Newsletter
Of the
New York Microscopical Society

30 North Mountain Avenue, Montclair, New Jersey 07042-1841

April 2008 | N.Y.M.S. (973) 744-0043 | Volume 2 Number 4

6th Annual
Microscope Day at John Jay
Presented by New York Microscopical Society and John Jay College

Wednesday, April 16, 2008
Room 616B, BMW Building,
555 W. 57th St
New York, NY

10:00 **Opening Remarks** – Peter Diaczuk

10:15 **Martin Eber** – How to Look Through a Microscope and What Do You See?

11:00 **Dale Purcell** – Case Studies Involving Microscopy

11:45 **Gerard Petillo** – Microscopy in a forensic tool mark case

12:30 **Rebecca Smith** – Basic Sample Preparation Techniques for Light Microscopy

1:15 **Dr. John Reffner** / **Pauline Leary** – Recent Advances and Applications in Infrared Microscopy/Spectrophotometry

2:00 **Dr. Betty Faber** – More Adventures with Insects

3:00 **Vinesh Rana** – Surface-Enhanced Raman Scattering (SERS) Spectroscopy Techniques for Trace Identification of Drugs of Abuse

3:45 **Closing Remarks –** Peter Diaczuk

(***Additional important information on page four***)

Microscopy Research Area at NYMS

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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.

Dues and Addresses

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

Junior (less than 18 years old) $10
Annual $30 (students >=18 years old $20)
Supporting $60
Life $300 (payable within the year)
Corporate $175 (includes one advertisement in NYMS News)

To avoid missing notices:
Notify Mary if you have changed your address, phone or email.

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.

Buy and Read a Good Book on Microscopy.

Hunting Tardigrades

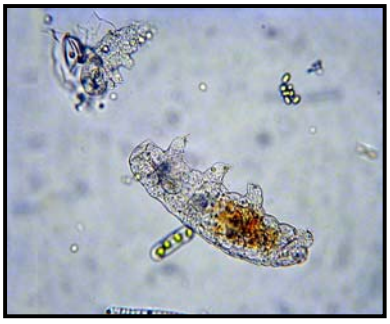
By Mel Pollinger

I love to collect and watch water bears (Tardigrades) crawling around the moss and mineral grains in a micro-tank under a stereo microscope. Their movements, using tiny sharp, curved claws, are reminiscent of a tree-sloth lumbering in slow-motion across a branch, perhaps in search of prey.

My micro-tank habitat is simply a plastic micromount box-lid painted black on its outside top surface. Side lighting projecting into the tank illuminates these tiny crawlers in 3-D, as it does any other animals in the tank.

Rain-wetted hanging moss on concrete structures afford me many specimens of tardigrades, rotifers and nematodes, not to mention other protists, mites, etc. What I find peculiar is the usual absence of tardigrades in my micro-tank when nematodes and rotifers are mutually present. I have noticed this absence many times under similar conditions. When one *or* the other, nematodes or rotifers, is not present, tardigrades are usually found.

The moss, which in this case, happened to be abundantly growing across the street from my daughter's house in Morristown, New Jersey, was sampled on a rainy day. The water on the moss was squeezed out into a micro-tank and immediately scanned with the stereo microscope. There were some nematodes found in the samples, but no rotifers were seen. A few tardigrades were found and were quickly transferred to a microscope slide using a capillary pipette. Additional squeezings were added to the slide and a cover slip was gently lowered onto the drop. The photomicrograph was taken at 100x with an Olympus Camedia C-5060 digital camera mounted on an Olympus BHT scope. Contrast, cropping and image size were adjusted with Adobe Photoshop.



I have found no information regarding the presence or absence of these creatures relative to the presence or absence of rotifers and, or nematodes. There might well be a logical explanation for these occurrences, but at this time, they simply appear to be a peculiar series of coincidental random events■

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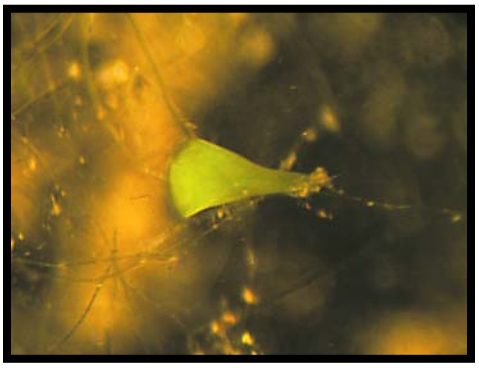
Using A Micro-Tank

The main advantage of using this simple device is the ease it affords when looking at a sample of the pond water. Side-lighting offers another advantage; a neat way to view the wee creatures in a more natural state of incident light. True, that this can be done with greater resolution with a trinocular biological microscope using transmitted light, but with the stereo micro-tank system one can view a relative microcosm of the pond and see the varied life-forms at various levels of the tank. Individual specimens, if not too active, can be separated to a standard blank slide for more detailed study or imaging.



The image is that of Stentor, a ciliate. Early in the spring, when the days begin to lengthen, become warmer with more sunshine, this free-swimming phase of Stentor will eventually attach itself to plant material for feeding on passerbys much smaller than itself. Stentor was found in abundance in a pond water sample taken from an isolated pool at Ramapo Lake in Oakland, NJ on 24 March 2008. Approximately 2 ml of the sample was placed in a micro-tank and illuminated by fiber optic sidelighting. The digital image was taken through one eyepiece of a stereo microscope at approximately 100x. The exposure was 1/10 second■

Mel Pollinger

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John Scott Becomes Associate Curator and Archivist For NYMS

John Scott discovered and joined NYMS in the mid 1980s soon after arriving in NYC to pursue a career in the analysis and conservation of works of art. He started using microscopy earlier in various school classes and internships, while studying art structures and materials. (continued on page 4)

After completing several NYMS courses, John became active in NYMS and helped with one or two more courses. He then served on the NYMS Board for a few years which included being Treasurer. John was subsequently made a Fellow of NYMS.

For the past month, John has been ardently setting up the Museum room as a microscopy research area. John has been working with the newly acquired Olympus microscopes donated to NYMS by the family of the late Mort Abramowitz. In this new position, he will be a great help to NYMS and to Don O'Leary, NYMS Curator and Educational Chair■

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(Microscope Day, continued…)

- Actual times may vary according to exact length of presentations. Ample time is allowed for informal question and answer periods.
- Refreshments to be served.
- Photo ID necessary for entry into building.

Special thanks to:
Dr. John Reffner for display of the IlluminatIR infrared microspectrophotometer
Martin Eber from Olympus America for display of their new DP-20 digital camera
For more information, contact Peter Diaczuk: pdiaczuk@jjay.cuny.edu

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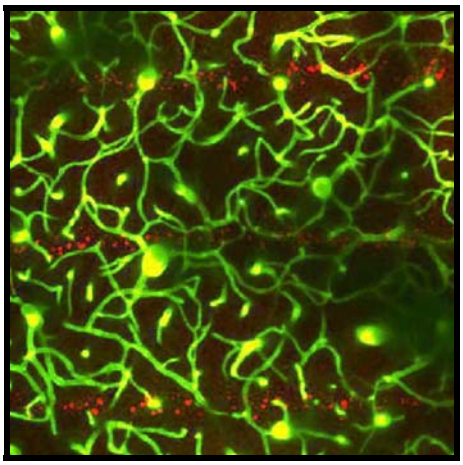
Answer to March 2008 Mystery photo



Angela Klaus came closest with a question: Is it fluorescence of some microbiological material?

Image and Answer Provided by Dan Slatkin

Two-photon photomicrograph of the left parietal lobe in a living, five-week-old Swiss nude mouse's brain 48 hours after 1000-gray skin-entrance doses from simultaneous irradiations by multiple, almost parallel, 25 micrometer-wide microbeams about 200 micrometers apart on center. This minimally damaging irradiation was not lethal to the mouse. The *in vivo* image is that of an approximately 0.60 mm x 0.60 mm square zone about 200 micrometers deep in the brain. Our image and information were provided through the courtesy of their principal author* Raphaël Serduc and co-author* Jean Laissue.
*International Journal of Radiation Oncology Biology Physics, Volume 64, Number 5, pages 1519-1527, 2006

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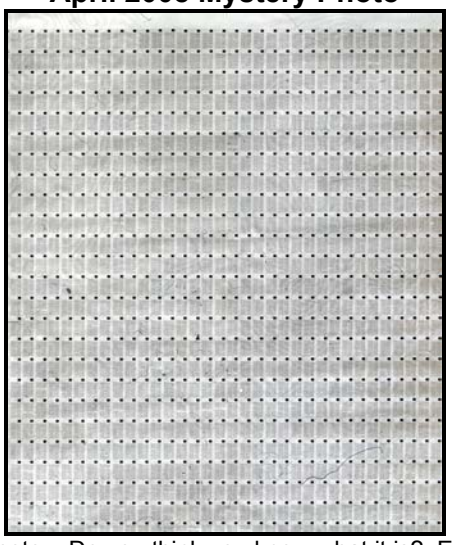
April 2008 Mystery Photo



Mystery Photo – Do you think you know what it is? Email or phone me your answer. > Mel

Got something you want to sell, trade or publish in the Newsletter? Write, call or send an email message to:
201-791-9826 or pollingmel@verizon.net
or
Mel Pollinger, Editor
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