Journal of
THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA
Volume 7 Number 9 September, 2002

# EARLY GLIMPSES OF THE MICROSCOPIC WORLD

**by Stuart L. Warter**

Richard Steele was a playwright who, under the pseudonym of Isaac Bickerstaff, published a triweekly single page journal of politics and society. In issue No. 119 for January 10, 1709, he authored the following essay in which he mused about the microscopic world as expressed in the contemporary writings on the subject. Apparently he did not own a microscope of his own, but, was at least present while one was used by someone else. Reading the florid prose common to the period requires the patience to wait until the writer eventually comes to the point he wishes to make (the reader should remember that the lower case letter "s" appears as an "f" except at the end of a word).

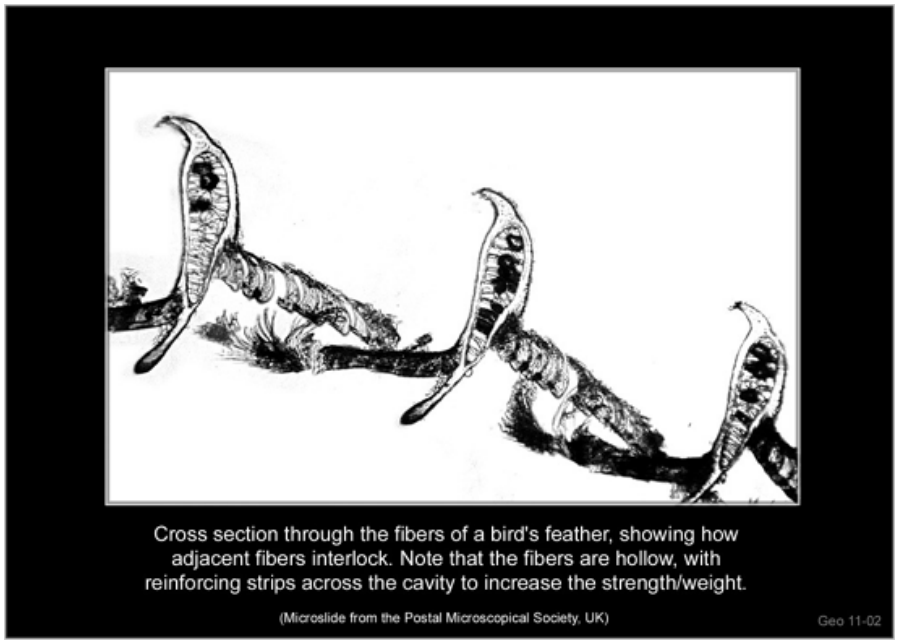
The conflict between religion and science is evident, and many references are so oblique, that one wonders how many readers would have been literate enough to understand them. For example, who is the "Great Heathen Anatomist" – Galen, Vesalius, DaVinci, Harvey, or some later dastardly grave robber?

That Steele is not a scientist is evident, although what passed for science at the dawn of the Eighteenth Century was a far cry for what passes for it today. For example, his infinite series of oak trees contained within an acorn mirrors the widespread misunderstanding of Schwammerdam's Theory of Preformation that was common to scientists of the day. Certainly neither he nor anyone else could have seen even one.

Nor is it clear what were the little animals that were swimming in human blood – were they parasites such as *Trypanosoma* or merely blood cells? The identity of the nematodes in a spoon of vinegar is clear to us, but what were the "Leviathans" swimming among them? What were the "dreadful Beasts of Prey" inhabiting the "Woods and Forrests" formed by the hairs on the surface of a leaf?

Clearly, there was much room for imagination to play a disproportionate role in interpretation in the absence of true knowledge or understanding of this once unseen world.

*continued on page 3*



Cross section through the fibers of a bird's feather, showing how adjacent fibers interlock. Note that the fibers are hollow, with reinforcing strips across the cavity to increase the strength/weight.

(Microslide from the Postal Microscopical Society, UK) Geo 11-02

**MSSC Journal**
**Volume 7 Number 9 September 2002**
**CONTENTS**

**MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA**

Numb. 119

# The TATLER.

By *Iſaac Bickerſtaff* Eſq;

*In Tenui labor.*——— Virg.

From *Tueſday January* 10. to *Thurſday January* 12. 1709.

I Have lately applied my ſelf with much Satisfaction to the curious Diſcoveries that have been made by the Help of Microſcopes, as they are related by Authors of our own and other Nations. There is a great deal of Pleaſure in prying into this World of Wonders, which Nature has laid out of Sight, and ſeems induſtrious to conceal from us. Philoſophy had ranged over all the viſible Creation, and began to want Objects for her Enquiries, when the preſent Age, by the Invention of Glaſſes, opened a new and inexhauſtible Magazine of Rarities, more wonderful and amazing than any of thoſe which aſtoniſhed our Forefathers. I was Yeſterday amuſing my ſelf with Speculations of this kind, and reflecting upon Myriads of Animals that ſwim in thoſe little Seas of Juices that are contained in the ſeveral Veſſels of an Human Body. While my Mind was thus filled with that ſecret Wonder and Delight, I could not but look upon my ſelf as in an Act of Devotion, and am very well pleaſed with the Thought of the Great Heathen Anatomiſt, who calls his Deſcription of the Parts of an Human Body, *An Hymn to the Supreme Being*. The Reading of the Day produced in my Imagination an agreeable Morning's Dream. if I may call it ſuch; for I am ſtill in Doubt, whether it paſſed in my Sleeping or Waking Thoughts. However it was, I fancied that my good Genius ſtood at my Bed's-head, and entertained me with the following Diſcourſe; for upon my Riſing, it dwelt ſo ſtrongly upon me, that I writ down the Subſtance of it, if not the very Words.

If, ſaid he, you can be ſo tranſported with thoſe Productions of Nature which are diſcovered to you by thoſe Artificial Eyes that are the Works of Human Invention, how great will your Surprize be, when you ſhall have it in your Power to model your own Eye as you pleaſe, and adapt it to the Bulk of Objects, which, with all theſe Helps, are by infinite Degrees too minute for your Perception. We who are unbodied Spirits can ſharpen our Sight to what Degree we think fit, and make the leaſt Work of the Creation diſtinct and viſible. This gives us ſuch Idea's as cannot poſſibly enter into your preſent Conceptions. There is not the leaſt Particle of Matter which may not furniſh one of us ſufficient Employment for a whole Eternity: We can ſtill divide it, and ſtill open it, and ſtill diſcover new Wonders of Providence, as we look into the different Texture of its Parts; and meet with Beds of Vegetables, Mineral and Metallick Mixtures, and ſeveral Kinds of Animals that lie hid, and, as it were, loſt in ſuch an endleſs Fund of Matter. I find you are ſurpriſed at this Diſcourſe; but as your Reaſon tells you there are infinite Parts in the ſmalleſt Portion of Matter, it will likewiſe con-

vince you, that there is as great a Variety of Secrets, and as much Room for Diſcoveries, in a Particle no bigger than the Point of a Pin, as in the Globe of the whole Earth. Your Microſcopes bring to Sight Shoals of Living Creatures in a Spoonful of Vinegar; but we who can diſtinguiſh them in their different Magnitudes, ſee among them ſeveral huge *Leviathans*, that terrific the little Fry of Animals about them, and take their Paſtime as in an Ocean, or the great Deep. I could not but ſmile at this Part of his Relation, and told him, I doubted not but he could give me the Hiſtory of ſeveral inviſible Giants, accompanied with their reſpective Dwarfs, in Caſe that any of theſe little Beings are of an Human Shape. You may aſſure your ſelf, ſaid he, that we ſee in theſe little Animals different Natures, Inſtincts and Modes of Life, which correſpond to what you obſerve in Creatures of bigger Dimenſions. We deſcry Millions of Species ſubſiſted on a green Leaf, which your Glaſſes repreſent only in Crowds and Swarms. What appears to your Eye but as Hair or Down riſing on the Surface of it, we find to be Woods and Forreſts, inhabited by Beaſts of Prey, that are as dreadful in thoſe their little Haunts, as Lions and Tygers in the Deſerts of *Libya*. I was much delighted with his Diſcourſe, and could not forbear telling him, That I ſhould be wonderfully pleas'd to ſee a Natural Hiſtory of Imperceptibles, containing a True Account of ſuch Vegetables and Animals as grow and live out of Sight. Such Diſquiſitions, anſwered he, are very ſuitable to reaſonable Creatures; and you may be ſure, there are many curious Spirits amongſt us who employ themſelves in ſuch Amuſements. For as our Hands, and all our Senſes, may be form'd to what Degree of Strength and Delicacy we pleaſe, in the ſame manner as our Sight, we can make what Experiments we are inclin'd to, how ſmall ſoever the Matter be in which we make them. I have been preſent at the Diſſection of a Mite, and have ſeen the Skeleton of a Flea: I have been ſhown a Forreſt of numberleſs Trees, which has been pick'd out of an Acorn. Your Microſcope can ſhow you in it a compleat Oak in Miniature; and could you ſuit all your Organs as we do, you might pluck an Acorn from this little Oak, which contains another Tree; and ſo proceed from Tree to Tree, as long as you would think fit to continue your Diſquiſitions. It is almoſt impoſſible, added he, to talk of Things ſo remote from common Life, and the ordinary Notions which Mankind receive from blunt and groſs Organs of Senſe, without appearing extravagant and ridiculous. You have often ſeen a Dog opened to obſerve the Circulation of the Blood, or make any other uſeful Enquiry; and yet would be tempted to laugh if I ſhould tell you, that a Circle or much greater Philoſophers, than any of the Royal Society, were preſent at the cutting up of one of thoſe little Animals which we find in the Blue of a Plumb: That it was ty'd down alive before them; and that they obſerved the Palpitations of the Heart, the Courſe of the Blood, the Working of the Muſcles, and the Convulſions in the ſeveral Limbs, with great Accuracy and Improvement. I muſt confeſs, ſaid I, for my own Part, I go along with you in all your Diſcoveries with great Pleaſure; but it is certain, they are too fine for the Groſs of Mankind, who are more ſtruck with the Deſcription of every Thing that is great and bulky. Accordingly we find the beſt Judge of Human Nature ſetting forth his Wiſdom, not in the Formation of theſe Minute Animals, (tho' indeed no leſs wonderful than the other) but in that of the *Leviathan* and *Behemoth*, the *Horſe* and the *Crocodile*. Your Obſervation, ſaid he, is very juſt, and I muſt acknowledge for my own Part, that altho' it is with much Delight that I ſee the Traces of Providenee in theſe Inſtances; I ſtill take greater Pleaſure in conſidering the Works of the Creation in their Immenſity, than in their Minuteneſs. For this Reaſon, I rejoice when I ſtrengthen my Sight ſo as to make it pierce into the moſt remote Spaces, and take a View of thoſe Heavenly Bodies which lie out of the Reach of Human Eyes, tho' aſſiſted by Teleſcopes. What you look upon as one confus'd White in the Milky-Way, appears to me a long Tract of Heavens, diſtinguiſh'd by Stars, that are ranged in proper Figures and Conſtellations. While you are admiring the Sky in a Starry Night, I am entertained with a Variety of Worlds and Suns placed one above another, and riſing up to ſuch an immenſe Diſtance, that no created Eye can ſee an End of them.

The latter Part of his Diſcourſe flung me into ſuch an Aſtoniſhment, that he had been ſilent for ſome Time before I took Notice of it when on a ſudden I ſtarted up and drew my Curtains to look if any one was near me but ſaw no body and cannot tell to this Moment whether it was my good Genius or a Dream that left me.

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# WORKSHOP OF THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA

**by: Jim Solliday and George G. Vitt, Jr.**

**Date: Saturday, 7th September 2002**
**Location: Ken Gregory's Residence**

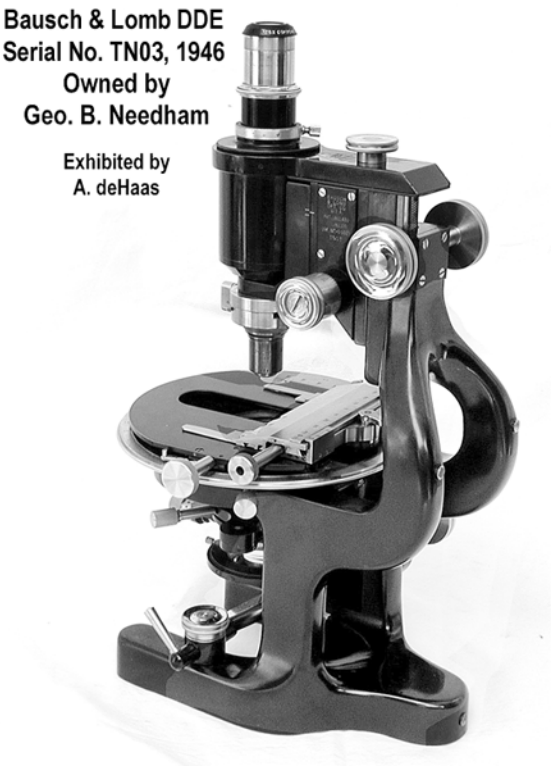
The workshop began at 9:30 AM at Ken Gregory's home with 24 members present. The gathering came together under the shade in the back yard and was called to order by the President, Jim Solliday. We were all quite pleased with the new enclosed patio area, which was properly filled with microscopes and related exhibits. Ken had begun his home renovation project a few months earlier and this was the first gathering of friends to have the chance to see it after completion. We were all very impressed and indeed expressed our gratitude to Ken for his good hospitality. Also in use for the first time were the nice new tables that were donated by Alan deHaas a few months earlier. This particular workshop was in one respect a special occasion as we were honored to have Mr. Graham Marsh, a visitor from England. In anticipation of his visit the theme of this gathering was *The American Microscope*. It was assumed that Mr. Marsh was already quite familiar with the English instruments. As the workshop began it was a gratifying feeling to see a large number of items representing a full spectrum of instruments both old and modern. Two exhibition tables were covered from one end to the other with microscopes and their accessories. Graham Marsh was introduced to the Society and explained that he was in America with his family on holiday. In his own words, Mr. Marsh described his visit to the homes of a number of our members as "overwhelming".

Announcements were made concerning the upcoming Wednesday meeting and the next hands on workshop. Our next Wednesday meeting will be held on September 18th at the Newroads school and will be a Swap Meet sales meeting. This means that members who have something to sell need to set up a table with their sales items on display. If you are looking for a new microscope or that special accessory item this will be a good meeting to attend. There will also be a short

slide show of photomicrographs for those who do not plan to participate in the trade activity. The group was also reminded of the upcoming hands on workshop that will be held on the third Saturday of October. This workshop will be conducted by Mr. Ed Jones and will deal with the subject of fibers under the microscope. The equipment and supplies needed for this event will be announced at the Lecture meeting on September 18th. This will be our special workshop No.5 in our ongoing series of educational hands-on workshops. These special workshops are held in a classroom at the Newroads School, beginning at 9:30 in the morning. I would also like to remind our members that the November Exhibition meeting is approaching and we need to begin thinking of what sort of display each of us will prepare.

Other announcements included an expression of gratitude to Dave Hirsch for his work as our Publisher, this in addition to his roll as our Treasurer. This week, Dave informed the President that due to family obligations he would no longer be able to act as our Publisher. However, he will continue as our Treasurer and remain the officer in charge of collecting and maintaining the dues. In his place we are very pleased to engage the service of Pete Teti as our new Publisher. His job will primarily consist of acting as our contact with the printer and serve as distributor of the Journal. Posting the Journal is not an easy job and we are indeed very grateful to Pete for staking on these duties. It should be said that when asked, Pete did not hesitate to accept this important responsibility. I am happy to say that he is one of our good members who by his contributions insure the success of our Society.

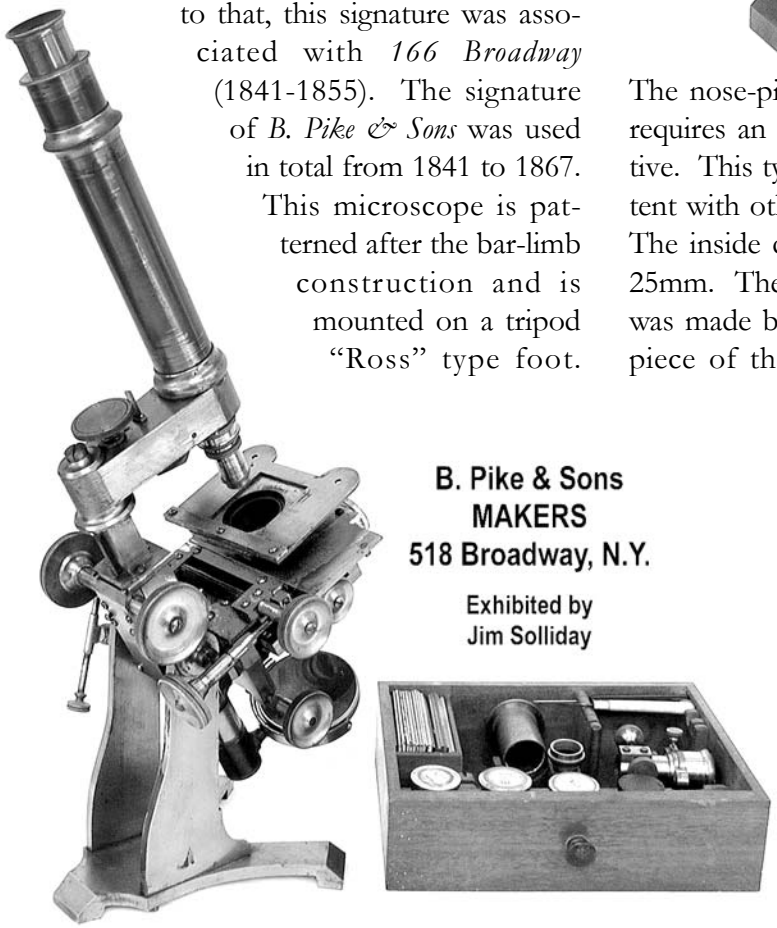
**Alan deHaas** exhibited a Bausch & Lomb DDE, which was acquired from Ron Erb, and which was originally owned by the late George Needham. The TN03 serial number implies that 1946 was the year of manufacture. On the door of the case is a chart of procedures put together by Dr. Needham (see illustration), embossed in the paper is the identification seal of Dr.




Needham as well as his signature. This is a very rare and important microscope and at the time of purchase was quite expensive. This instrument was set up for Needham by B&L for photomicrography and as such, is equipped only with a monocular tube. The nosepiece holds a single objective in centering mount. It is the same nosepiece as used on contemporary B&L Pol Stands. This microscope can be used both vertically or horizontally depending on the photographic system that is employed. It comes with a very nice hardwood case having a drawer full of accessories.

tributions Needham made to microscopy. George Herbert Needham is the author of a number of important books on the subject including *The Practical Use of the MICROSCOPE*, which has been published in a number of continuing editions. This book has been used as a textbook in college level curricula. In the late 1940's Needham was also responsible for the re-birth of the then defunct San Francisco Microscopical Society. Jim Solliday described for the group a set of test slides that at one time belonged to Dr. Needham. This set includes a very rare and useful example of a Fasoldt ruled slide.


**Jim Solliday** exhibited two early American microscopes made by *Benjamin Pike & Sons* of New York City. The smaller of the two stands was manufactured ca.1866 and is best described as a student microscope. There is no serial number, but the signature is engraved in script on the face of the foot, ***B. Pike & Sons MAKERS, 518 Broadway, N.Y***. This signature was known to be in use from 1855–1867. Prior to that, this signature was associated with *166 Broadway* (1841-1855). The signature of *B. Pike & Sons* was used in total from 1841 to 1867. This microscope is patterned after the bar-limb construction and is mounted on a tripod "Ross" type foot.




The nose-piece is proprietary to the maker and requires an adapter in order to attach an objective. This type of nosepiece seems to be consistent with other contemporary Pike microscopes. The inside diameter of the body-tube measures 25mm. The objective seems to be a 2-inch and was made by William Wales. It fits to the nosepiece of the microscope by an inside female thread similar to the early Ross system. The objective also features an outside thread of the usual Society type, leaving the lens with two types of thread. The adapter was made by Pike and attaches only into the inside female thread of the objective. The coarse focus is provided by the usual rack & pinion (straight cut) and works by moving the bar limb up and down within the trunnion housing. A short direct-drive screw mounted to the nose-

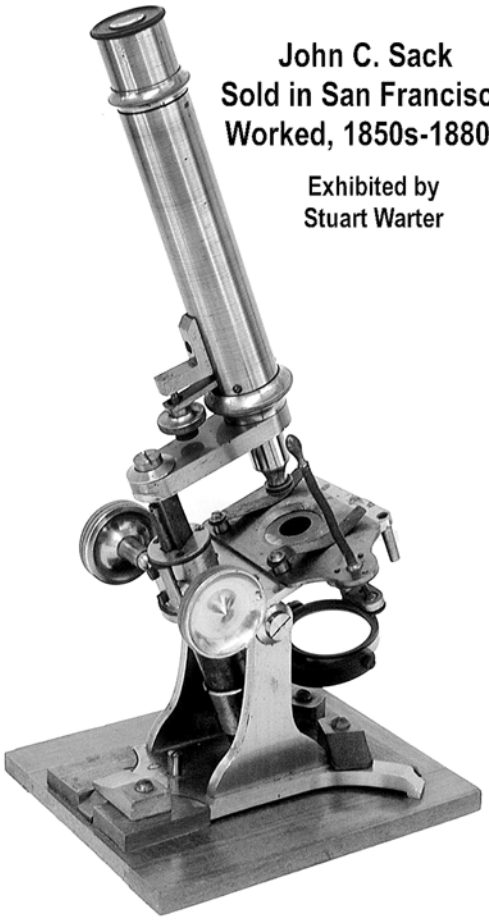
piece provides the fine adjustment. This is much like the early Ross fine focus movement found on his student microscopes. The finish of this stand is oxidized brass much like the method used for "browning" on barrels of 19th Century shotguns. The overall condition is very good despite the fact that there is no case.

The second microscope Jim had on exhibit was also manufactured by B. Pike & Sons, but was much larger. The date of this stand is closer to 1860 and was offered as Pike's first class microscope, Pike No.1. The microscope is patterned after the design of Andrew Ross and is the large bar-limb type construction. It is safe to say that it's a very rare example of an early American microscope. It came stored in a large hardwood case with a drawer at the bottom. It features a large mechanical stage with conspicuous knurled knobs for the X&Y movement. It has a centering substage which is focused by a fusee chain drive. The uprights are secured to trunnions and supported by a Ross type foot. There are four signed Charles Spencer objectives and two eyepieces. Three of the objectives are attached to the nosepiece by means of the Spencer bayonet mount (an early mounting system that was discontinued in 1859 or 1860). In the drawer are a number of dissecting tools, condenser fitting and several dozen French slides. There is also a large bulls-eye that is mounted to the side of one of the uprights. Both of the microscopes that were exhibited by Jim represent important examples of the Pike microscope line available in the late 1850s, and 1860s. To date very little is known about Pike microscope production and any contribution on this subject would be very welcome indeed.

McAllister & Bro.
ca.1860 (Family Microscope)
Exhibited by
Stuart Warter

American Style (Unsigned)
ca.1868-9
Exhibited by
Stuart Warter

**Stuart Warter** exhibited a total of four microscopes all having the common feature of a "White" lever stage. All four stands were sold in America with the *Benjamin Pike* being the only one actually manufactured here. The latter was signed *B. Pike & Sons* and was probably made in New York City in the mid 1860s. As mentioned above, the signature of *Benjamin Pike & Sons* was



John C. Sack
Sold in San Francisco
Worked, 1850s-1880s

Exhibited by
Stuart Warter

B. Pike & Sons
With "White's Stage"

Exhibited by
Stuart Warter

used from 1841-67. The overall appearance of the Pike is much like those of Ross as it represents the bar-limb pattern. The foot is, however, very much like those of Grunow who also made microscopes at this time. The optics were made by William Wales with the storage cans being signed by Pike. Stuart stated that possible confusion over who made the objectives may have encouraged Wales to begin signing his lenses. The lever stage also has the over all appearance of those produced by Grunow; in fact it would not be difficult for a collector to confuse this

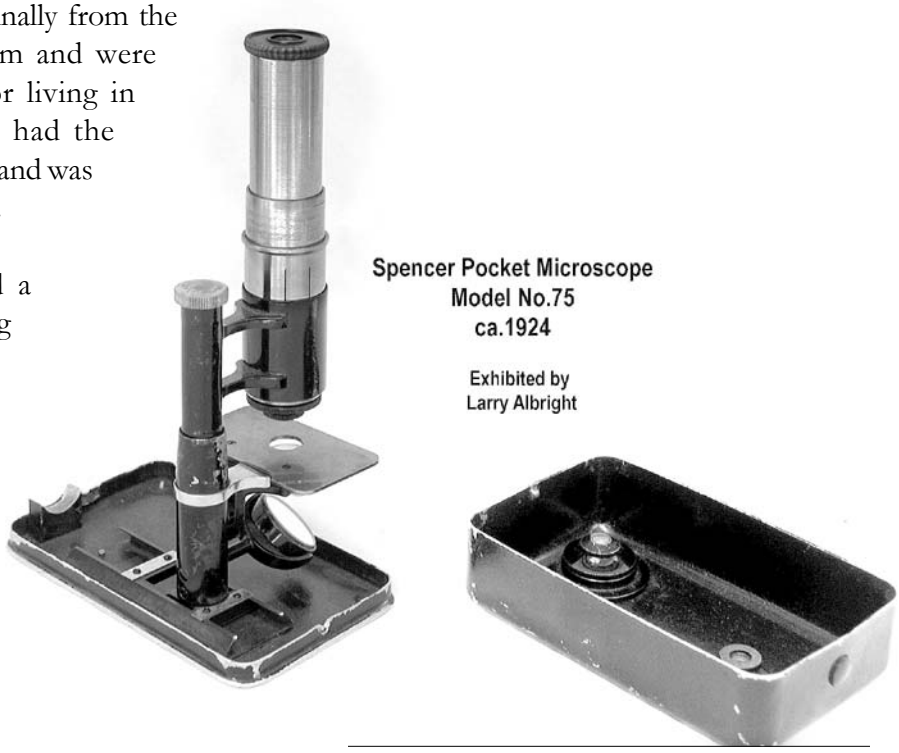
Pike & Sons, N.Y.
Exhibited by Stuart Warter

stand for similar contemporary microscopes made by Grunow. The remaining three smaller microscopes were all most likely manufactured by the same maker, probably French, possibly Nachet. They were all imports that were sold by American retailers. All three are also of the bar-limb pattern with features of the stage being almost identical. The first stand was a mystery but referred to as having an American style. At this time it is not possible to determine who sold this model. Stuart estimates that it was likely manufactured in the period 1868-69. At first glance he thought it might be a Pike microscope but after close inspection it remains a mystery. This was a very well made instrument with a combination of features that appear to be French, German and indeed American. The second stand was sold by McAllister & Bros. who worked from 1853-64 in Philadelphia. The third stand was sold by John C. Sack of San Francisco, he worked from the 1850s-1880s. Sack was in business as an instrument maker for about 40 years and was known as an original 1849er. He retired in San Francisco to a place that was referred to as a home for old 49ers. In the case is a very nice trade card with the name and address of *John C. Sack*.

**Ed Jones** described a collection of microscope slides that were originally from the estate of George Needham and were now owned by a collector living in Ohio. Ed stated that he had the chance to see these mounts and was impressed with the quality.

**Jack Levy** demonstrated a very nice pair of magnifying glasses that can be attached to a regular pair of prescription glasses (clip on type). A very nice feature of this magnifier is that it could be turned up and out of the way when not in use. He stated that they could be obtained from Ashmore Opticians in Pasadena California. Their address was given as at Mentor & Euclid in Pasadena. Jack also described a number of Natural History books he obtained from a Pasadena book seller.

**Larry Albright** exhibited a very rare pocket microscope made by Spencer, sold as the Spencer Model No.75. It came stored in a small soap-box sized metal case. This little microscope was offered by Spencer ca.1924. He also exhibited a Bausch & Lomb folding/pocket microscope listed in the catalogue as stand No.40. This nice little microscope was manufactured ca.1926 and continued to be made for a number of years. Larry also talked about a very early example of eye glasses referred to as "Pince-Nez". Bausch & Lomb sold them around 1870, the frame was made of gutta percha. Finally, Larry exhibited a rare example of a McIntosh, the "**Medical Microscope No.2**." It was signed as *McIntosh Battery & Optical Co., Chicago, No.603* ca.1892. This microscope was especially adapted to the physician for his clinical work. The No.2 differed from the No.1 (Medical Microscope) only in the fact that the foot and limb are japanned (black enameled iron) rather than of lacquered brass. It sits on a three-arm foot with a single pillar topped



Spencer Pocket Microscope
Model No.75
ca.1924

Exhibited by
Larry Albright

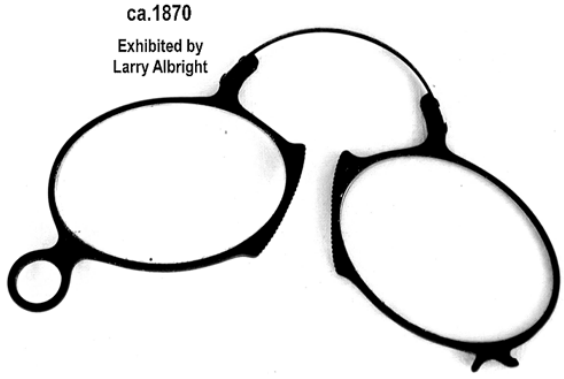
McIntosh, ca.1892
American from Chicago

Exhibited by
Larry Albright


with the usual pivot joint. Larry says that this foot is often affectionately called the "three-toed frog foot". The brass body tube is 6 ¾ inches long and 1 3/8 inches in diameter. The 6-inch draw-tube has an inside diameter of 1 ¼ inches. The nose-piece is provided with a society screw. The unusual fcat is that his stand is provided with a Tolles objective, probably added by the owner. The coarse adjustment is by means of rack & pinion, while the fine movement is by a milled head which moves the entire body. The circular rotating stage is 3 ¾ inches in diameter. The double-sided mirror slides on a radial stem, which can be conveniently swung above the stage. The microscope with the draw-tube closed stands 14 inches high. At the time of manufacture the price was $57.00; this included one eyepiece and one Gundlach ¼/1-inch dividing objective.

Pince-Nez, B&L Gutta Percha Frames
ca.1870

Exhibited by
Larry Albright



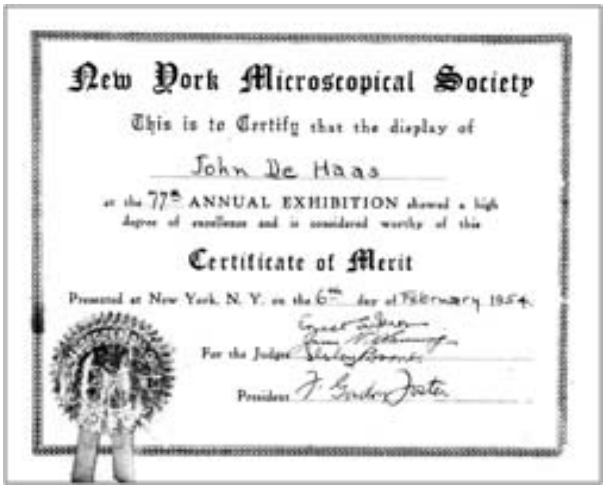
Bausch & Lomb
Pocket Microscope No.40
ca.1926

Exhibited by
Larry Albright

A Catalogue issued by the **McIntosh Battery & Optical Co**., stated it was "Successor to McIntosh Electrical Corporation, established in 1879." The first address associated with the new name was located at 521-531 Wabash Ave., Chicago. Padgitt believes this business was established around 1889 (*A Short History of the Early American Microscope*, 1975). By October of 1889, the McIntosh Battery and Optical Co., was located at 141-143 Wabash Ave. There are at least seven different addresses associated with the various McIntosh Catalogues! McIntosh did not make his own objectives, but rather supplied lenses from both Gundlach and William Wales of New York. Catalogues under the name of McIntosh Battery and Optical Co. continued to be issued until at least 1929. The last known Catalogue was issued in that year from; 223-233 No. California Ave. Chicago. Lyman McIntosh died in Florida while on a speaking trip in March of 1892.

**Swift Microtome,**
**copy of a 19th Century Zeiss model**
Exhibited by
John deHaas

**John deHaas** described a small hand microtome made by Swift that he says is quite good for cutting plant sections. It was made after the pattern of an old Zeiss microtome from 1885. Also on display was a Certificate of Merit issued by the New York Microscopical Society to our very own Dr. deHaas. It was presented at the 77th Annual exhibition and represented a "high degree of excellence" for John's contribution. It included the official golden seal of the Society and was issued in February of 1954.


New York Microscopical Society

This is to Certify that the display of

John De Haas

at the 77th ANNUAL EXHIBITION showed a high degree of excellence and is considered worthy of this

Certificate of Merit

Presented at New York, N. Y. on the 6th day of February 1954.

For the Judges

President

**Isaiah Lieberman** exhibited a modern Bausch & Lomb microscope, which featured a zoom system in the body tube. Of particular interest was a nice example of an Italian Officine Galileo microscope that was obtained from Lab-X. It was originally sold by Upplem of New York with a serial number of 124299; it featured a binocular head with a three objective nosepiece (Model TCX). Galileo still is in business, but discontinued microscopes a year ago.

**John Fedel** talked about a remote controller for the Nikon Coolpix-series cameras called DigiSnap. It allows you to operate a digital camera from a distance, enabling you to take pictures, adjust the lens zoom, as well as perform time-lapse photography. Of course, for microscopy, the prime advantage is to be used as a digital cable release to avoid vibration while taking pictures. The DigiSnap controllers are distributed by Harbortronics, see their website: www.harbortronics.com.

**Microscope Adapter for Nikon Coolpix cameras**

Exhibited by John Fedel

John also talked about a piece of software called "The Force" which can control the Nikon Coolpix camera through its serial port. http://velatron.com/dca/theforce/. He found this information on a Yahoo Internet group called "Nikon Coolpix Photomicro & Macrophoto" or "CoolpixPhotoMicMac" for short. This discussion group can be accessed at www.yahoogroups.com. You have to join the group, after which you can ask questions and receive replies from other members. There are also an area for members to upload picture files to share with other members what they are working on.

In addition, John exhibited a microscope adapter for the Nikon CoolPix digital camera. This adapter was manufactured by Zarf Industries and is made out of Delrin which is good in this application. The adapter uses the 28mm lens thread of the Coolpix camera. The adaptor costs $80.

**Graham Marsh** talked about the marvelous antique microscope collections he has the chance to visit here in California. He again indicated that as a result his poor head was still spinning. He also showed the group a portable microscope he brought from England. It came stored in a leather-covered case that measured about four inches by three inches. This was a rather early example of a small botanical microscope that "could" have been made by A. Pritchard but no one was able to say for sure. Of interest was the fact that a Pritchard slide mount was stored in the case along with the instrument. Pritchard mounts are often recognized because of the red wax that seals the margins of the two slips of glass that make up the slide. The botanical microscope was mounted on a small rectangular base made of brass. The optics included three threaded button type simple lenses. Graham owns and operates Antique Science Instruments from Darwen, Lancashire.

**Allen Bishop** talked about a rare Zeiss microscope that was brought by Graham Marsh. This microscope was engraved with the signature of *Carl Zeiss, Jena*, having a serial number of 1563-2515 (a two block serial number), it is described in the 1872 Zeiss Catalogue as Stand I. This

**Botanical Pocket Microscope 1st Quarter, 19th Century**

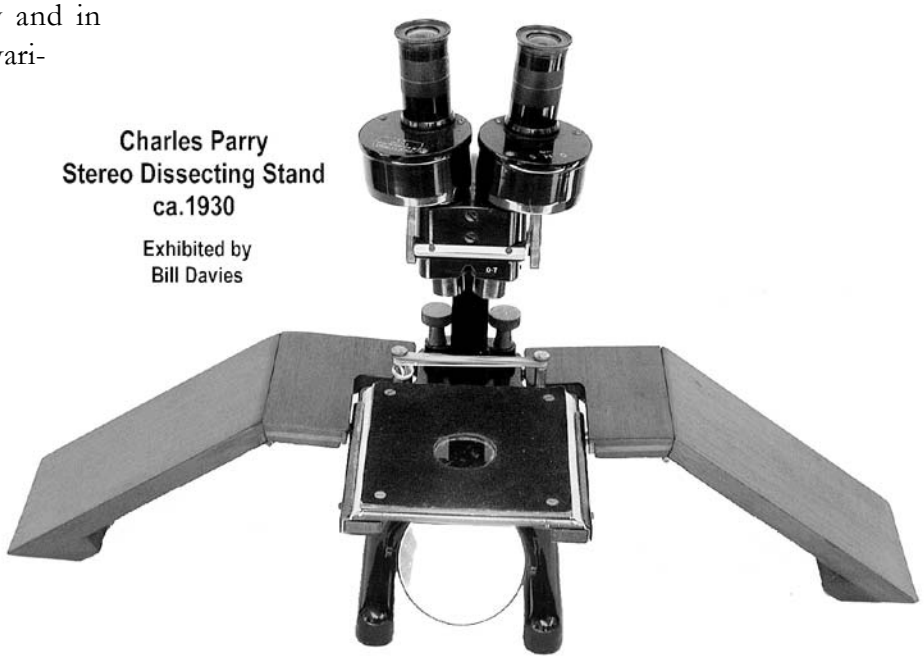
Exhibited by Graham Marsh

puts the instrument at about the year 1874. The most interesting feature of the scope was the "C" shaped pillar and the fine adjustment screw that was mounted under the limb. This microscope also inspired the old discussion of whether to polish or not to polish. The general feeling of the group was that to polish was justified only as a last resort and when pitting of the brass could be slowed by re-lacquering. Incidentally Graham Marsh made it clear that he was not the culprit who was responsible for polishing this microscope and that the condition of the brass surface indicated that something needed to be done to halt the oxidation process.

Zeiss Stativ I
Nr.1563/2515, 1874

Exhibited by
Bishop and Marsh

**Alan deHaas** and **Jim Solliday** talked a little about the uses of microscopes in the 19th Century. One of the most important concerns for people at the time was the adulteration of food, and in particular the dilution of butter by margarine oils. Maintaining a healthy food supply was a difficult task, as Victorians did not have the use of proper refrigeration or efficient transportation. Many of the cities and towns across the USA set up agricultural departments in order to maintain inspection standards for the protection of the food supply. Another major concern was the problem represented by the pork industry. By the 1880's the inspection of pig meat for the detection of trichina was done throughout the country and in Europe. Many of the various microscope makers even began to design and market special instruments specifically for the inspection of pork.



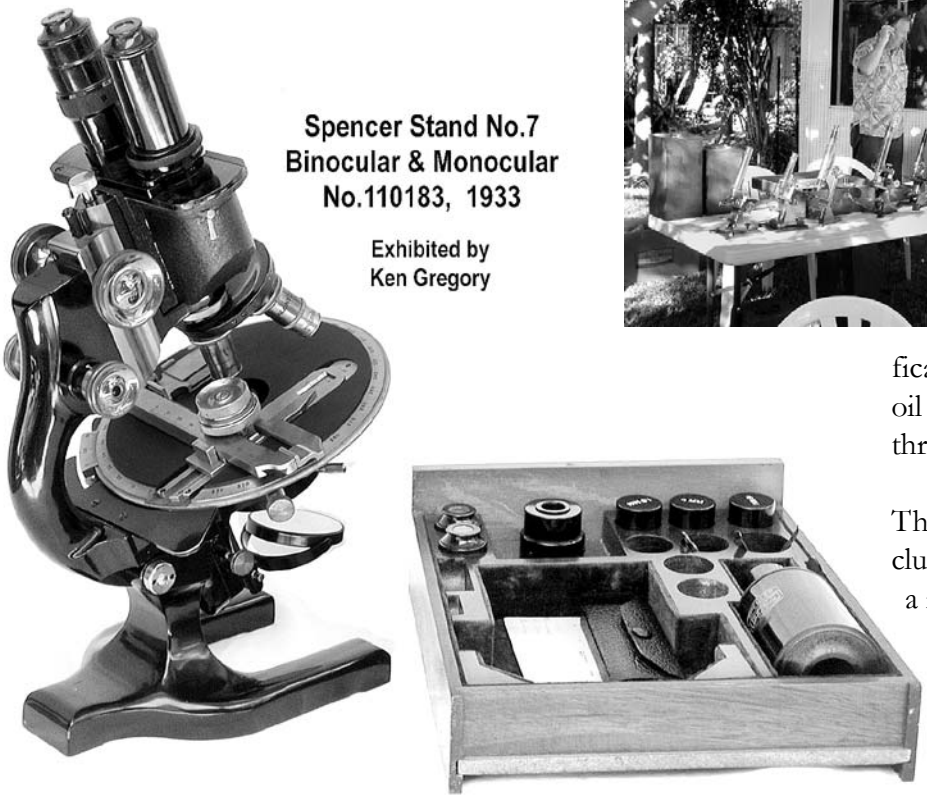
Charles Parry
Stereo Dissecting Stand
ca.1930

Exhibited by
Bill Davies

**Bill Davies** exhibited a very nice Charles Perry stereomicroscope, which included its original wooden armrests. It came with a very nice hardwood case which contained three sets of

eyepieces and three pair of objectives. Bill indicated that this instrument was for sale.

**Ken Gregory** exhibited a mint-condition Spencer microscope, Model 7 (Serial No.110183; 1933). This black enameled and lacquered brass microscope has interchangeable binocular and monocular body tubes. The circular and graduated stage has a built-in mechanical motion with a diameter of 150mm. It was designated the Type V stage by Spencer. The triple nosepiece holds three objectives: 1.8mm, 4mm, and 16mm. There are two sets of eyepieces: 10x and 6x. The substage condenser is vertically adjustable by rack & pinion and includes a side mounted fine adjustment. Oblique illumination is accomplished via the movement of three leaves closing toward one side of the condenser. A darkfield stop is also built into the condenser. After the removal of the condenser unit from the centering ring, a stage iris can be substituted which is included as an accessory. Included with the microscope is a booklet "*How to Use and Care for the Microscope*" by the Spencer Lens Co. Also included was a B&L stage micrometer. The case has a lock and key and a top drawer to hold either the binocular, monocular body, or both, plus all the extra eyepieces and objective storage cans. Overall, this is a magnificent vintage microscope outfit.



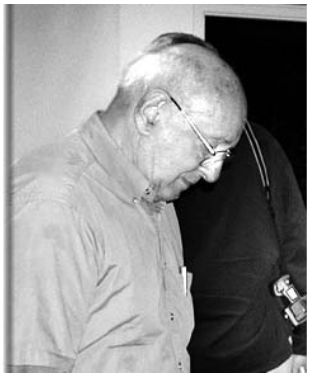

**Larry McDavid** brought the members up to date on his new large Nikon industrial Epi microscope. This instrument has been described in past MSSC Journals. Larry gave a very nice example of how the microscope has been used in "process control". The microscope has a magnification of 1000x without oil and or 2500x when used through the video system.

The Workshop was concluded at about 12:15 with a number of the members adjourning to the local Coco's restaurant. □

# To Polish or Not To Polish; That is the Question?

**by Dave Hirsch**

*Letter to the Editor in the*
*Bulletin of the Scientific Instrument Society:*



In the horror film spoof: "Young Frankenstein", three persons seek admittance to the Frankenstein abode. When the caretaker states: "I am Frau Blucher", lightning flashes, thunder crashes, and the stage coach horses rear in terror. I see here, a similarity to the cue which prompted Mr. Middleton's riposte in his Letter to the Editor in issue 53 of the Bulletin. The word "polishing" becomes explosive, like the name, "Blucher". As in the past, a mere mention of polishing triggers a Pavlovian albeit vitriolic response aimed at the anti-polishing faction.

The polish/no polish issues have enriched the English language, evoking such expressions as "Bermondsey Burnishers", "Marblehead Moralists", "Blue Rinse Brigade", and kindred appellations. Such expressions of reproach are aimed at people who (wantonly?) polish scientific artifacts. Conversely, anti-polishing proponents are a zealous clique who look upon polishing as anathema.

In years past, scientific instruments of all categories, were produced in the hundreds of thousands. These instruments became the scientific antiquaria of today, just as contemporary computers and such will become the antiques of tomorrow. There is no way of knowing how many instruments survived to this day, when we consider the destruction of cities in wartime and the diverting of scientific artifacts to supply materials for conversion into objects of alternate use. We must assume that over time, countless instruments have been destroyed by natural forces and by the wanton acts of man. The surviving instruments and artifacts become the material to which the polishing controversy pertains.

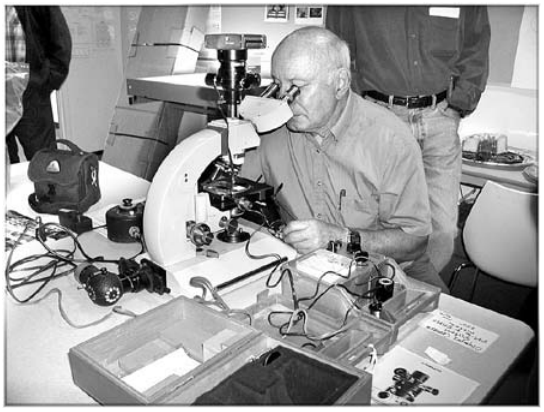
Careful restoration, or polishing as deemed necessary, enhance the market value of historical scientific instruments, depending on the type of patrons being served. We must credit most dealers and their ilk with sense enough to determine whether or not an object should be polished. The astute dealer knows full well whether the instrument is worth more intact, or with some 'cosmetic' treatment. If the "foreign tourist" wants a polished gee-gaw for his den, so be it, if he is willing to pay the price. Granted, there have been horror stories entailing valuable artifacts which have been rendered valueless through polishing by persons ignorant of the artifacts' true value. That, fortunately, is the exception rather than the rule.

You purists out there, Get Real! Those dealers with rouge stained fingers are not decimating whales, creating oil spills or destroying rain forests. They are legitimate businesspersons meeting a demand. They are NOT destroying national treasures, so live and let live! □

## Reply to Dave Hirsch by Alan deHaas

I fully agree with Dave Hirsch's sentiments on polishing. Antique dealers or dealers in collectibles should be encouraged to polish all that they will. What surer way do the honest collectors amongst us have of knowing that their instruments will increase in value. Earthquakes and fires, and the selective destruction of instruments by governments seeking brass for shell casings, fall far short of the annual requirements appropriate to antiquities appreciation. We who

*continued on page 20*



# MSSC Meeting

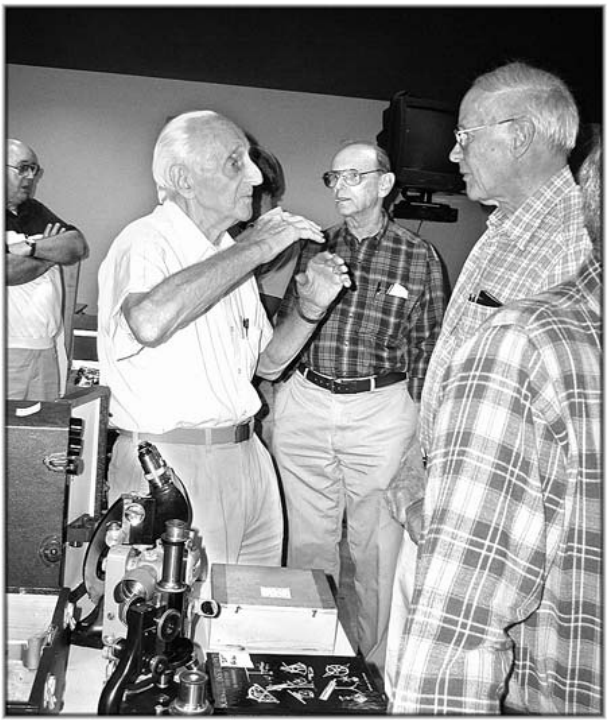
## Reported by Leonie Fedel, Meeting photos by George Vitt

**7:00pm 18th September 2002 at New Roads School.**

Jim Solliday announced that tonight's meeting is a swap meet. The first half of the meeting was spent on viewing items members had bought to sell or trade. After the break, Jim presented a short slide show of photomicrographs covering 19th century microscopic objects.

Jim also reminded members that the meeting on 20th November 2002 would be the Society's annual exhibition meeting. Jim further announced that practical workshops would now be held quarterly rather than monthly, on the fourth Saturday of the respective month. The next practical workshop would be on Saturday 26th October 2002 at 9:00am at New Roads School and facilitated by Ed Jones.

Ed outlined that the workshop would be on mounting fibers and those planning to attend to bring slides, coverslips, tweezers, a stereoscope and light source.□




# Saturday Workshop Announcement

**9:00am 5th October 2002**

**At the home of Izzy Lieberman**

**3300 Corinth Avenue**
**Los Angeles CA 90066**
**310-391-6076**

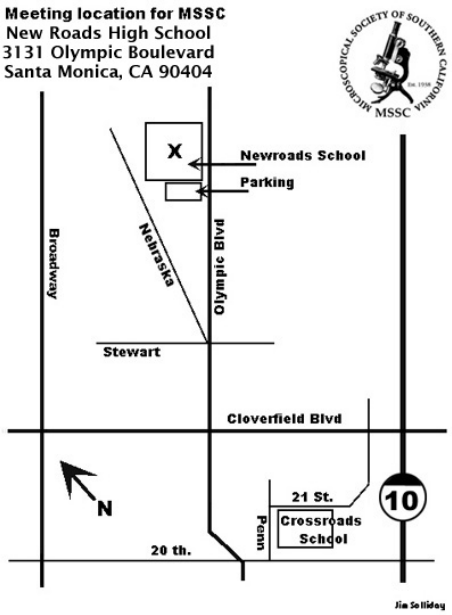

This workshop will be held at Izzy Leiberman's. Activities will start at 9:00am. As usual this is a chance for good friends and fellow microscopists to talk about our favorite subject. You are invited to bring any manner of items related to microscopy to share it with the fellowship. If you have something you would like to sell, please feel free to bring it and set it up at the sales table. All are encouraged to participate and join in the fun.

Lunch after the workshop will be at the local Coco's. If you have any questions please send me a message. I look forward to seeing all of you at the workshop...

Jim Solliday (MSSC President). □

# MSSC Meeting Announcement

### 7:00pm 16th October 2002
### at New Roads School




Dr. Kenneth Gregory from University of California Long Beach will give a talk on the *Anatomy and Histology of the Human Urinary System.* His presentation will use slides to investigate the macroscopic and microscopic anatomy of the human kidney.

Following this, Alan deHaas will provide another lecture from his series *The Microscope and its Methods.* This lecture will focus on Critical Illumination, a method that has fallen into disuse. This illumination system was first used in 1888 and is not dependant on having a large numerical aperture cone of light. Incredible photomicrographs of diatoms were produced using this method.

Dinner beforehand at Coco's restaurant at 5:30pm (near Ocean and Bundy, Santa Monica).

# Practical Workshop Announcement No 5: Mounting Fibers

### 9:00am-12:00pm
### 26th October 2002

### at New Roads School

From now on our hands on workshops will be held every third month (quarterly). They are intended to advance the education of our membership and any students from New Roads School who wish to participate. If any students do turn up please show them our best hospitality. This is the fourth workshop in the series.

Ed Jones will be teaching the practical techniques for mounting fibers. You will need to bring a stereo microscope, microscope slides, coverslips, two forceps or one forcep and a teasing needle, scissors and labels for slides. A transmitted light brightfield or polarized light scope is optional for those who want to view the finished product. Also bring a slide case/carrier to take the finished slides home. Ed will provide hair and fiber samples and the mounting mediums (permount and zylene) as well as a set of reference books.

Space for these workshops is limited. Enrollment is on a first-come, first-served basis. Please contact Pete Teti for further details and to sign up for this or future workshops.

(323) 660-9259 or email tetip@earthlink.net.

# Editor's Note

Please send any articles, photos, member profiles, notifications of forthcoming events and website summaries for inclusion in forthcoming journals to me at:

Leonie Fedel
10945 Rose Avenue #209
Los Angeles CA 90034
(310) 839-9881,
email: mssc@attbi.com

The preferred route is via email, with text and graphics as attachments. Text in the following formats: plain/rich text format/word documents, graphics in the form of jpgs. If you need any help in converting information to these formats, please contact the Editor, who would be happy to help.

*The MSSC Editorial Committee makes decisions concerning Journal content and style and consists of:*

*Jim Solliday (President)*
*Pete Teti (Printing & Distribution)*
*Alan deHass (Education Chair)*
*Leonie Fedel (Layout Editor)*
*George Vitt (Image Editor)*
*Allen Bishop (Copy Editor)* □

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# Reminder MSSC Lapel Pins

Don't have your MSSC label pin yet? One inch high and highly detailed, the pins are three dimensional replica of a Bausch & Lomb monocular microscope, with the letters 'MSSC' impressed in the foot and are a great way to proudly display your membership of this great society!.

The MSSC lapel pins are being distributed at no charge to all Members of Record for fiscal year 2002. For details contact
Dave Hirsch, Treasurer.
(310)397-8357 or
email: dave.hirsch@verizon.net □

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**Reply to Dave Hirsch, by Alan deHaas, continued from page 16**

have sought to collect the scarce and one hopes, even rare items, deserve support from those who know no better than to make it shiny! The argument is not against polishing as such, but rather against the disregard of the proper methods of securing factory equivalent finish. One should not make glossy that which was satin, or remove paint, just to show that the foot of a microscope is really brass. □