



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

Jan 2017

Editor: (201) 791-9826

Volume 11 (31) Number1

New York Microscopical Society: Members Meeting, January 22, 2017

2 PM: Dr Stanislas (Stan) Petrash
"Recent advances in X-ray Microscopy"

Dr Stan Petrash is Scientific Principal for Materials Science & Engineering, especially for Adhesives Research, at Henkel of America, the world market leader in adhesives, sealants and surface treatments.



Stan Petrash's instrumental specialties are normal light, electron, and atomic force microscopy, including morphological and elemental characterization of materials on micro- and nano-scales. Stan uses his extensive expertise in advanced analytical methods and collaborations with leading government and academic research institutions in US, Canada, Europe and Japan to facilitate the development of adhesive and surface technologies for consumer, industrial, electronic, transportation, food, and medical

Dr Robert (Bob) Vetrecin, Ethicon Research Fellow (ret.)
"Meet the American Microchemical Society" 1 PM

During our noon – 2 social and technical period, we'll welcome AMS President Bob Vetrecin's informal presentation. Together with several NYMS Board members, Bob is very active in the Organizing Committee / Governing Board of the NYMS-sponsored Eastern Analytical Symposium.



Free and open to the public. Doors open at noon. Light refreshments.

Pinnularia Nobilis (Diatom, prepared slide), 200x (P1801402) Image by Mel Pollinger, See page 3



New York Microscopical Society Board of Managers (Officers Term 2016-2017)

President, John Scott, nyconsnfdn@aol.com; (646)339-6566, Curator, Archivist. Manager 2015-18
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Manager, 2016-2019 Peter Diaczuk pedicoplanb@gmail.com;; (212)237-8896, Past President
For additional information contact the Editor: Mel Pollinger at (201) 791-9826, 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.



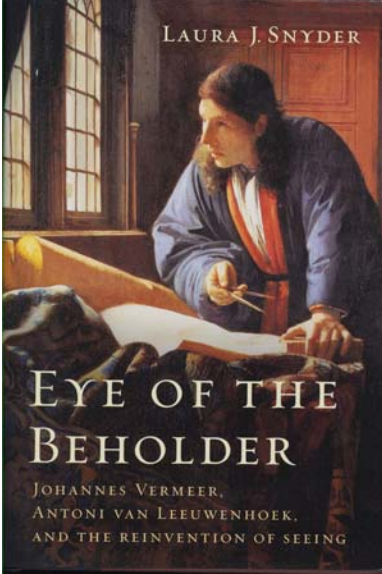
**The Mission of the New York
Microscopical Society** is the promotion of
theoretical and applied microscopy and the promotion
of education and interest in all phases of microscopy.

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 emailing:
pollingmel@optonline.net

Please remember to pay your dues

Buy and Read a Good Book on Microscopy.



New addition to
NYMS Library:

NYMS 7153

(see page 4 for
additional
information)



NYMS Booth at EAS November 2016

2016 University of New Haven
Graduate Student Photomicrography
Competition

Forensic Microscopy Course
Prof. Brooke W. Kammrath
See Supplement for winning images

Mystery Photo for Jan 2017



Answer on pg 4

Nov-Dec 2016 Banquet Speaker Nicholas Petraco,
Lecture Title: **The Factual Story of the Authentication
of the Lost 9/11 Flag.** (see email supplement
section)

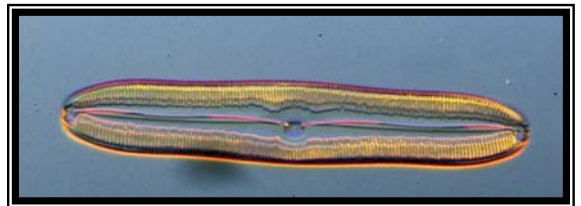


Nicholas Petraco Examining Dust from Flag

Presentation by Derek Yoost on 10-Oct-2016
(see email supplement section)

The Big World
of the
Very Small

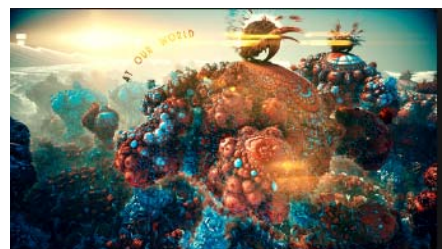
From page 1...



Pinnularia is a predominantly fresh-water alga, usually found in ponds and moist soil. They can also be found in springs, [estuaries](#), [sediments](#), and oceans. Members of this genus are most commonly found in 40 cm (1 1/4 ft) of water, at 5 °C (41 °F). -Wikipedia

Check out the fractal art on this link:

<https://goo.gl/images/dnc7YC>



Newsletter Errata: The correct title of the Oct. 30th 2016 presentation should have read as,
"The Big World of the Very Small" - Fossil Edition

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.

Coffee bean at 60x, taken by Jane Cohen
Answer for Mystery Photo from page 3:



Coral Fungus from Pine Swamp Road area, Hawk Mountain, Berk County, PA. Photo by Mel P.

The following was sent in by Jay Holmes

"When Science and Art Collide"

[http://cmog.us7.list-](http://cmog.us7.list-manage.com/track/click?u=37e97ca4783d75c4c341cf1f1&id=4b77e0e317&e=53c5ab23e3)

[manage.com/track/click?u=37e97ca4783d75c4c341cf1f1](http://cmog.us7.list-manage.com/track/click?u=37e97ca4783d75c4c341cf1f1&id=4b77e0e317&e=53c5ab23e3)
[&id=4b77e0e317&e=53c5ab23e3](http://cmog.us7.list-manage.com/track/click?u=37e97ca4783d75c4c341cf1f1&id=4b77e0e317&e=53c5ab23e3)

"Eye of the Beholder:" Johannes Vermeer, Antoni van Leeuwenhoek, and the Reinvention of Seeing. 1st Edition by Laura J. Snyder To order a copy from Amazon: <https://www.amazon.com/Eye-Beholder-Johannes-Leeuwenhoek-Reinvention/dp/0393352889>

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

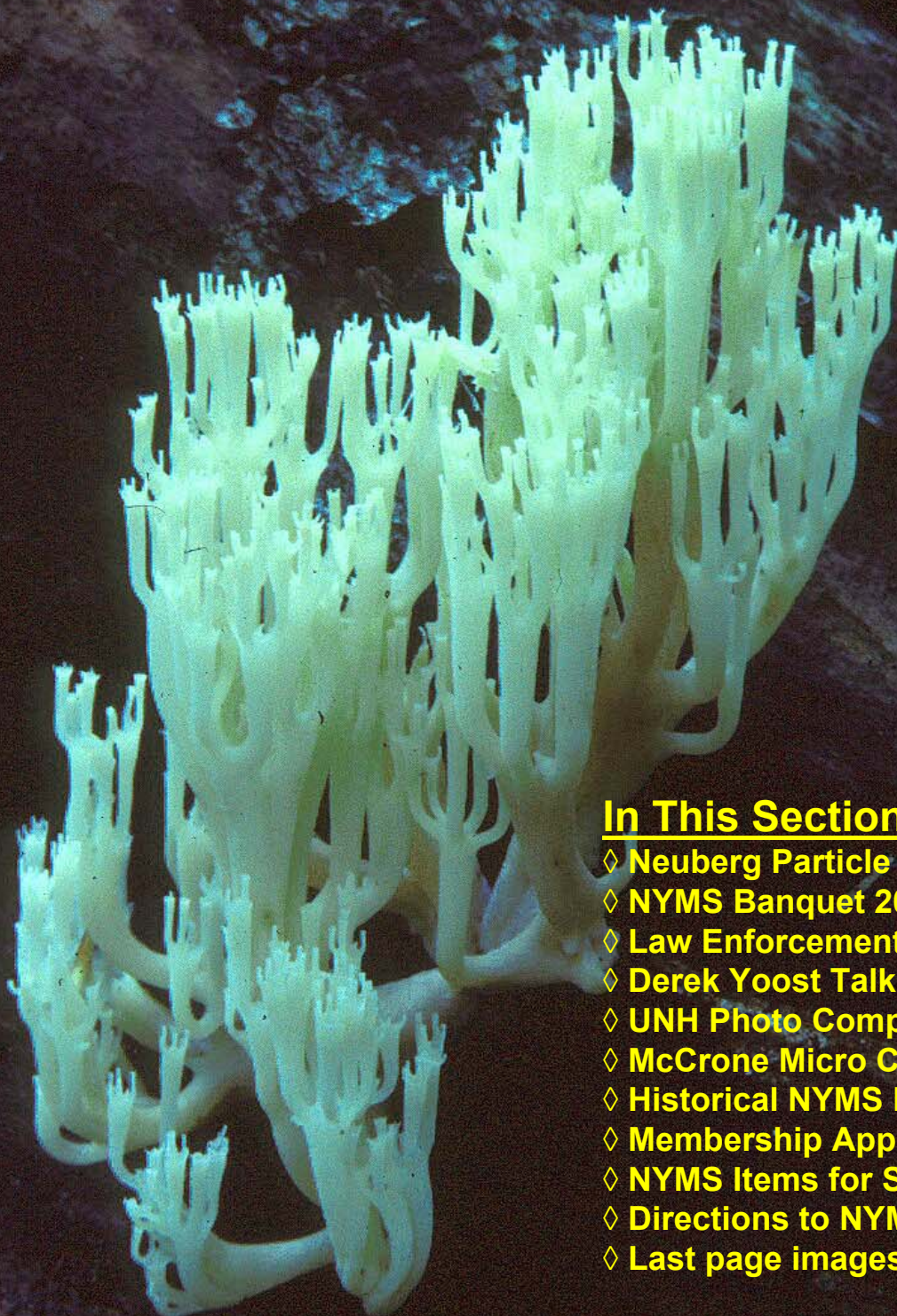
Got something to sell? Article to publish? Pictures for the newsletter? Looking to buy something? Want to use the library? Want to use a NYMS microscope? For any of the above, contact the Editor, Mel Pollinger.



Supporting Member

N.Y.M.S. Supplement Section

January 2017



In This Section:

- ◆ Neuberg Particle Paper
- ◆ NYMS Banquet 2016
- ◆ Law Enforcement Course 2016
- ◆ Derek Yoost Talk
- ◆ UNH Photo Competition
- ◆ McCrone Micro Courses 2017
- ◆ Historical NYMS Bulletins
- ◆ Membership Application
- ◆ NYMS Items for Sale
- ◆ Directions to NYMS
- ◆ Last page images

Distinguishing Particles by Refractive Index

By William B. Neuberg and Bin Chen
Shamrock Technologies

Identification of particles is routinely done by specialists in polarizing light microscopy. This science is otherwise known as optical crystallography.

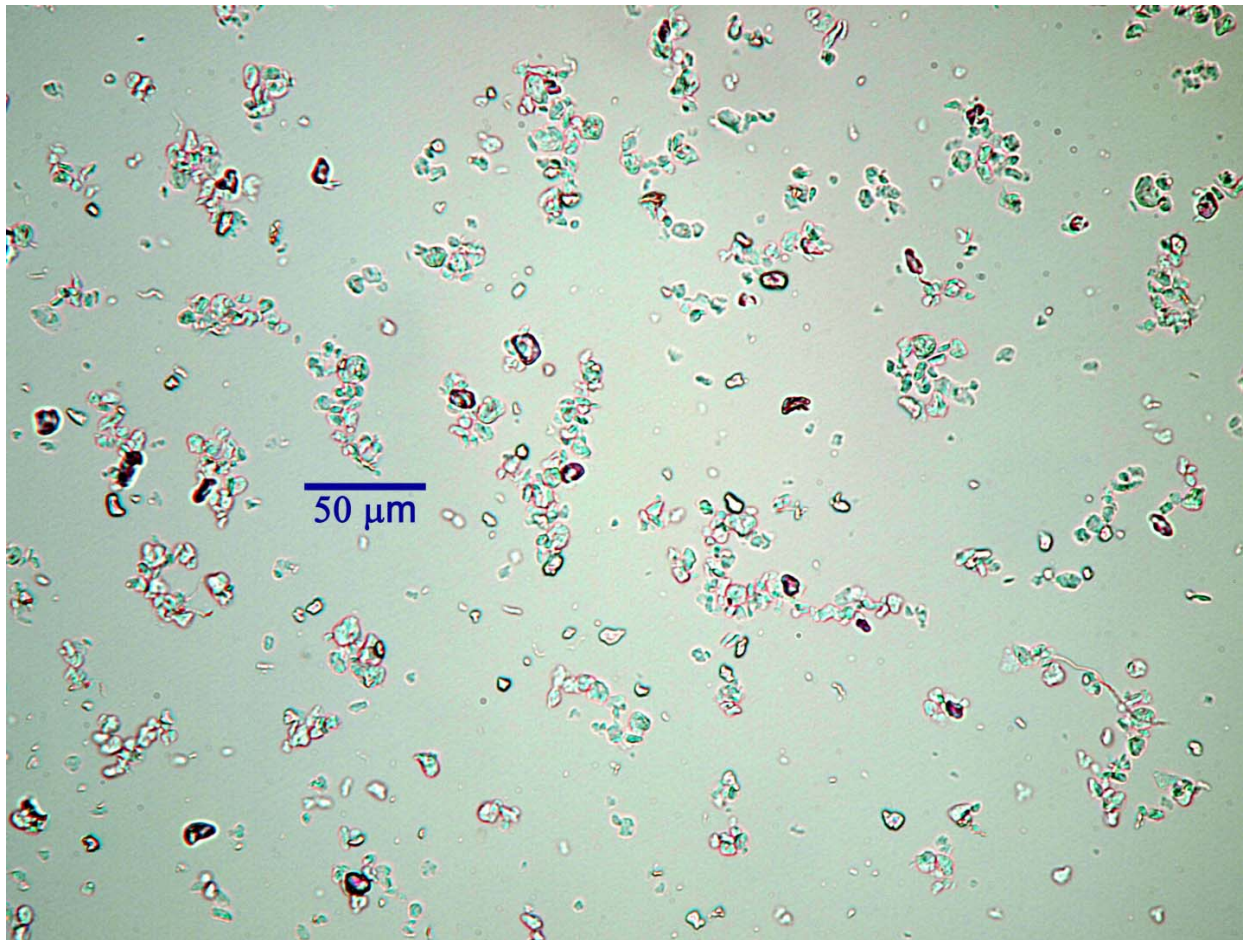
To distinguish one known particle from another known, we can take a simple approach that doesn't require polarized light, just a good microscope that can be purchased on eBay for under a thousand dollars, perhaps much under. This and some reference liquids of known refractive index allow you to determine the index of the particle.

The index of refraction of a material is defined by the speed of light in vacuum, c divided by the speed of light through the material, v . This results in an index of 1.333 for water. If you used v divided by c , it would show that light travels thru water at 75% the speed in a vacuum. There are published tables for the refractive index of many liquids. To find the refractive index of a solid, you need to make it disappear by immersing it in a liquid of known index. To do this with a microscope, you can buy refractive index liquids or get pretty close by using available liquids having a refractive index found on the internet.

Let's take the example of a mixture of wax and PTFE. A quick search shows the refractive index to be 1.35–1.38. The range is not because the material is that variable, but because it exists in a crystal form in which light is slowed differently in different directions. Only materials in the cubic crystal system have only one refractive index. Next, a determination of the index of a commonly used wax, using the index liquids from Cargile Labs, shows it to be in the range of 1.54. Going to a table on common liquids, we see that Cedarwood oil has an index of 1.515. This appears to be a little closer to wax than to PTFE, but in between. A visit to Amazon shows one oz. for \$6.75.

Prepare a microscope slide using a tiny spec of wax and even less of PTFE wet with a drop of Cedar Oil. Slide a cover slip around to disperse the particles and take a look. The particles should be well separated. If they are not, add more oil. Now, set up your microscope condenser for Koehler illumination which is nicely described on the internet. The aperture diaphragm in the condenser is used to control resolution or contrast. Close the aperture to obtain maximum contrast. This produces a halo around a particle when the microscope is focused down

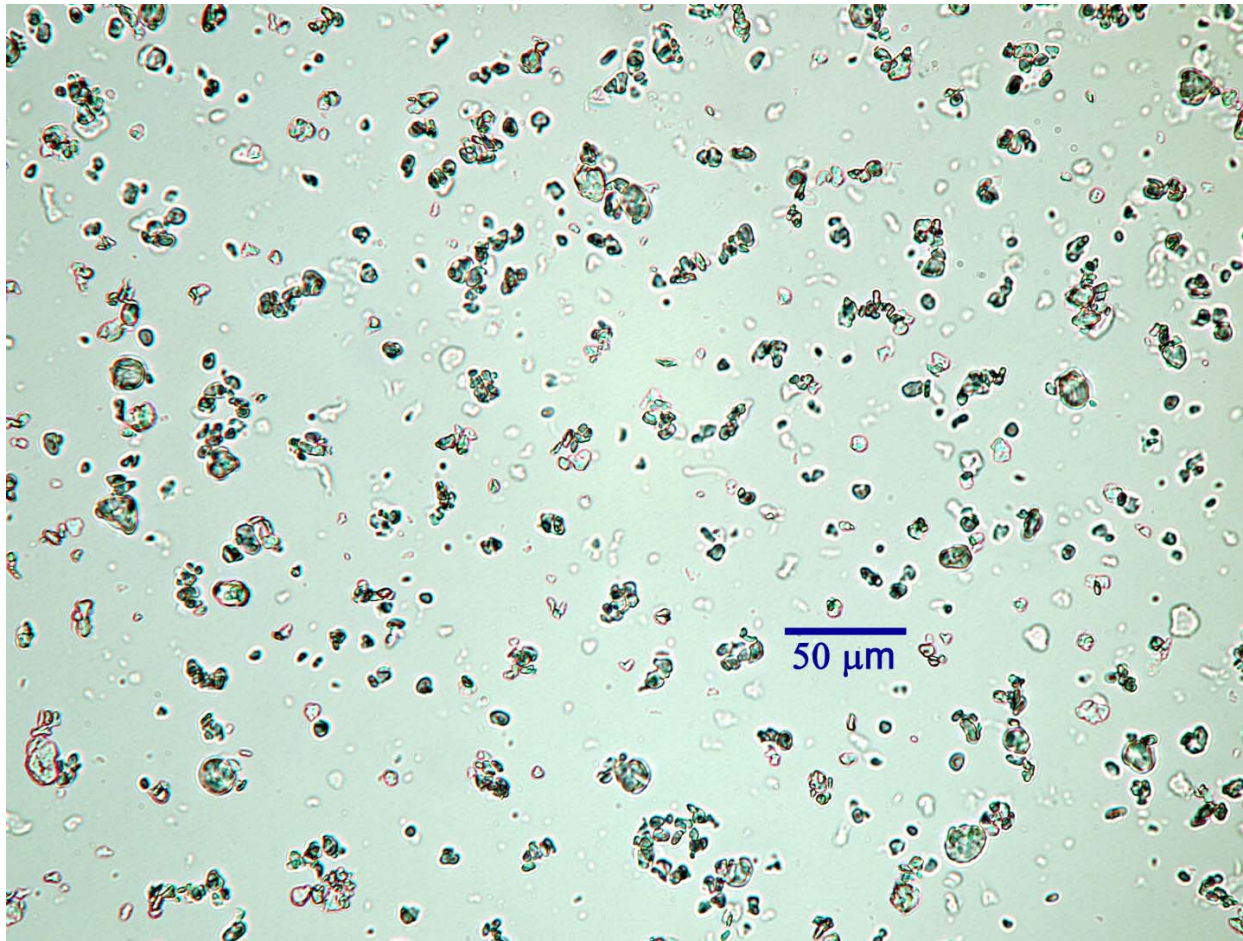
toward the substance of lower index (or up toward that of higher index). This halo is known as the Becke line and more details are also on the internet.



10% PTFE, 90% Wax in Cedar Oil - index 1.515.

The PTFE particles appear dark because their refractive index is not close to that of the liquid.

Conversely, the same combination of wax and PTFE mounted in ethylene glycol monomethyl ether shows the PTFE particles almost disappearing because the index of the particles is close to that of the liquid.



10% PTFE, 90% Wax in 1.40 index liquid.

A microscope can also be calibrated to determine particle size. In fact, this is the reference standard for the calibration of other size measuring instruments. McCrone Research Institute provides excellent courses in all phases of microscopy.

Some refractive index liquids:

- 1.373 Ethyl butyrate
- 1.39 Hexane, Kerosene
- 1.40 Ethylene glycol monomethyl ether
- 1.42 Ethylene glycol monobutyl ether
- 1.502 Benzene
- 1.515 Cedarwood oil, Anisol
- 1.53 Monochlorobenzene, Clove oil

===== Refractive index and polarized light =====

Polarized light microscopy makes use of the double refractive properties of crystalline materials except for a few in the cubic crystal system. Look at your cell phone and imagine it to be transparent, but having three refractive indices corresponding to the dimensions you see. You now can recognize that light will travel faster thru the thin dimension than the length or width.

Colors are produced by the difference in speed of the fast and slow rays of light. This is known as birefringence, signifying double refraction and produces interference colors similar to what you see from an oil slick on water – not the colors of the rainbow. An interference color chart called the Michel-Levy Birefringence Chart can be found online. This allows you to determine the thickness of a particle if you know the birefringence, or the other way around.

The wax and PTFE particles in the above photos appear white when viewed with crossed polars, but colors can be brought out by adding a wave plate to the light path. Much more information is at hand online. Although the speed of light in a vacuum is constant, an observer on Earth may be moving toward or away from its source. Einstein came up with a theory of relativity to address this.

(Reprinted here by permission of the author)



New York Microscopical Society Holiday Banquet at the Landmark Tavern in N.Y.C., November 11, 2016

**Banquet Speaker: Asst. Professor
Nicholas Petraco, MS, D-ABC John Jay
College of Criminal Justice.**

**Lecture Title: "The Factual Story of the
Authentication of the Lost 9/11 Flag."**



P1/3







P3/3



New York Microscopical Society 2nd Annual Law Enforcement Lecture Series

Modern Illumination & Imaging Techniques for Firearm & Toolmark Comparison Microscopy

The New York Microscopical Society is pleased to announce it has held its 2nd Annual Law Enforcement Lecture Series. The purpose of this lecture series is to explore various forensic science related topics and “real world” case work and find their nexus to the examination of microscopic evidence. During the summer of 2016 through the efforts of our NYMS Education Committee, we were fortunate to have as guest instructors Mr. Alan Paris, Director of Industrial Microscopy and Mr. Mario J. Gislao, Eastern Regional Imaging Manager both with Leica Microsystems for a workshop titled, *Modern Illumination & Imaging Techniques for Firearm & Toolmark Comparison Microscopy*. The workshop was designed to enhance the attendee’s knowledge and application of contrasting illumination and digital imaging techniques for comparison microscopy. The participants in the workshop received instruction and hands on application of LED based illumination systems in a modern comparison microscope system. Those in attendance had the opportunity to operate a Leica Microsystems FSC comparison microscope and understand the importance and application of magnification encoding, tele-centric optics, and X-Y-Z automation and synchronization. Those in attendance also utilized imaging applications for measurement, annotation, stitching and extended depth of focus imaging. This practical training was made possible thanks to Mr. Alan Paris with Leica Microsystems who was generous enough to ship a new FSC comparison microscope to the society for the twenty-one attendees to utilize and enjoy for the duration of the workshop. A special thank you is expressed from the NYMS Board of Managers to Mr. Alan Paris and all those at Leica Microsystems for making this training possible.

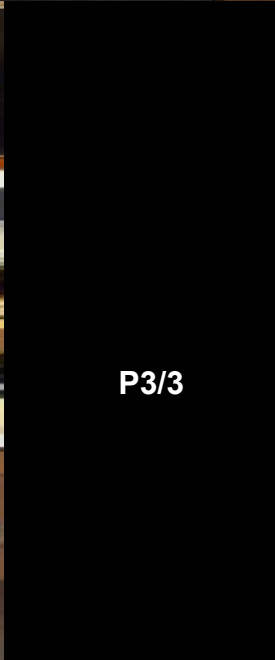
.....(Text & Images provided by Andrew Winter)





P2/3





P3/3



The Big World

of the

Very Small

(The Fossil Edition)

Presented by Derek Yoost at the
New York Microscopical Society
(NYMS) in Clifton, N.J.
on 30-Oct-2016

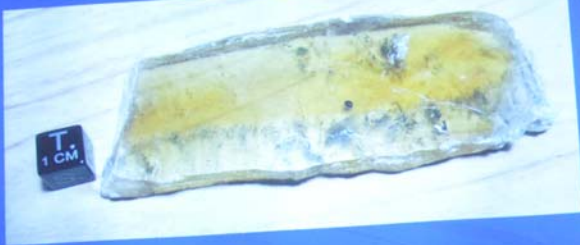




Dinosaur Bone Section permineralized with Agate
Jurassic – 150 Million years old
Morrison Formation
Henry Mountains, Utah



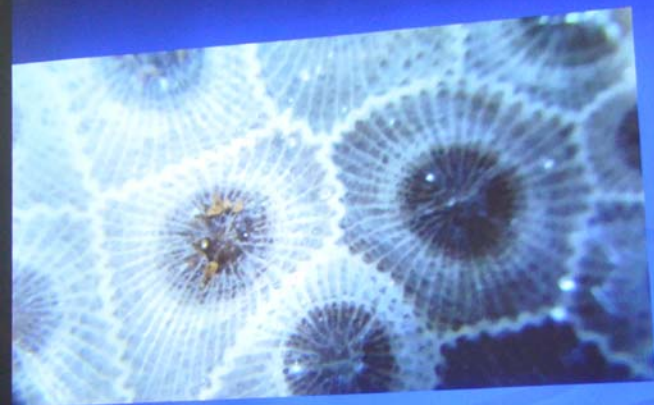
Petrified Pinecone - *Araucaria mirabilis*
Jurassic – 180 Million years old
Patagonia, Argentina



Plant Seed in Selenite
Pleistocene – 10,000 Years old
Texas



Sand Dollar
Eocene – 50 Million years old



Field of View: 2 cm



Trilobite - *Phacops rana*



Branchiosaurus sp. Amphibian
Lower Permian - 295 Million years old
Pfalz, Germany

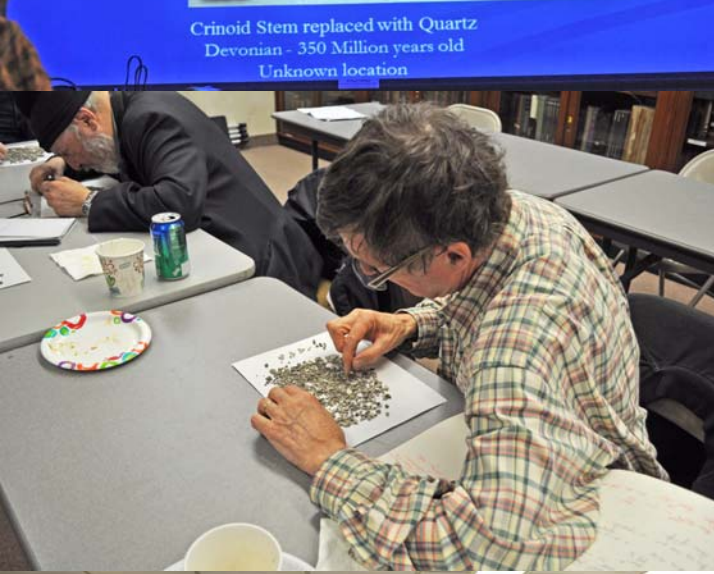




Crinoid Stem replaced with Quartz
Devonian - 350 Million years old
Unknown location



Typical fossils found
Yorktown Formation
Miocene - 15 Million Years old





Learn about Microscopes and the Microscopic World: Join us at the New York Microscopical Society Learning Center in Clifton, N.J.

2016
UNH Graduate
Student
Photomicrography
Competition

Forensic Microscopy Course

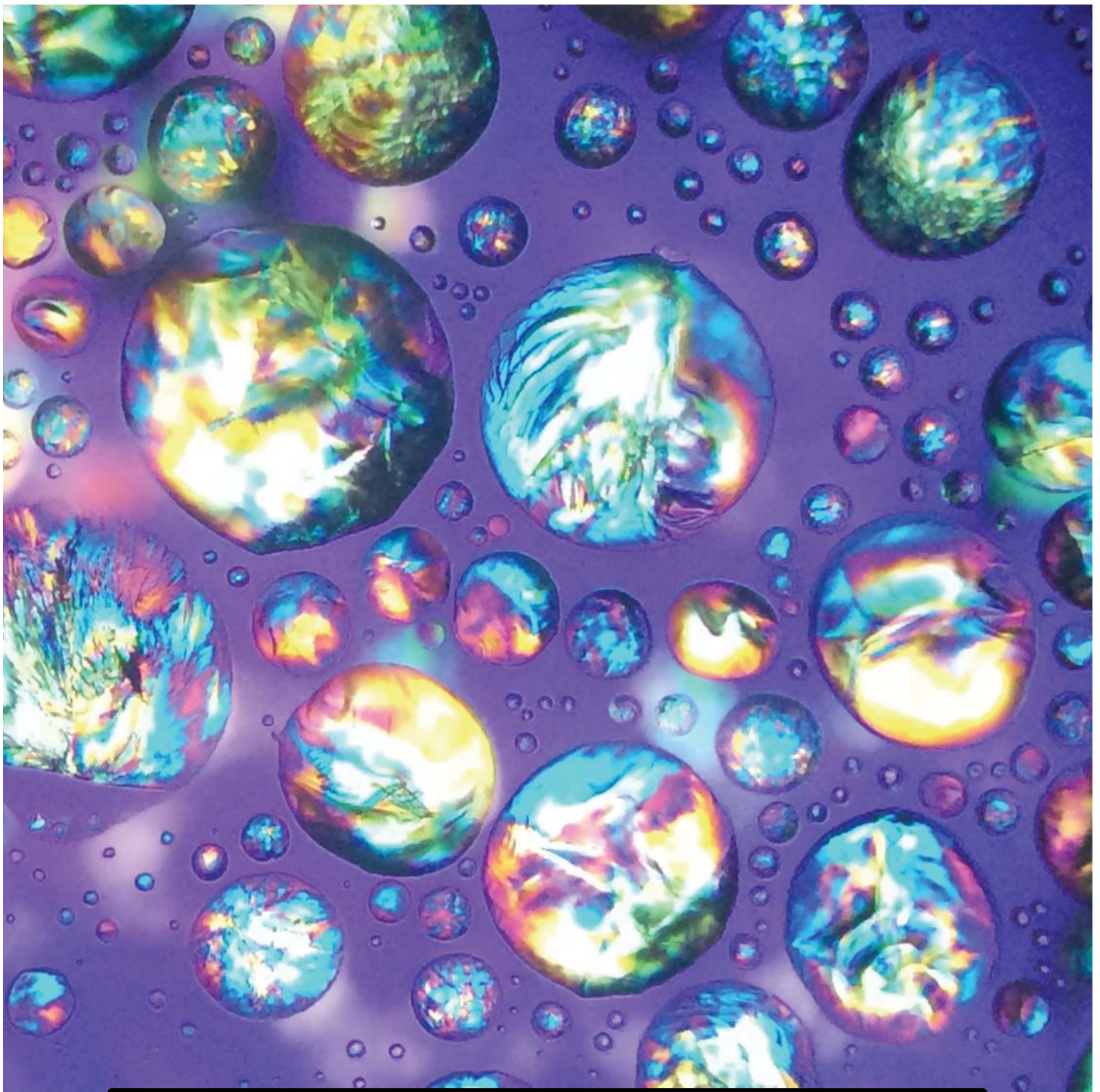
Prof. Brooke W. Kammrath



| *University of New Haven*

HENRY C. LEE COLLEGE OF
CRIMINAL JUSTICE AND FORENSIC SCIENCES

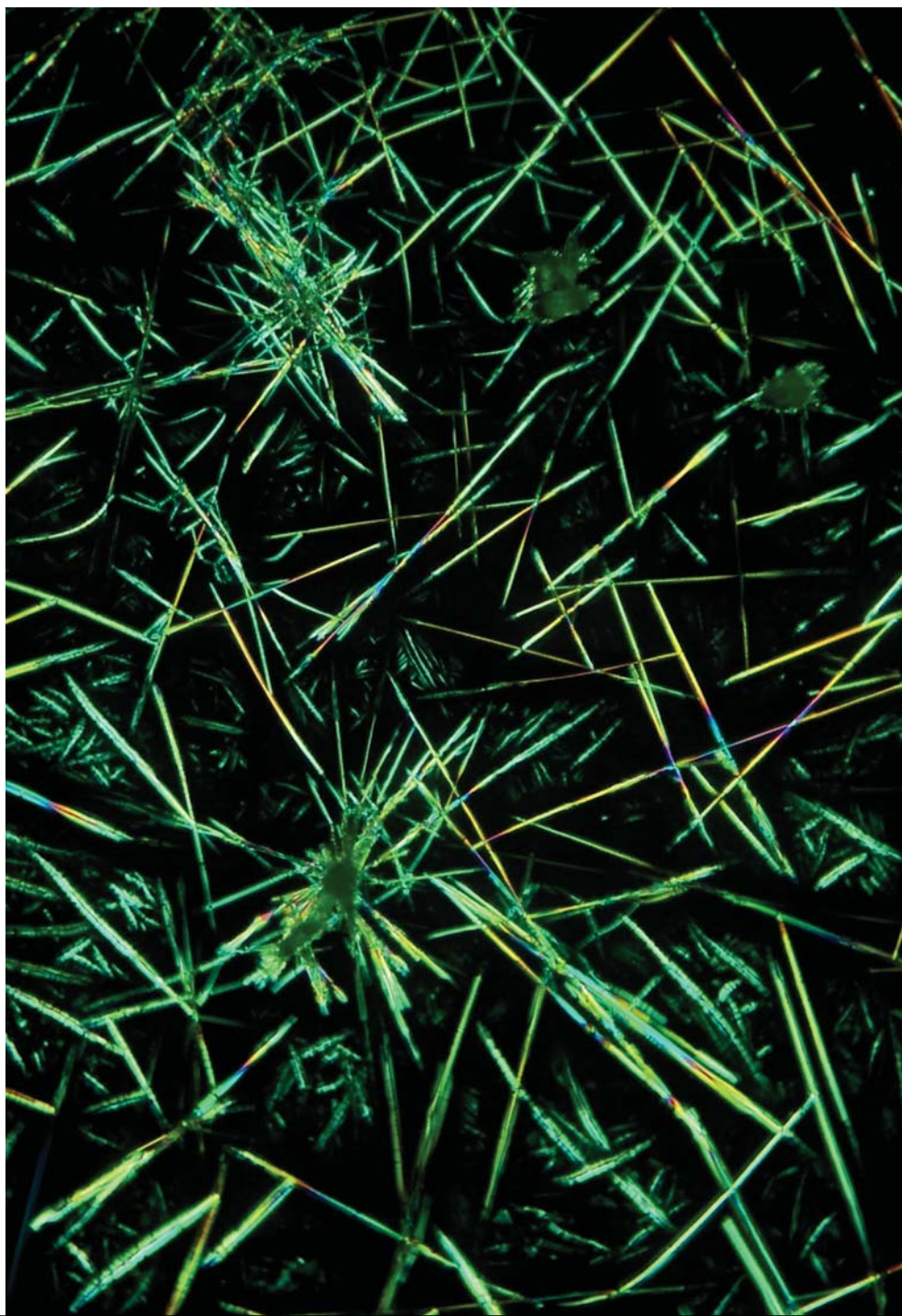
Department of Forensic Science



The Non-Essential Essential Amino Acid By Robert Whiting

Recrystallized I-Carnipure (400X Magnification)

*Technique: Polarized Light Microscopy -
Crossed Polars with a Full Wave Plate Compensator*

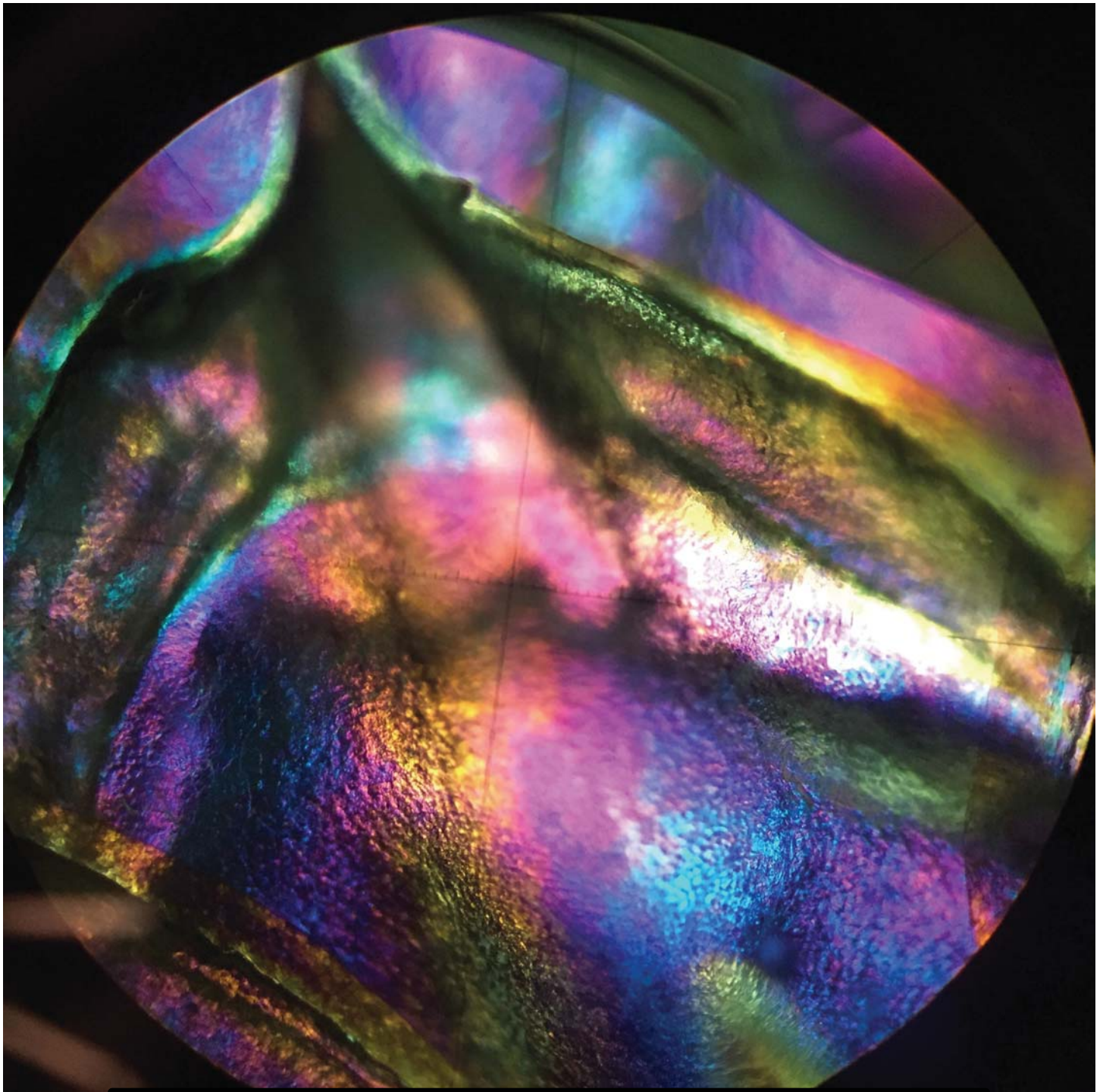


Energy Spike

By Matthew Ciano

Caffeine Recrystallized From Acetone
(400X Magnification)

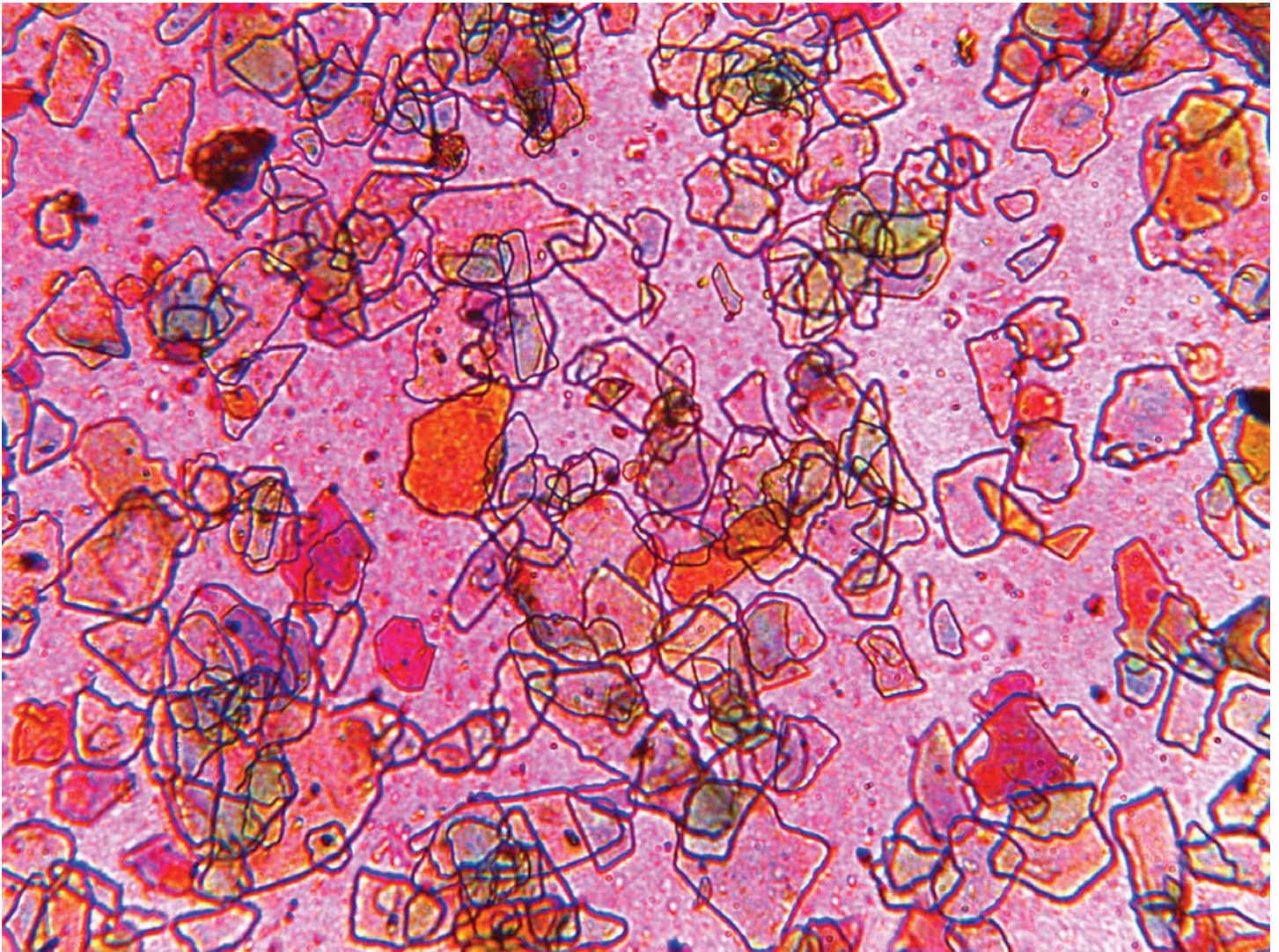
*Technique: Polarized Light Microscopy -
Crossed Polars*



**Bearded Dragon
(Pogona Vitticeps)
By Alexis Parr**

Bearded Dragon Scale (100X Magnification)

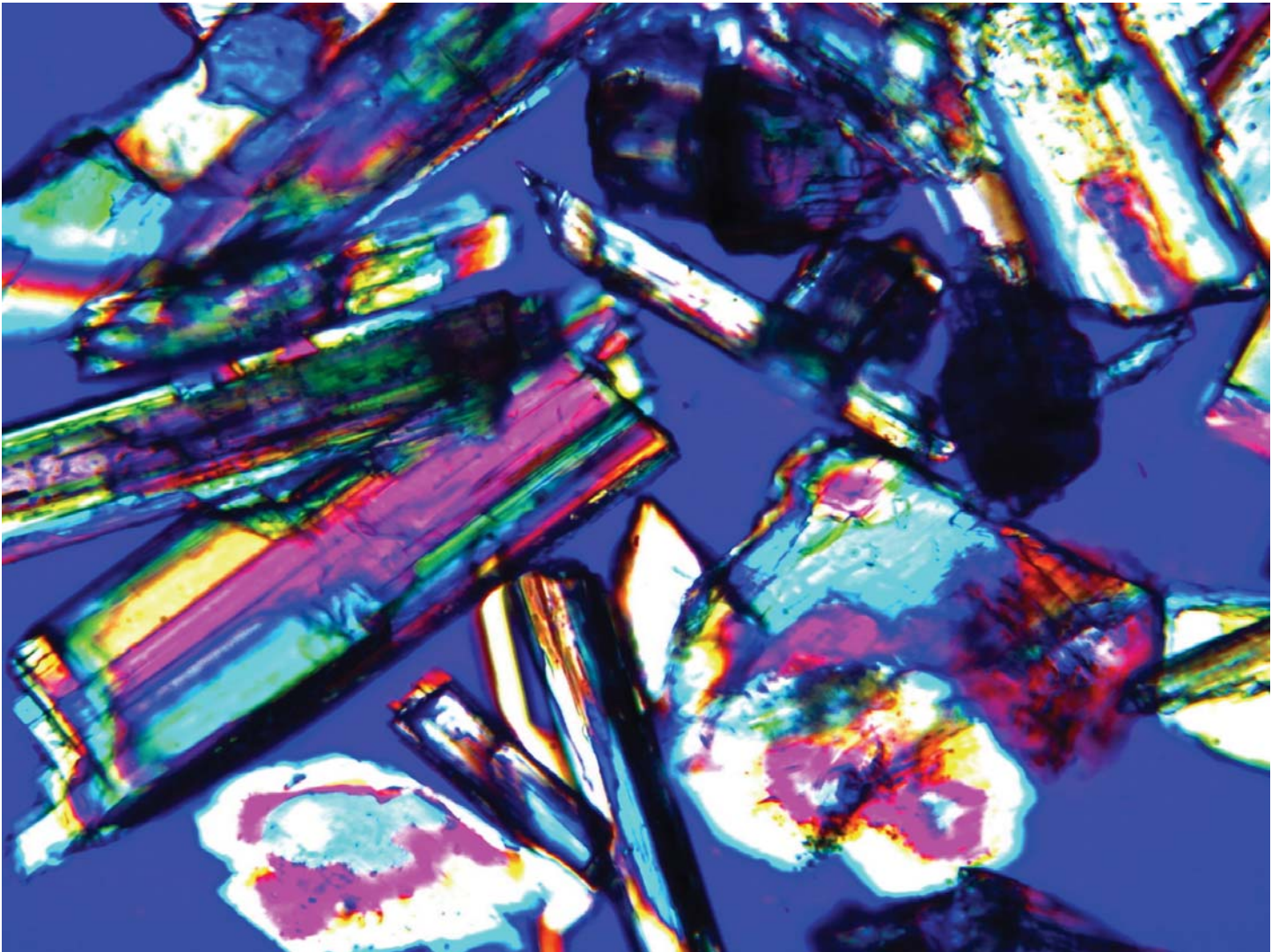
*Technique: Polarized Light Microscopy -
Crossed Polars with a Full Wave Plate Compensator*



Legally Blonde By Audri Wagner

Nail Polish (400X Magnification)

*Technique: Polarized Light Microscopy -
Plane Polarized Light*

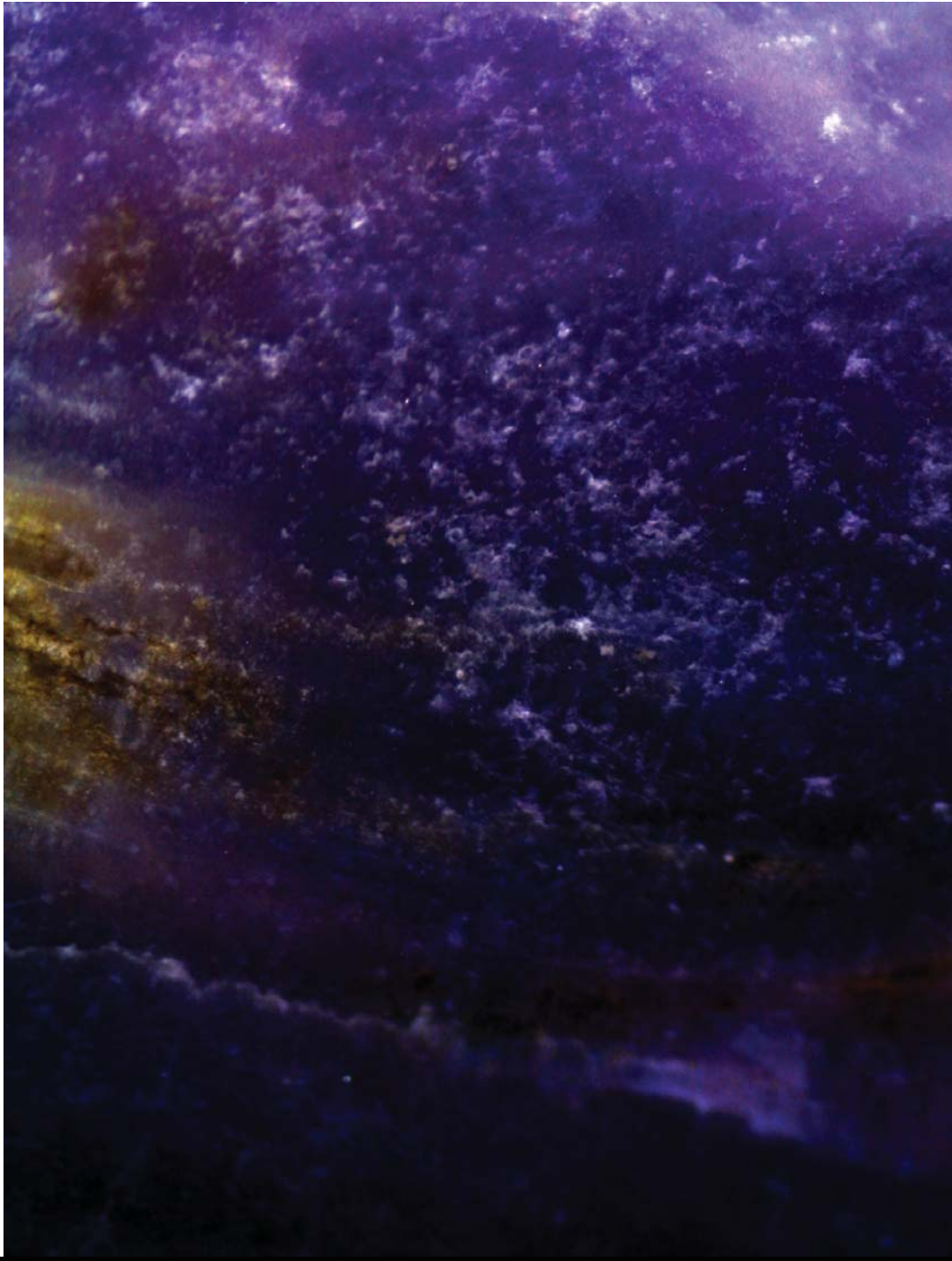


Hornblende Butterfly

By Beth Markello

The Mineral Hornblende (100X Magnification)

*Technique: Polarized Light Microscopy -
Crossed Polars with a Full Wave Plate Compensator*



GALAX-SEA

By Danielle Quintin

A Mussel Shell Collected From Minor Road Beach in
East Haven, CT (20X Magnification)

Technique: Stereomicroscopy - Episcopic Illumination



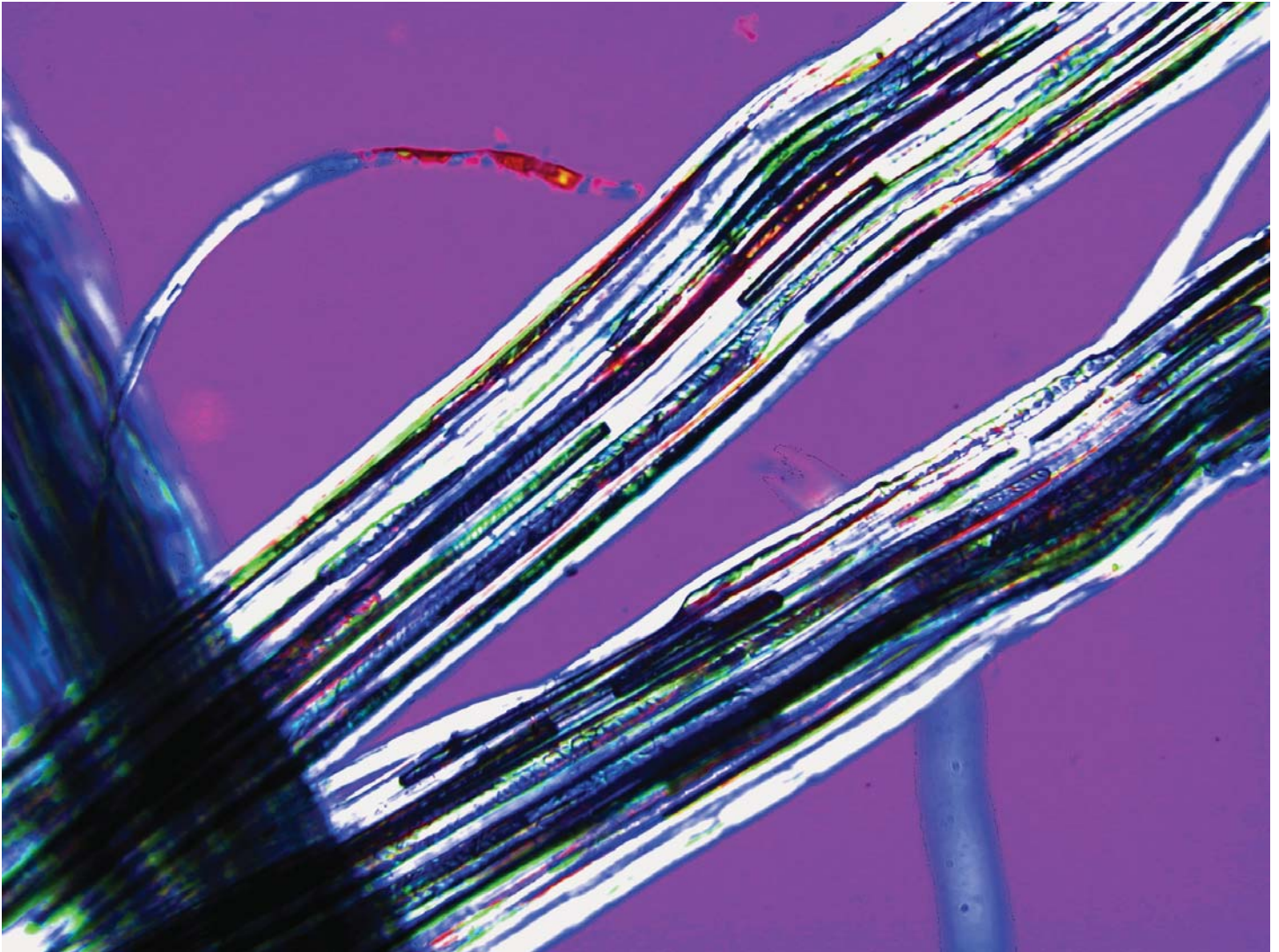
Caffeine Crystals

By Gage Garcia

Caffeine Recrystallized From Ethanol
(200X Magnification)

Superimposed To A Picture Of A Cup Of Coffee

*Technique: Polarized Light Microscopy -
Crossed Polars with a Full Wave Plate Compensator*

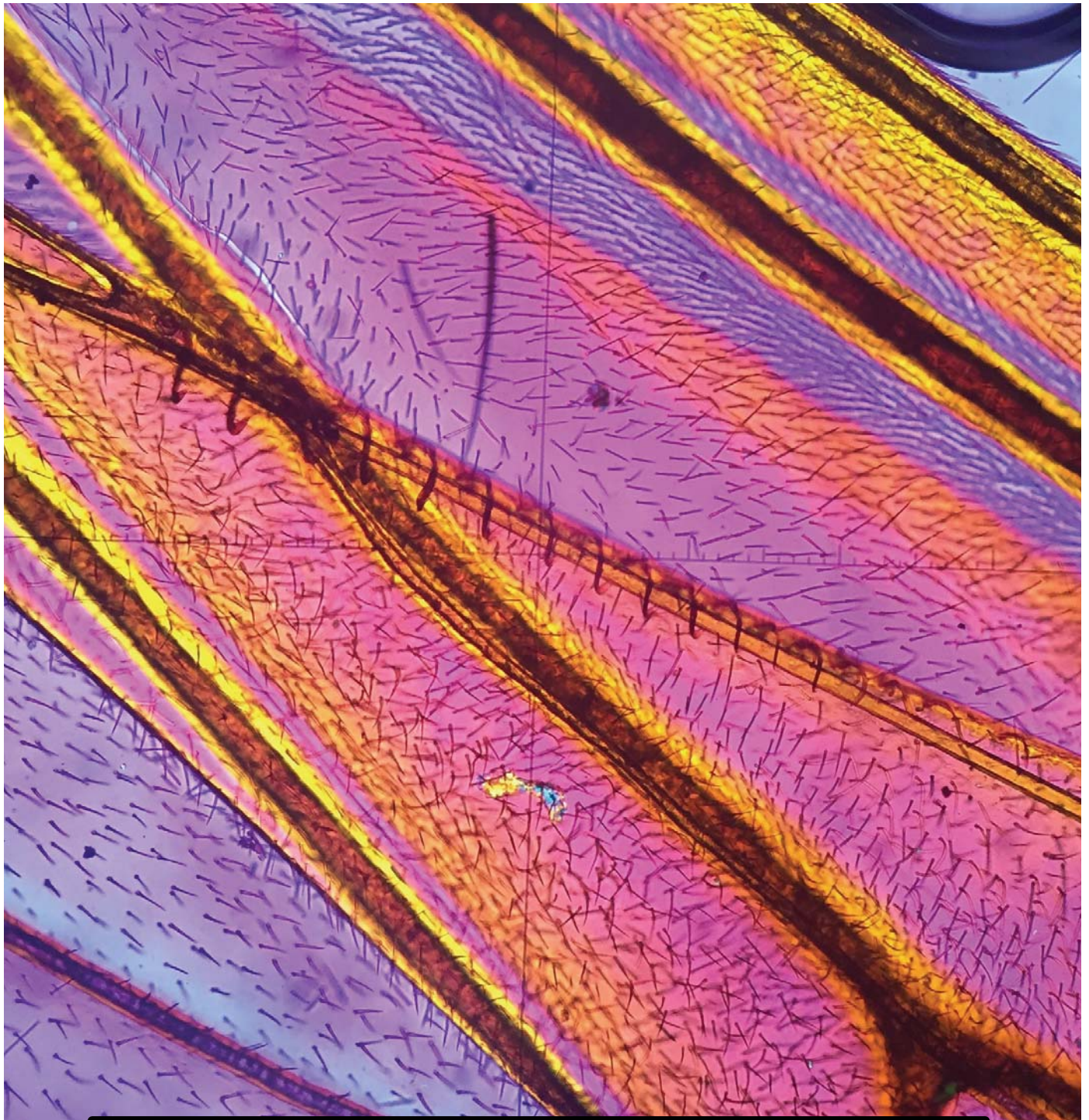


Musa Textilis

By Karolyn Clever

Abaca Fibers (100X Magnification)

*Technique: Polarized Light Microscopy -
Crossed Polars with a Full Wave Plate Compensator*

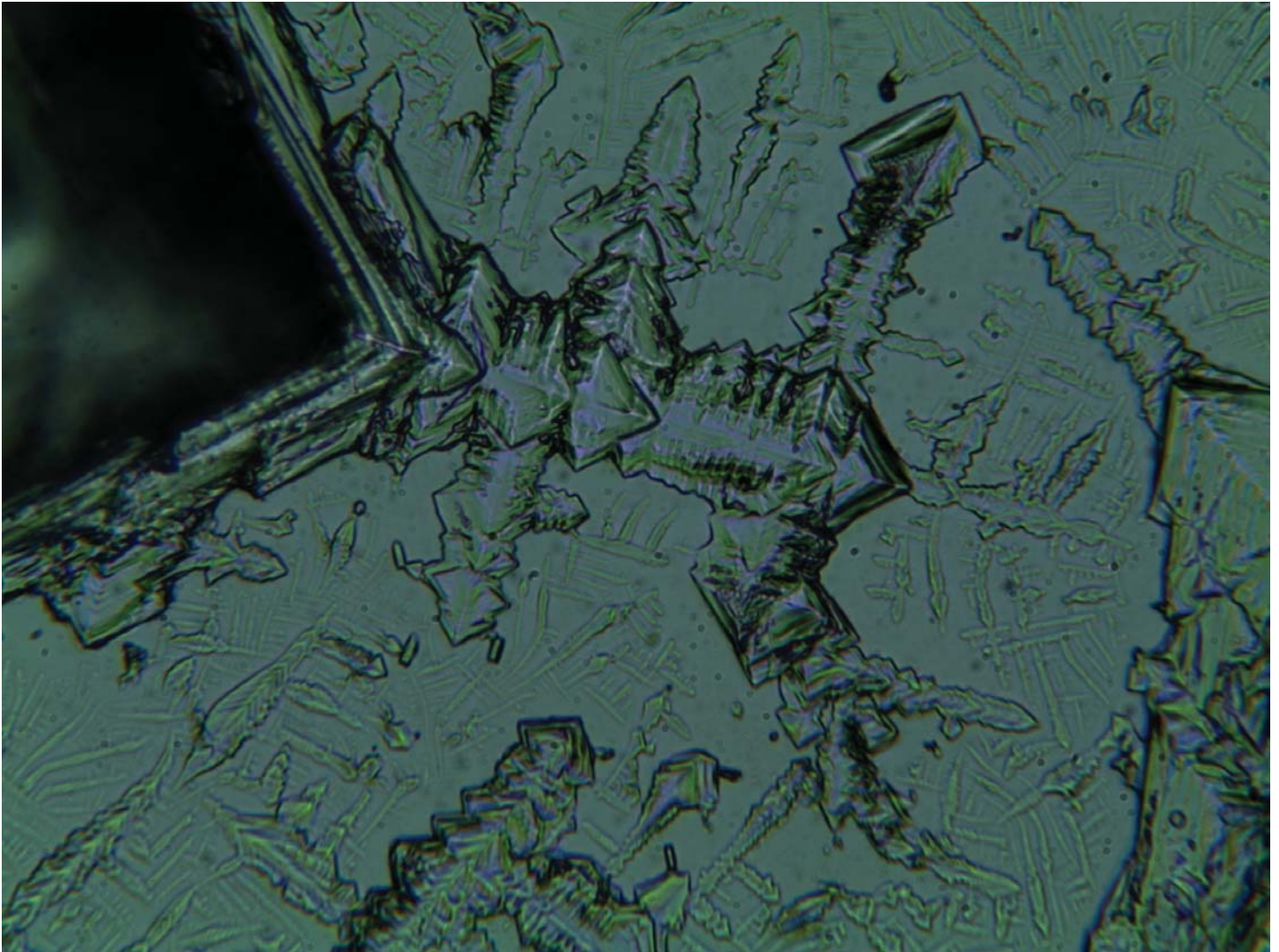


Sunset

By Justine Kawa

Wasp Wing (200X Magnification)

*Technique: Polarized Light Microscopy -
Crossed Polars with a Full Wave Plate Compensator*



A Salt (But No Battery) **By Sarah Raposo**

Recrystallized Himalayan Sea Salt
(100X Magnification)

Technique: Brightfield Microscopy

Upcoming Microscopy Courses at McCrone Research Institute

Asbestos, PLM, FT-IR, Fluorescence Microscopy, and more

Select a title to read the course description and register online:

Microscopical Identification of Asbestos

-- January 16-20

Asbestos Fiber Counting [NIOSH 582]

-- January 23-27

Advanced Asbestos Identification

-- January 30-February 3

Applied Polarized Light Microscopy (PLM)/

Forensic Microscopy -- February 6-10

Modern Pollen Identification -- March 7-9

Microscope Cleaning, Maintenance, and

Adjustment -- March 8-9

Microscopical Identification of Asbestos -- March 13-17

Microchemical Methods -- March 20-24

Scanning Electron Microscopy and X-ray Microanalysis -- March 27-31

Fluorescence Microscopy -- May 16-18

Practical Infrared Microspectroscopy -- FT-IR -- June 26-30

McCrone Microscopy Courses by Category

Asbestos, Fungal Spore, Pollen, Dust, and Other Indoor Air Quality Courses

PLM, Forensic Microscopy, and Advanced Microscopy Courses

SEM, FT-IR, Fluorescence, Raman, Sample Prep, and Other Micromethods Courses

Specialty Microscopy and Other Courses

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

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.

We look forward to seeing you in Chicago!

McCrone Research Institute: 2820 S. Michigan Avenue, Chicago IL 60616-3230

Phone: 312-842-7100

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McCrone Research Institute, 2820 S. Michigan Avenue, Chicago, IL 60616

Sent by courses@mcricri.org in collaboration with

Main Identity

From: "McCrone Research Institute" <intermicro@mcri.org>
To: <pollingmel@optonline.net>
Sent: Tuesday, January 10, 2017 10:03 AM
Subject: [SPAM]Call for Papers -- Inter/Micro 2017 at McCrone Research Institute

Call for Papers

Inter/Micro 2017

**An international microscopy conference.
June 12-16, 2017 -- McCrone Research Institute, Chicago**

**Abstract submission deadline:
March 17, 2017**

McCrone Research Institute cordially invites you to give a presentation of your microscopy research at the 69th annual Inter/Micro conference in Chicago.

Join professional and amateur microscopists from around the world as they present new research on techniques and instrumentation, environmental and industrial microscopy, and chemical and forensic microscopy.



**Research presentations will be held three days on June 12-14.
A two-day workshop will follow on June 15-16.**

View abstract submission guidelines at www.mcri.org.

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McCrone Research Institute

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2820 South Michigan Avenue, Chicago, IL 60616-3230

Phone: 312-842-7100 Fax: 312-842-1078

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 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 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



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

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Phone Fax E-Mail

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



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New York Microscopical Society Items For Sale

29-Feb-2016

N.Y.M.S. Microscope Covers

Item #	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 23"H	\$36.00	\$40.00
MT-012	X-large Scope	\$45.00	\$50.00

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

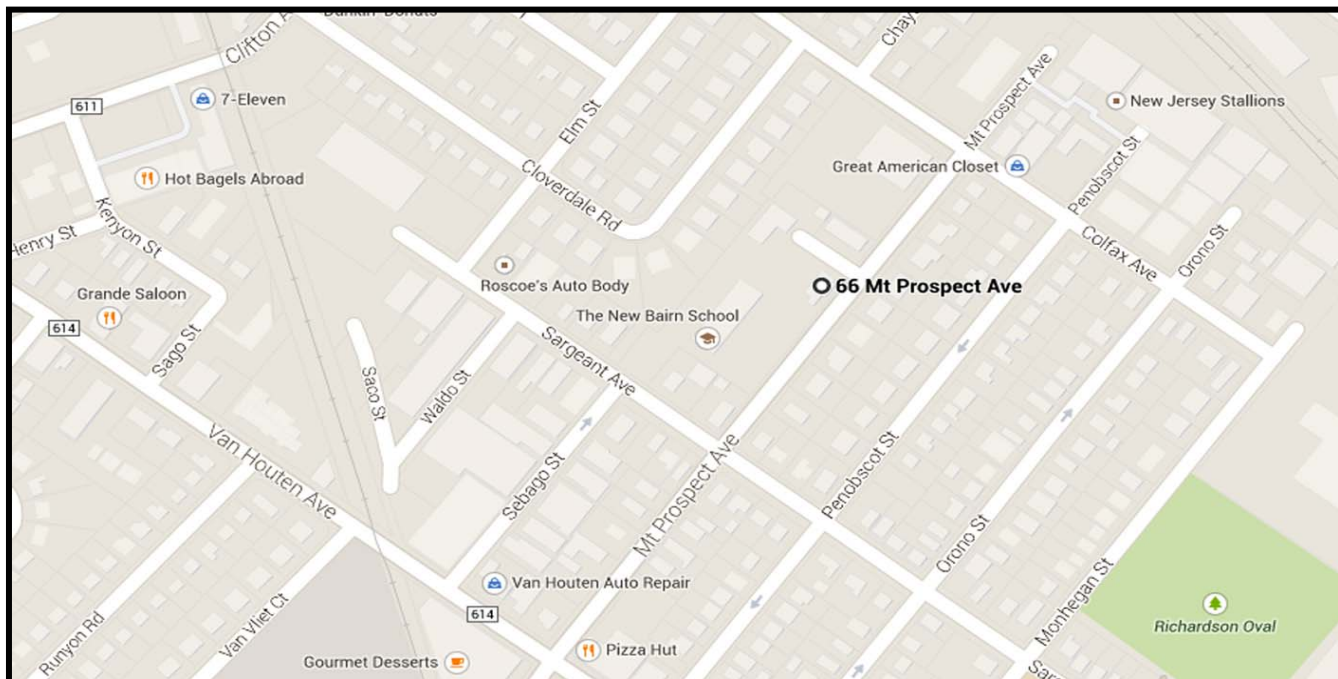
Model 131-FLU: Fluorescent



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 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 Prospect Ave.. Building 66F is half block on right.

Public transportation from NY:

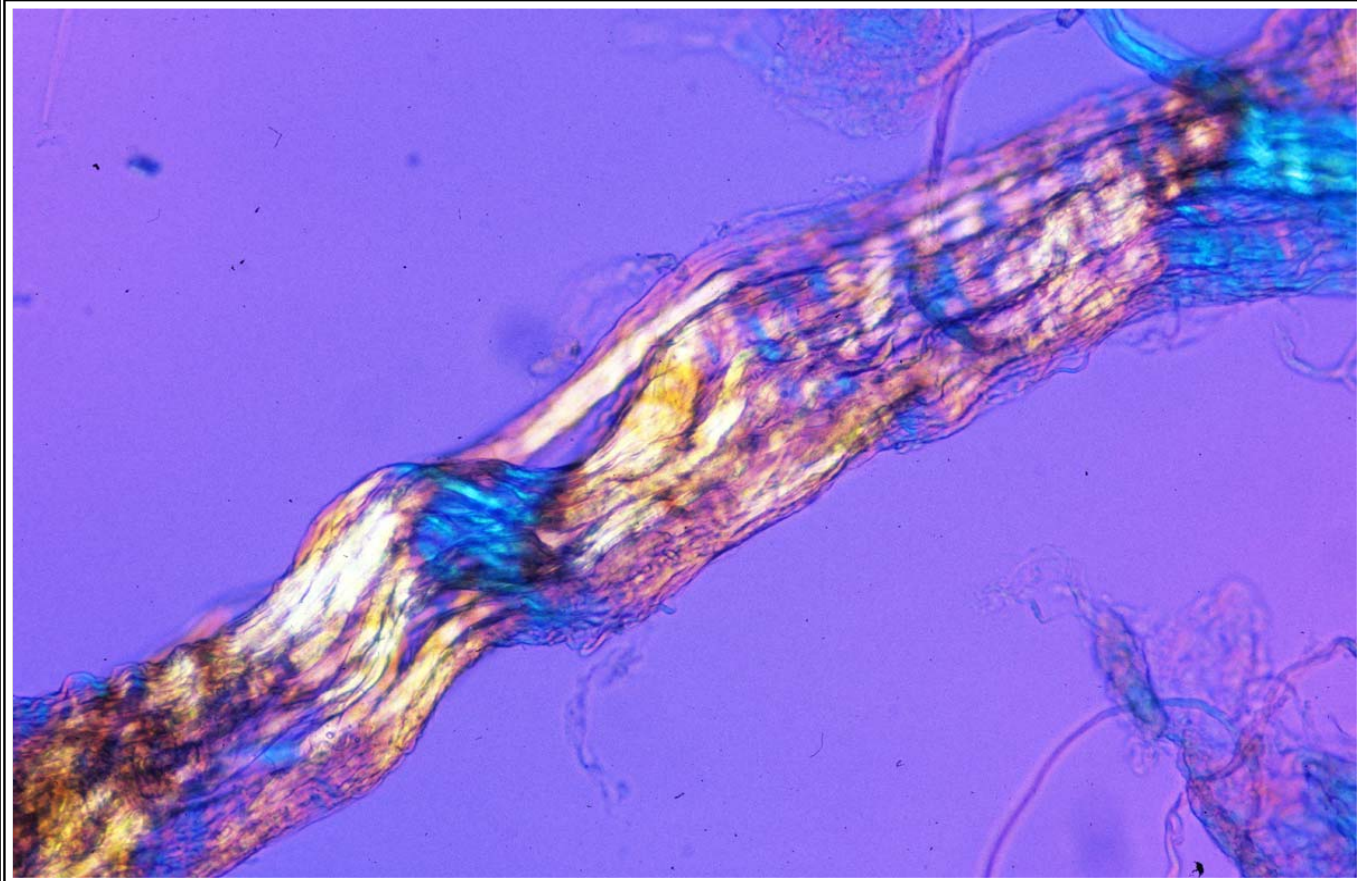
Take NJ Transit train from Penn Station to Secaucus Transfer Station. Change trains to Bergen Line to Clifton (call NJ Transit for schedules). From Clifton Station cross under tracks to first street and go left one block to Mount Prospect Street, turn right and Building 66F is one half block on Right.

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



Collagen (bovine), 100x (P1761403)a6x4x200: Polarized light photomicrograph by Mel Pollinger



Cyanocobalamin (Vit. B12), 100x (P1783117)a6x4x200: Polarized light photomicrograph by Mel Pollinger