food Analysis	Microscopy	Space Analytics
Forensic Analysis	Nanoscale	Spectroscopy
Gas Chromatography	Pharmaceutical Analysis	Surface Science
Hyphenated Methods	Process Analytical Science	Trace Level Analysis
Industrial Hygiene	Quality-by-Design	
Laboratory Automation		

Contact EAS (732) 449-2280 | askeas@eas.org
www.EAS.org

Skip Palenik: Abbe Award 2012 Biographical Sketch

Skip Palenik has had a lifelong fascination with the microscope that started when he received his first instrument at the age of eight. Since then he has devoted himself to increasing his knowledge of analytical microscopy and microchemistry and applying it to the solution of real world problems, especially those of forensic interest. He was fortunate in having worked closely with his mentor, Dr. Walter McCrone, for over thirty years and to have studied forensic microscopy with Dr. Max Frei-Sulzer of Zurich, a disciple of Dr. Edmond Locard of Lyon. Skip has been teaching analytical microscopy to forensic scientists for more than thirty years and has published numerous scientific articles and book chapters on the applications of chemical and forensic microscopy. His most recent contribution is a chapter on the use of heavy minerals in forensic science published by Elsevier. Skip and Peter De Forest taught a microscopy workshop at the New York Microscopical Society Centennial meeting in 1977. Skip has been teaching analytical microscopy to forensic scientists ever since. He has also played a significant role in numerous criminal investigations including the Atlanta Child Murders, the Air India Bombing, Jon Benet Ramsey case, Narita Airport bombing (Tokyo), Hillside Strangler (Los Angeles) cases, Oklahoma City bombing, Ivan the Terrible (Jerusalem), Assassination of Dr. Martin Luther King (reinvestigation by U.S. House Select Committee on Assassinations), the Unabomber, the disappearance of Helen Brach, The "Kiki" Camarena Murder Case and the Green River Serial Murders. He established Microtrace in 1992 to provide a resource for organizations and individuals in need of scientific services involving the analysis of microscopic trace evidence. His special research interests are the identification of single small particles, small amounts of complete unknowns and tracing dust and soil back to their origins. He is the 2009 recipient of the Paul L. Kirk Award, the highest award given by the criminalistics section of the American Academy of Forensic Sciences, the 2003 Distinguished Scientist Award from the Midwestern Association of Forensic Sciences and is listed in American Men and Women of Science. In 2010 he was awarded the Chamot Medal in chemical microscopy by the State Microscopical Society of Illinois.

Skip Palenik
President and Senior Research Microscopist
Microtrace
790 Fletcher Drive
Suite 106
Elgin, IL 60123 U.S.A.
(847) 742-9909
www.microtracescientific.com



N.Y.M.S. Items for Sale

N.Y.M.S Microscope Covers

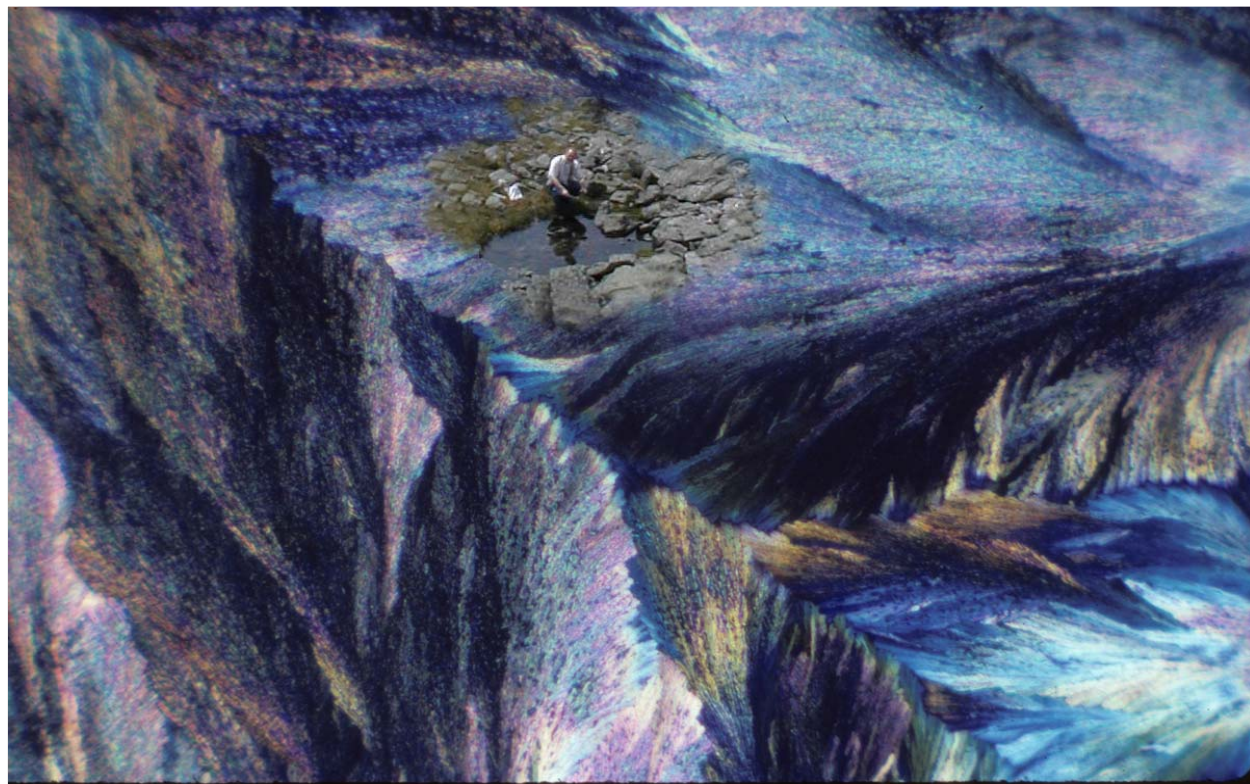
Number	Size	Member Price	List
MT-003	Small Microscope or Stereo	\$ 18.00	\$ 20.00
MT-004	Lab Microscope or large stereo	\$ 23.00	\$ 25.00
MT-005	Large Lab Scope	\$ 28.00	\$ 30.00
MT-009	Large Lab Scope with Camera	\$ 31.00	\$ 33.00
MT-010	Universal scope with camera	\$ 36.00	\$ 40.00
MT-012	X-large Scope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

N.Y.M.S. Microscopes

Dissecting Microscope	\$ 59.00	\$ 99.00
H.S.Student Microscope	\$169.00	\$199.00
H.S.Student Microscope (Fluorescent)	\$179.00	\$215.00
H.S.Student Microscope(L.E.D.)	\$199.00	\$240.00

Other Items

N.Y.M.S. Pens	\$ 5.00
N.Y.M.S. Glossary	\$ 20.00
N.Y.M.S. Paperweight	\$ 12.00
N.Y.M.S. Patch	\$ 5.00
N.Y.M.S. Lapel Pin	\$ 10.00
N.Y.M.S. Microscope Cleaning Kit	\$ 35.00



Collecting Pond-Life on Adipic Cliff Pond (P450730)

Composite image by Mel Pollinger