Journal of
THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA
Volume 9 Number 1 January/February 2004

WORKSHOP OF THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA

recorded by Herb Gold and written by Jim Soliday

Date: Saturday, 3rd January 2004
Location: Izzy Lieberman's Residence

The workshop began at 9:15 at Izzy's home with 22 members present. This month the notes were taken by Allen Bishop and Herb Gold, Herb was a bit late and took over the task upon arrival. The meeting started out on a rather sad note as Alan deHaas reported that our long time member Jerry Bernstein passed away one week earlier at the Veterans Hospital in Los Vegas. Jerry spent the last year and a half in the Los Vegas area so he could be close to his son. For any of you who do not know the name, he was for quite some years the operator of his own microscope sales business known as West L.A. Microscopes. He dealt strictly in used equipment and concentrated in the Leitz and Zeiss product lines. We do extend our sympathies to his family and will miss his good friendship. We were also informed by John deHaas that our Treasurer, Dave Hirsch was hospitalized in the Los Angeles Kaiser facility. He was admitted for a number of ailments and remained over a week for treatment. I have since talked with Dave and was pleased to learn that he is recovering. In recognition of Dave's contributions to this Society, it should be noted that he has served as the Treasurer for over 27 years. How's that for a super MSSC member!

This month the group gathered indoors as the weather remained a little threatening. As usual our good friend Bill Hudson provided the refreshments including doughnuts and coffee. The desk in the living room was covered with exhibits along with a few additional items in the dinning room, which were available for sale.

Announcements were made including the fact that our next lectureship meeting would be at the New Roads School and our speaker would be our very own Larry McDavid. Larry will be talking about the history and technology of sundials. He has prepared a PowerPoint program with close to 130 images. We look forward to this talk and expect to gain insight into the various types of sundials, which have been used around the world.

A discussion arose concerning potential problems with ebay and PayPal. Jim described to the group a recent problem that our good member, Dr. John Field had concerning ebay. It seems that a thief assumed his user name and email address making shady sales with the benefit of John's good feedback record. As a result, John lost his account and was forced to establish a new email address. Unfortunately, I wish there was a sure fired way to avoid this sort of thing but not being an expert in these matter we can only say to the user to be wary. In the mean time John would like all to have his new email address, change your address book to the following: John Field: jafdf@yahoo.com . The group also discussed difficulties with Internet payments. Larry McDavid pointed out that contrary to common belief, electronic International money transfers are not always instantaneous as most people thought. Finally, Jim described a big problem a friend had with PayPal that may cost him about

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$4,000 dollars. It seems he sold an item that was auctioned at $4,000 and after receiving payment through PayPal he sent the item off with confidence. After shipment, the buyer reversed payment, complaining to PayPal the item was not the one that was presented in the auction. This of course was not true but without contacting the seller, PayPal refunded the money. So the buyer got the instrument and the money back. This might not be so scary if it were not for the fact that it is almost impossible to contact PayPal and get a real person to work the problem for you. We will have to wait and see how this drama pans out.

At the last workshop it was announced that Dan Kile had finally gotten his book on the polarizing microscope published. Many of us have now had the chance to look through the book and can report first hand impressions. The consensus, without exception was that this was an absolutely beautiful publication and would end up being a classic in the field of polarizing microscopy. Information on how to obtain this publication was published in the last workshop account but for convenience I will include it again. Dan's book is entitled ***The Petrographic Microscope: Evolution of a Mineralogical Research Instrument***, by Daniel E. Kile (2003). This was a Special Publication No.1 and a Supplement to The Mineralogical Record, Tucson, AZ. The price is $20.00 and can be obtained from two convenient sources: The Mineralogical Record Inc. P.O. Box 35565, Tucson, Arizona 85740, (520) 297-6709, minrec@aol.com . It can also be obtained locally for the same price from Rick Blankenhorn, The Gemmary, P.O. Box 2560, Fallbrook, CA 92088, (760) 728-3321, rch@gemmary.com .

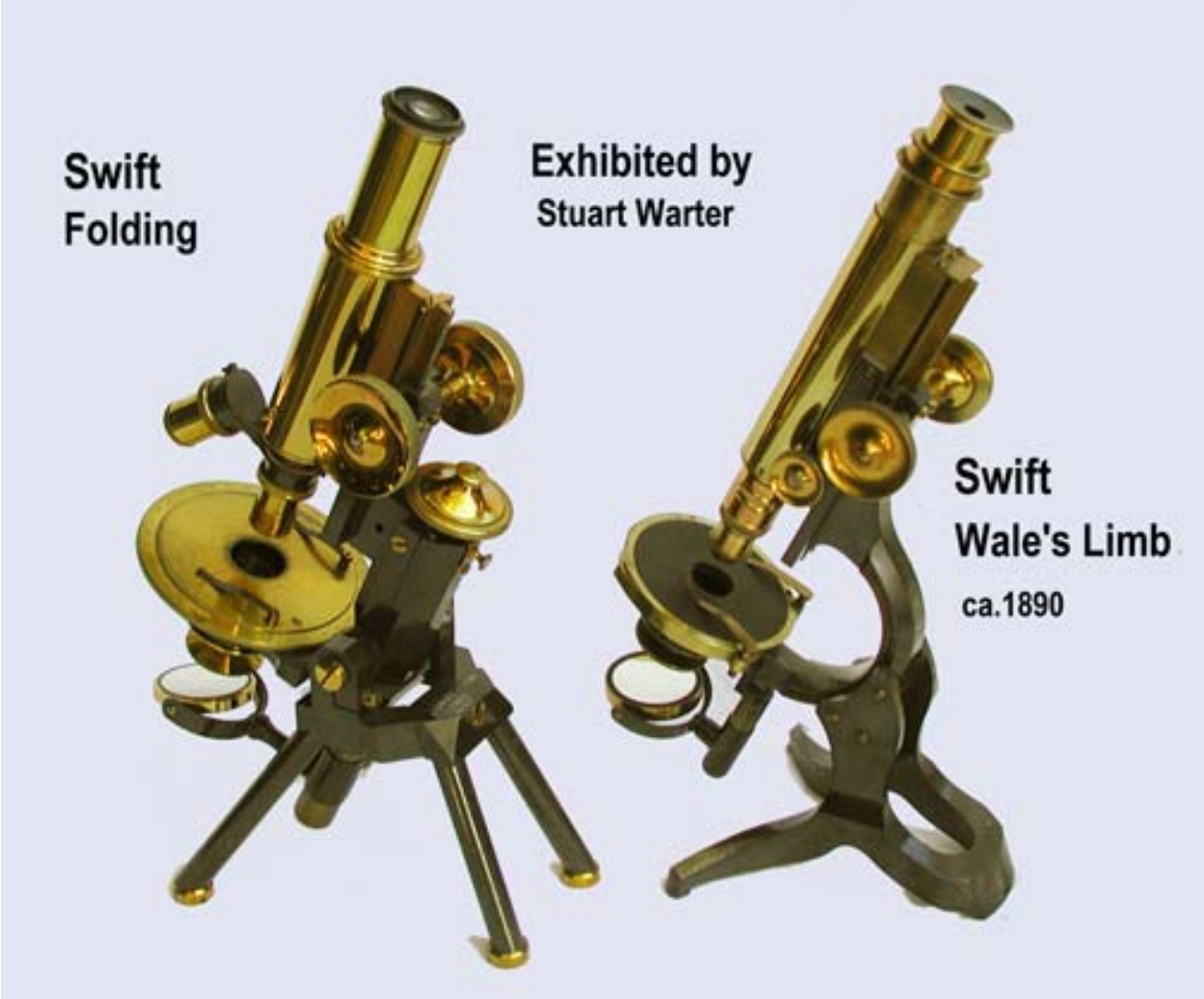
Ken Gregory exhibited a beautiful example of a Bausch & Lomb Universal Microscope; this was one of two instruments he obtained from the same seller on ebay. Last month Ken described his trip up North to pick up the microscopes and at the same time pay a visit with his sister. Both stands came quite complete with a great deal of

accessories. The older of the two was the above Bausch & Lomb Universal, which was made about ca.1894 and was the type having a Continental limb rather then the usual Gundlach design. This is sometimes referred to as a transitional model retaining the traditional tripod

foot but upgraded to include the Continental limb and fine focus. This model remains quite rare as it was only manufactured for a number of years.

The lacquered brass finish was in wonderful shape and the objectives were like new. There were 5 objectives and 5 oculars, the objectives included a number of Series 1, which were the best B&L made at the time. Other features included a beautiful mechanical stage, swinging substage assembly, Abby condenser, live-box and specimen holder. Of the greatest interest was the fact that two of the oculars were the solid eyepiece type, first invented by Tolles in the mid 1850's. In fact Tolles referred to them as "Holosteric" or solid eyepieces**,** Tolles invented them while working for Spencer. The patent date is Sept 25, 1855, U.S. Pat. No.13603, (Date is stamped on the original eyepiece). The solid eyepiece was manufactured much like the Coddington lens. The idea was to eliminate as many optical surfaces as possible. This was thought to be of value for the high-powered eyepieces, including magnifications of 20X, 80X and even 120X. As for the hardwood case holding Ken's microscope, all the holes were filled, which made for a very nice overall outfit. Both microscopes were previously owned by an engineer/chemist who worked for the Southern Pacific Real Road.

Izzy Lieberman continued the topic on difficulties he had experienced with ebay and PayPal. Again he emphasized the need for the buyer to beware. Izzy also described two very



nice microscopes that he was offering for sale. Both were sitting on the kitchen table and received a great deal of attention during the brake. The smaller instrument was a Leitz black and brass stand from the 1920's and the second stand was a large binocular made by the firm of Galileo Officina. This very attractive stand was likely made in the 1950 or early 1960's; see illustration for a better description.

Stuart Warter exhibited two very nice brass English microscopes made by James Swift & Son. The first was a Portable having a very interesting folding foot arrangement. It also featured a circular rotating stage that remained in good working order. This was complimented with a substage polarizer and built-in Nicol analyzer. It was exhibited next to a very rare and quite beautiful example of a Swift Wale's Limb microscope. This nice example was likely produced ca.1890 and remained in almost new condition. Stuart added polarizing attachments, which seemed to compliment the instrument.

Also featured on this stand was the Swift side fine adjustment, which was a rather new innovation at that time. The important feature associated with this microscope was the Wale's Limb or radial arm arrangement. This permitted the smooth inclination of the instrument at its center of balance and was not very susceptible to undo ware. The curved "C" shape of the limb was the key to this important feature and was held in place by adjusting a large screw that controlled the tension or separation of the up-right English Foot. The top of the foot acted like a clamp holding the limb in what every position the user desired.

Allen Bishop exhibited a very nice example of a Bausch & Lomb Physicians Model. The first thing one noticed was the large and distinctive Gundlach foot. This is very diagnostic of many of Bausch & Lomb's 19th Century stands. The next feature of interest was the think all glass stage with its gliding slide carrier. The eyepiece featured a rectangular groove, which held a micrometer slider. This is a rather rare microscope and was manufactured in the late 1880's or early 1890's. The overall condition was quite nice with its all black foot and lacquered brass finish.

Jim Solliday exhibited a very complete example of the Universal Polarizing Microscope by Cooke Troughton & Simms, Model No.M7250. The serial number was M701843 and the Patent number was 525970. This stand was made in ca.1950 and represents their top of the line Petrographic stand with every possible adjustment. It features a binocular body on an adjustable sliding dovetail limb, allowing for added space between the objective and the stage. This feature is primarily intended for the use of the universal stage (not present). Course focus is by rack and pinion but the fine movement is applied to the nosepiece only. The fine adjustment is very delicate having a similar action as the American Optical instrument. The nose can be centered with sliding objective carriers, seven (also centering, with RMS threads). Below the stage can be found a graduated polarizer, which can be swung in and out of the optical axis. The stand pivots on a large joint having a clutch to secure the angle of inclination. There is a large graduated circular rotating stage, including clips and an attachable mechanical stage. The entire stage assembly can be moved up and down by rack and pinion permitting the observation of large specimens. Corrected substage condenser (N.A. 1.30) on rack and

pinion with the accessory components able to be individually swung in and out of the axis. The swinging components include the polarizer; two filter holders and the auxiliary (high-low) lens. Illumination is provided by double-sided mirror (with hold tight screws). The stage assembly and substage apparatus can be slid off the stand on dovetail, conveniently adjustable. Optics include: 95X 1.8mm-oil, 40X 4mm, 20X 8mm, 10x 16mm, 5X 25mm, and a 3X 33mm. Also included in the case is a Leitz 10X and a 25X both strain-free objectives. Eyepieces include: a pair of 9X, pair of C.T.S 7X one having cross-hairs and a pair of WF10X by Technical Instruments. Accessories include, Quartz wedge (C.T.S), ¼ wave compensator, Gips rot I 1st order red, two eye-tube caps, pin-hole stop, dark-field stop, Rheinberg stop, three filters, one first order plastic filter, two stage clips and one Cooke Troughton & Simms Catalogue (1950). All the above are stored in a large beautifully finished and fitted mahogany case with lock and key.

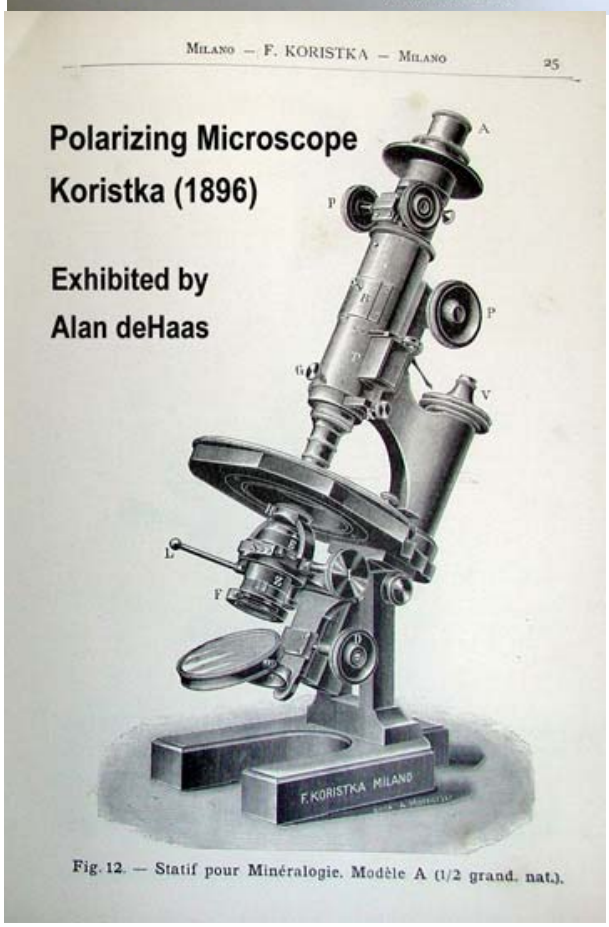
Jim also offered for sale a box of 18 histological slides, which contained a few examples of human tissue. Also on the table was a chine's 40x (0.65) phase objective, which was part of a set obtained off ebay. Jim tested one of the Chine's phase objectives against an Olympus and Zeiss and found it to be quiet inferior.

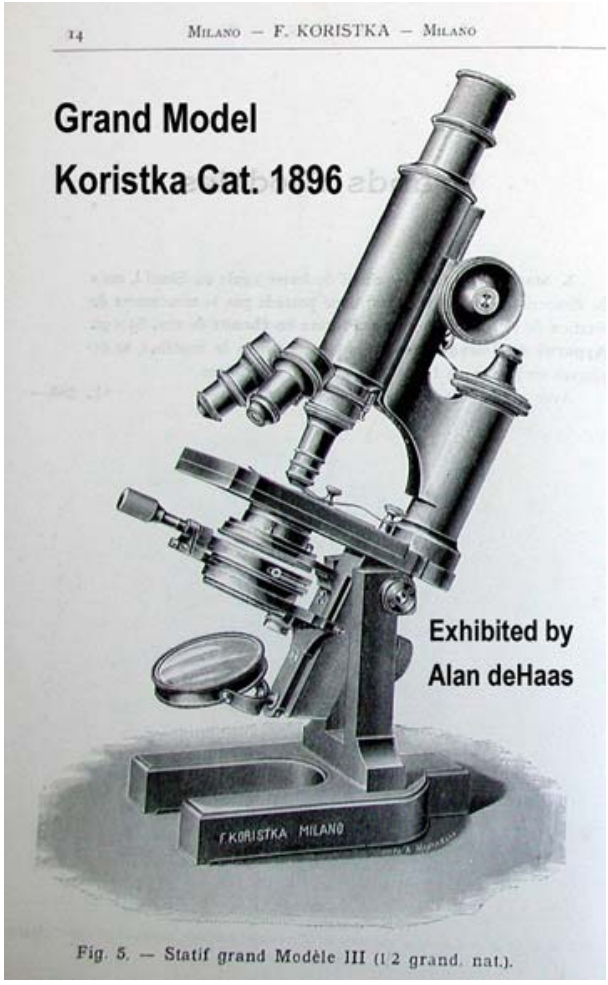
John deHaas offered to the group a very nice Winkel Zeiss, which he said, was available for sale. He also kindly invited any interested member to come to his apartment for additional sales opportunities. Jim recommended this as a visit to John's place is often very rewarding.

Alan deHaas described to the group a very rare Catalogue published by Koristka (1896), which he obtained from a proper dealer and not eBay. Alan also offered for sale several condensers, one for low power and quite valuable, it was usable


20 MILANO — F. KORISTKA — MILANO
Koristka Catalogue (1896)
Exhibited by
Alan deHaas
F. KORISTKA
F. KORISTKA
Fig. 8. — Statif Modèle moyen VI (1/2 grand. nat.).
Fig. 9. — Statif Modèle moyen VII (1/2 grand. nat.).

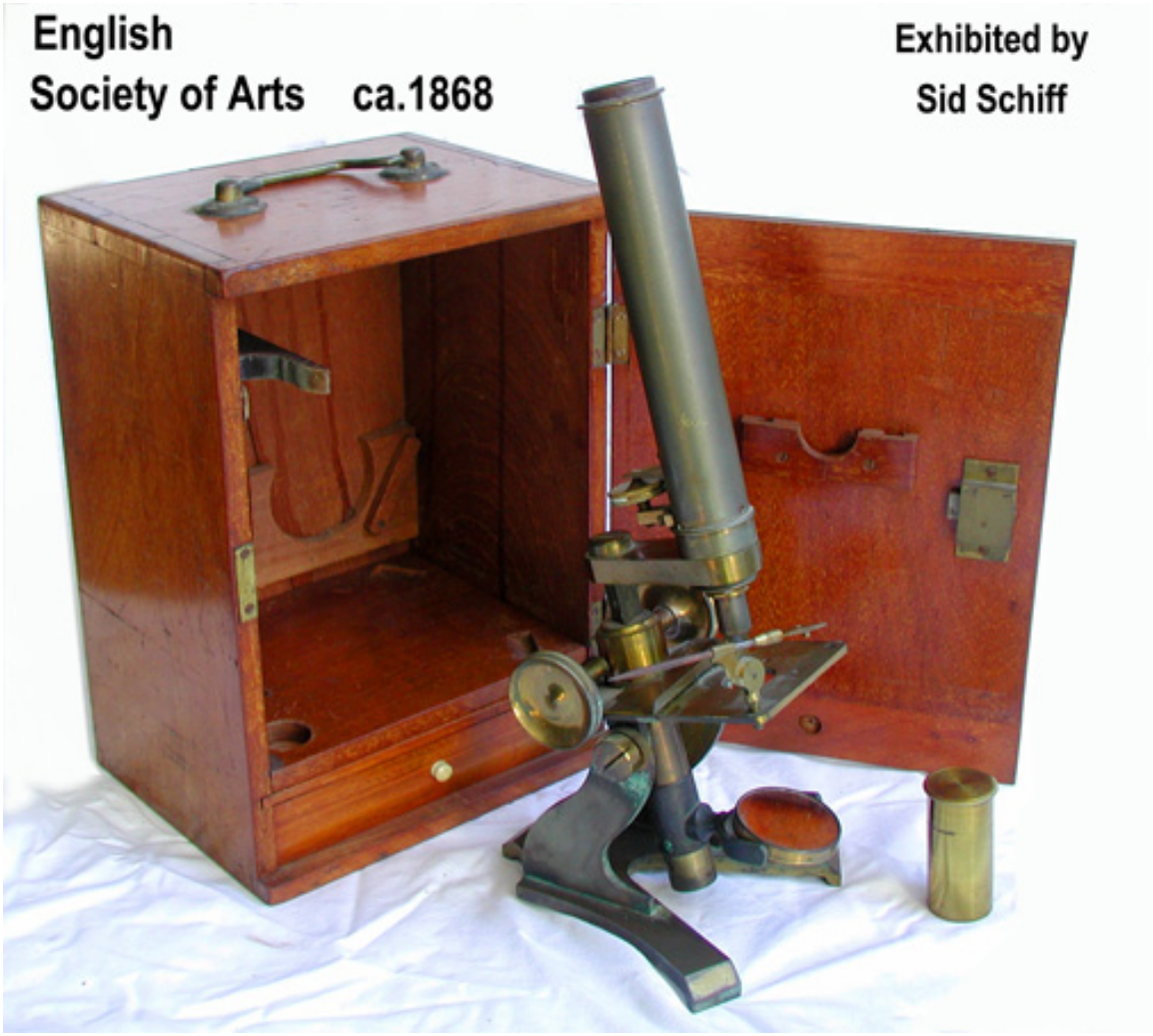

INSTITUT OPTIQUE ET DE CONSTRUCTIONS MECANIQUES
F. KORISTKA
Construction
d'Intruments de Micrographie
MILANO
2 - Rue Giuseppe Revere - 2
Catalogue Illustré Descriptif N. 8
1896


MILANO — F. KORISTKA — MILANO 25
Polarizing Microscope
Koristka (1896)
Exhibited by
Alan deHaas
A
P
P
V
F
F.KORISTKA MILANO
Fig. 12. — Statif pour Minéralogie. Modèle A (1/2 grand. nat.).


14 MILANO — F. KORISTKA — MILANO
Grand Model
Koristka Cat. 1896
Exhibited by
Alan deHaas
F.KORISTKA MILANO
Fig. 5. — Statif grand Modèle III (1/2 grand. nat.).

with the B&L microtessers. Of primary interest was a very special Zeiss stage, which came from a microscope used for the measurement of the motion of cells or particles in a controlled electric field - the measurement of electrophoresis.

The electric field was established between platinum electrodes and maintained across the liquid contained in the level fixed-in-place cell. As can be seen from the photo, the cell was held with the optic axis horizontal. I assume that the jar of finely divided quartz powder



meter to be inserted into the tube of the microscope. The adapter is the same diameter as a normal eyepiece.

This stimulated a great deal of discussion on digital cameras and their potential use with microscopes. It was recommended that at some time in the near future we schedule a workshop in this subject.

Sid Schiff exhibited a good example of a small English bar-limb microscope. This particular instrument was of the Society of Arts pattern and came stored in its original hard wood case. The signature on the scope was by J.H. Steward of 457 W. Strand, London. A few of the features that deserve mention were the short-lever fine adjustment, one-sided mirror and the distinctively shaped uprights, which are typical of this type of microscope. Included with the instrument was a divisible objective, eyepiece, live box and a few slides. This design originated in the early 1850's when the Society of the Arts offered a prize to the maker who could come up with the best design for the sum of three guineas. Robert Field was awarded the price and was obligated to then provide the instrument for the above sum for a number of years. Soon thereafter most of the other English makers offered their own version of this patter for a reasonable but usually a bit higher price. You will find this design was available to the public for about forty years lasting from about 1855 to 1895.

Pete Teti talked about ways of increasing the size of our membership; he proposed that the hands-on workshops be made a monthly event. Pete has been patiently working to set up educa-

tional workshops by establishing a list of skilled instructors. Ideas that were talked about were classes on fibers, mounting diatoms, digital photography, gram-stain and bloodstaining. Alan deHaas proposed that members bring in projects that they are working on. He made a commitment to be in the classroom every 3ed Saturday for a session of hands-on instruction. Ken Gregory suggested that we incorporate more hands-on activity in place of some of the usual lectureship meetings.

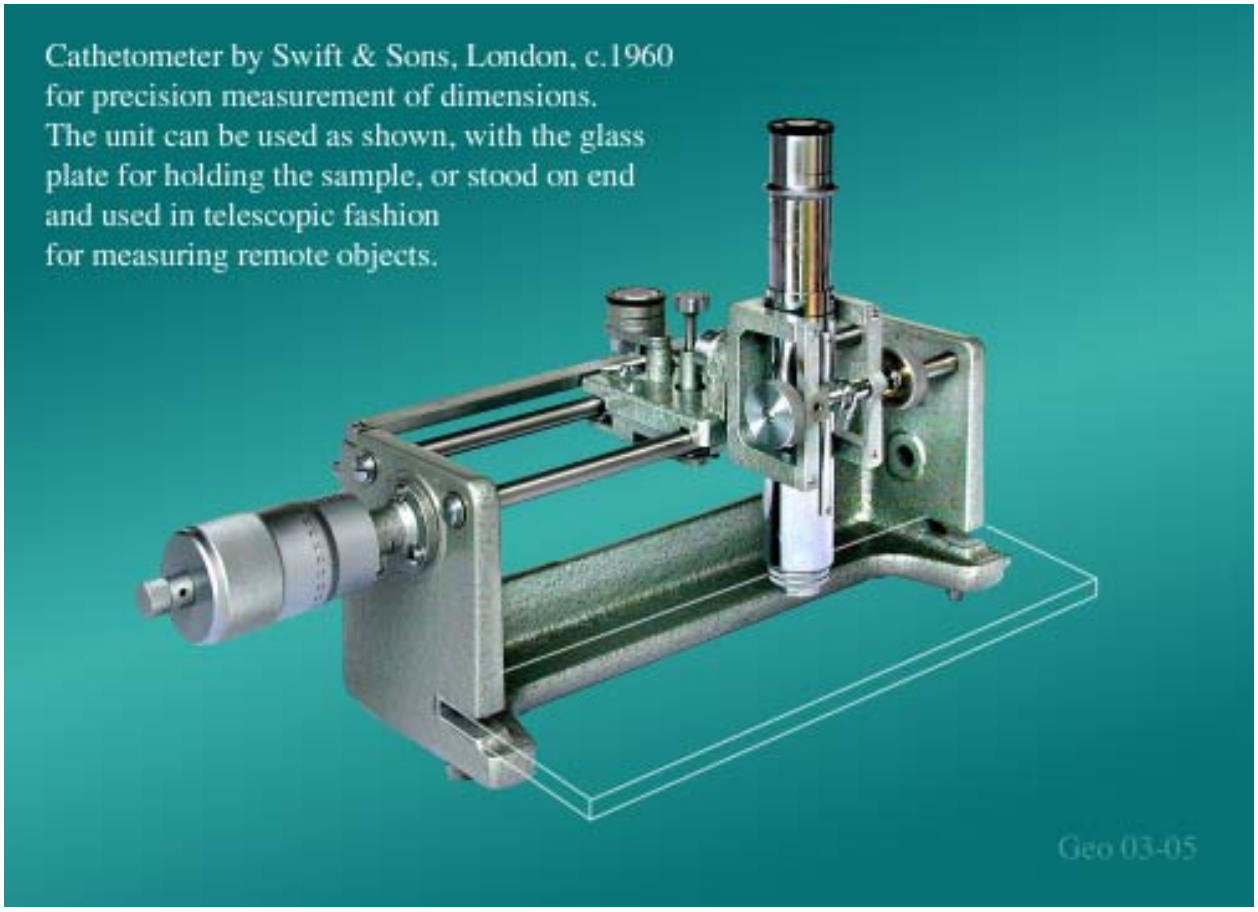
Larry McDavid reminded the group that Spirit would be landing tonight on Mars at about 8:30 PM. A discussion then followed on the success and failure of the on going Mars projects. There was much excitement on the prospect of receiving good images from the Martian surface. It should also be said that Larry will be giving this months lecture at the Wednesday meeting, the topic will be on the history of the sundial. Larry then exhibited two rather small Spinthariscopes. The first was an example of the original and the second was a modern version. The original was made by W. Crookes in 1903 and according to Larry performs much better then the newer one. Larry told the story of how Crookes spilled a valuable supply of radium on the lab floor and in order to retrieve the tiny bits he devised a screen or primitive Spinthariscope to help him find the samples. The modern instrument was made by United Nuclear and was called the Super Spinthariscope. The basic idea of the device was to permit the viewer to see the action of radium particles. If you wish to seen the action the eye must first become accustom to darkness.

The President brought the meeting to a close at 11:45AM leaving plenty of time for photographing the exhibits. Jim thanked all the members for their participation and reminded the group that there would be a gathering at the local Coco's Restaurant for lunch.

MSSC Monthly Meeting

Wednesday, January 21st, 2004
at New Roads School

This month MSSC member, Larry McDavid, presented a program entitled *"Sundials: Prehistory to the Digital Age."* In addition to being an MSSC member, Larry is also a member of the North American Sundial Society, which - along with the British Sundial Society - actively promotes the study, development and construction of these light-operated calendar and time instruments. Larry discussed the history and science of dialing and showed pictures of many sundials throughout the world. Memebers were invited to bring along their dials or other solar instruments for display and discussion. Larry's talk was supported with a PowerPoint presentation of 120 slides illustrating the subject. □



WORKSHOP OF THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA

recorded by Herb Gold and written by Jim Soliday

Date: Saturday, 7rh February 2004
Location: Izzy Lieberman's Residence (15 present)

The workshop began at 9:06 at Izzy's home with fifteen members and two guests present. On this rather chilly February morning the group gathered indoors in order to avoid the need for a heavy coat. As usual we were treated to an abundance of wonderful refreshments including doughnuts and coffee. The desk in the living room was covered with exhibits along with a few additional items in the dinning room, which were available for sale. Announcements were made including the fact that our next lectureship meeting would be at the New Roads School and rather then our usual guest speaker we would instead set up tables and conduct a sales and exchange meeting. Jim did announce that there would be a short slide show on the techniques for making chemical crystal slides. Photomicrographs illustrating a variety of chemical mounts would be presented. Jim was also pleased to announce that our Wednesday Lectureship meeting would be attended by a group of microscope maintenance fellows who were scheduled to be in the Los Angeles area for there annual convention. This fine group promised to bring with them a large variety of microscope accessories and equipment,

which would be included in our sales setup. This year the group's convention was organized by Mr. Bill Hatchar, the owner of Laboratory Optical Service in Abingdon, Virginia. We look forward to there visit and hope to have a very successful Wednesday meeting.

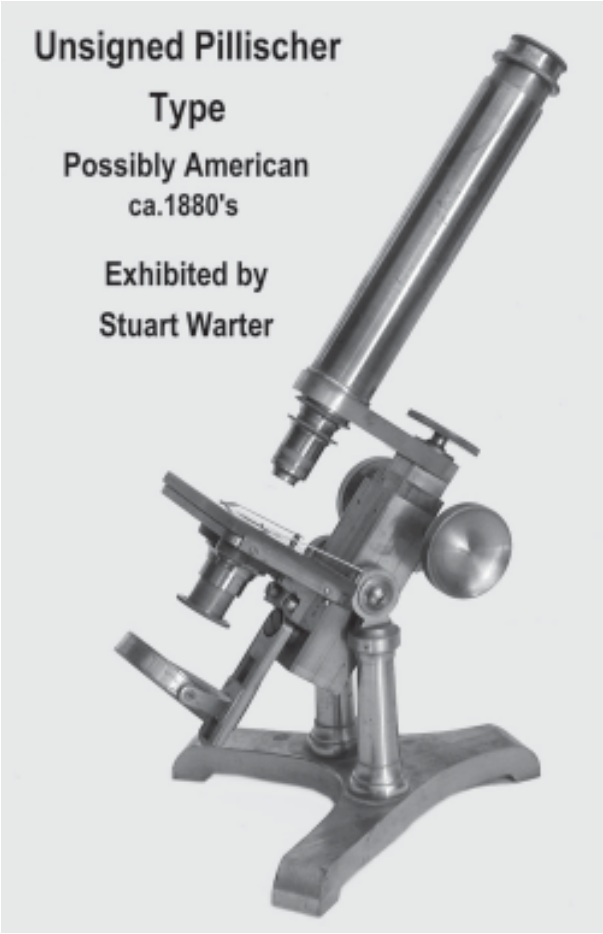
Jim informed the members that there would a change in the up coming Saturday morning workshop schedule. The group would meet again next month (March 6th) at Izzy's place, then the next three workshops would be held at Ken Gregory's home. This arrangement was needed to accommodate the fact that Izzy would possibly be out of town during the usual meeting dates. For the record the meeting place for the months of April, May and June will be at Dr. Gregory's house. Jim next reminded the group that he had received the resignation of our long time treasurer, Dave Hirsch, and that the officers had approved the appointment of our good friend Herb Gold for the position. We all realize just what a difficult job the treasurer has and we unanimously express our appreciation and gratitude to Herb for his commitment.

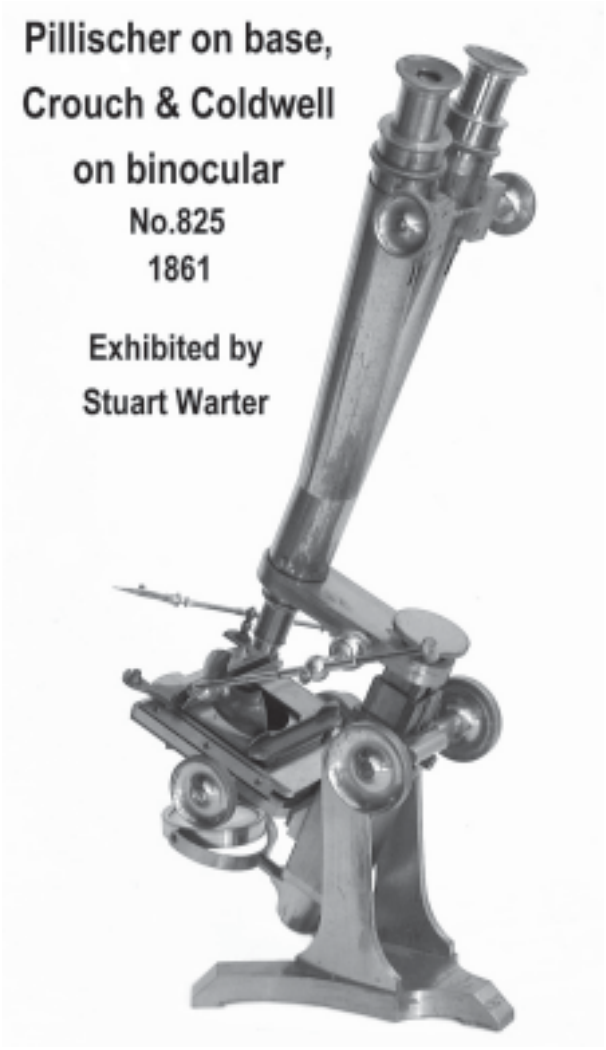
Other announcements included a reminder that on May 5-7, 2004 would be the PhotoImaging & Design Exposition, which would be held at the San Diego Convention Center. Many of the top digital photographers in the country will be speaking and the amount of knowledge that will be dispensed in a few short days will be priceless. Additional information can be obtained from the website of www.PhotoImagingandDesign.com or you can call 800 827-8009. Not only will there be a large digital trade show and keynote speakers but there will be informative panel discussions, hands-on workshops, mentoring programs and networking events.

Jim then reminded the group that our Society was invited to contribute to the Biology Image Library. The Biology Image Library is a new way to publish your quality digital images, movies and animations online. This organization is designed to help communities share and distribute visual resources and to make them available for non-commercial purposes. This library is a subscription service, with image providers receiving a share of 10% of the subscription income according to how many images each provides. Subscribers can download and use as many images as they need, as often as they need. Each image in the library is carefully annotated so users know exactly what they are looking at and can search for just the resource they need. This service can indeed be a great help to lecturers, teachers, researchers, students and members of the media. The library welcomes submissions illustrating biological and biomedical images that are artistic, scientifically meaningful and or insightful. The format can be of almost any of the usual file types, including PDF, TIFF, JPEG, BMP, GIF or even Power-Point. If you have questions or would like to contribute media of your own, you can contact Chloe Williams, BioMed Central Ltd, Middlesex House, 34-42 Cleveland Street London, W1T 4LB. Email: chloe@biomedcenteral.com . The library prefers information to be sent on a CD or DVD.

John deHaas set up a stereoscope in order to exhibit a beautiful mineral display, the sample was of the mineral Mimetite. All the attending members got to spend some good scope time studying this beautiful exhibit. Mimetite shares the same structure with apatite and occasionally crystals of the two will have similar shapes. John says that the composition of Mimetite is of arsenic, lead, chlorine and oxygen, with a molecular weight of 1,488.21 gm. We were also informed that John just had his 85th birthday, we all do wish him a very happy birthday.

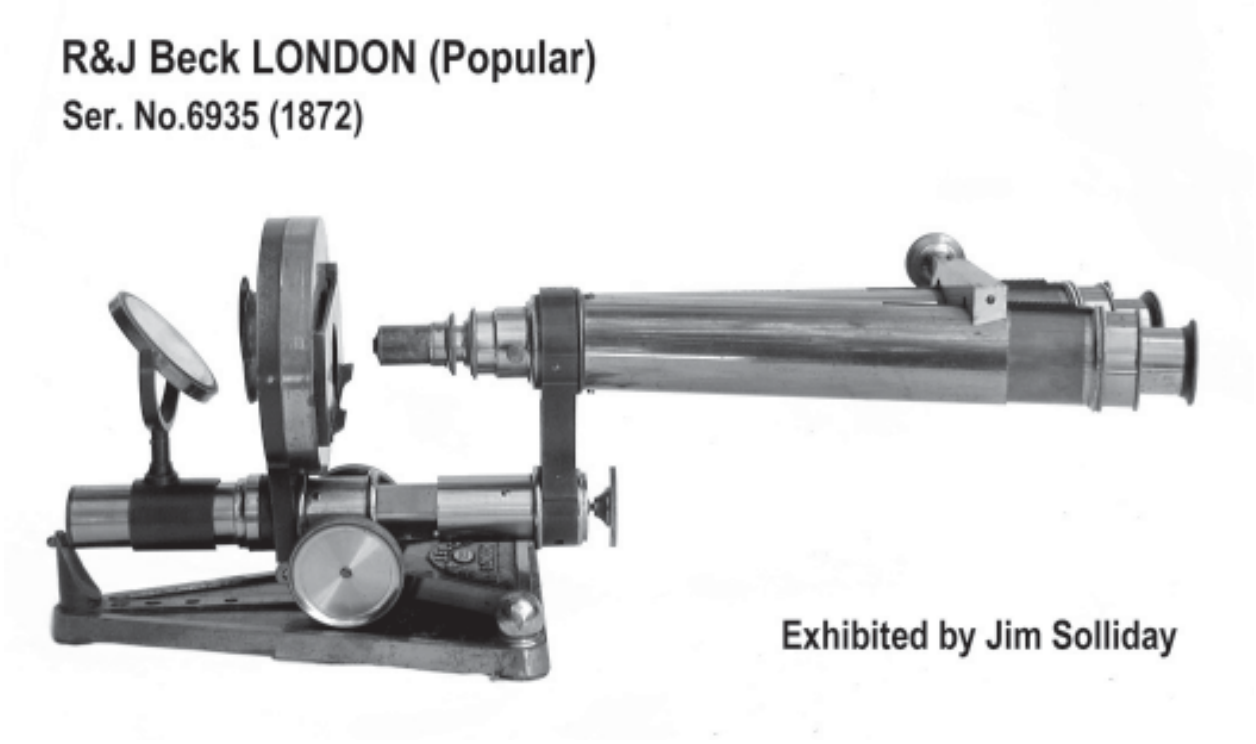
Stuart Warter exhibited a very rare unsigned brass microscope that was similar to the English Pillischer types. Stuart pointed out that the focusing device was much the same but that it very well could have been a hybrid made up from other instruments. Even though it had twin pillars and many of the Pillischer features he felt that it could actually be American made, with the date of manufacture to be in the 1880's. The square





limb was quite Pillischer but the stage, substage, body-tube and foot all pointed to something quite unique. Stuart also exhibited a true Pillischer for comparison; this instrument actually had two signatures, which was not all that uncommon in the second half of the nineteenth Century. Quite frequently owners would submit their instrument to a maker to be refitted with a binocular body-tube. This is in fact the case with this particular stand, as the foot is signed by Moritz Pillischer and the Wenham binocular tube is signed by Crouch & Coldwell. Other important features include the mechanical stage, which Pillischer patterned after the Edmund Turrell design. The date of this microscope can be placed at about 1861, as this was a known window of time for Crouch instruments to have the signature of Crouch & Coldwell. There is recorded a Crouch & Coldwell on exhibited at the British Association for the Advancement of Science held in Manchester for the year 1861.

Jim Solliday exhibited a rather complete example of an R&J Beck Popular (1872). The signature read as follows; *R&J. Beck, LONDON. Ser. No.6935*. This model was sold as Beck's "**Popular Microscope,**" it was first introduced in Dec. 1864 when the firm was still known as

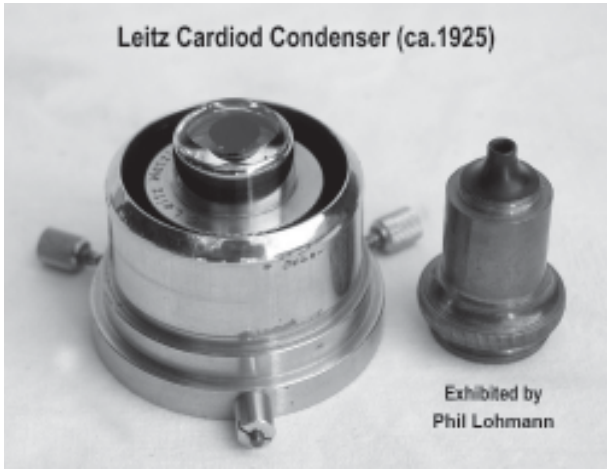


Smith, Beck & Beck. It was manufactured at the Lister Works, Upper Holloway, London. A second signature has been engraved on the body tube, "**J.W. Queen & Co., Agents, Philadelphia & New York.**" From 1870-1877, Queen was the American agent and importer for R&J Beck, this microscope being a good example. The instrument is of a very unique design being a folding type but yet of a full size. The basic arrangement is of the bar-limb type with a Wenham binocular body. The binocular tube has a milled head and dual rack work for adjusting the separation of the eyepieces. Beck's Popular Microscope sits on a triangular foot, which has four holes bored along the central axis intended to accept a pin extending from the base of the stem. The limb is connected to a tapered stay or plate, which pivots on centers at both the top and bottom. The inclination of the instrument depends on the selection of the hole the stem pin is placed. When the instrument is folded flat the pin fits into a tapered stud mounted to the front end of the triangular foot. The double-sided mirror is mounted to the stem by the usual sleeve. The Binocular body is carried on an oxidized arm; this being attached to a square bare which is moved up and down by rack-work and pinion, operated just above the stage. The bare fits into a cylindrical sleeve, which also holds the circular stage. Fine adjustment is provided by a milled head mounted to the top of the limb and above the bare. Mounted to the underside of the stage is a wheel of stops, the slide holder is provided with a ledge (the small spring is missing). The slide holder is secured to the stage plate by a spring mounted inside the stage itself. This holder can be smoothly moved about the stage with one hand. The microscope is stored in its original fitted mahogany case. The accessories include two sets of eyepieces (total of 4), high power and low, each set having a pointer mounted within. One of the higher eyepieces has a slot for holding the adjustable micrometer. The lenses include one Beck 1/4 inch, an M. Pillischer 1 inch, a Hartnack 1/9th inch - No.8 in its brass can, also a No.7 Hartnack brass can without lens. There is a RMS

thread to Hartnack thread adapter as well as a double nosepiece (No.123) signed by R. Jung. One Lieberkuhn along with the substage dark cell (for Lieberkuhn). One Camera Lucida and a Wenham Paraboliod dark-ground illuminator. An RMS female threaded condenser sleeve and the Beck achromatic substage condenser (with RMS thread). One Nicol polarizing condenser and an eye-cap Nicol analyzer. One vial with mounting media and two paper wrapped slides, one is a 1/1000-micrometer slide. Accompanying the instrument is a letter from R&J Beck, dated Dec 7, 1965. This was a response to an inquiry from Mrs. Ruth Parker, the daughter of the previous owner. Her father was a doctor and is said to have purchased the instrument at the turn of the century.

Following Jim's presentation there was a long discussion about Mr. Wenham and the introduction of the Wenham binocular system. Much was said about his life and the many contribution he made to science, including the Wenham parabolic dark-field condenser and his life long work on the development of the steam locomotive.

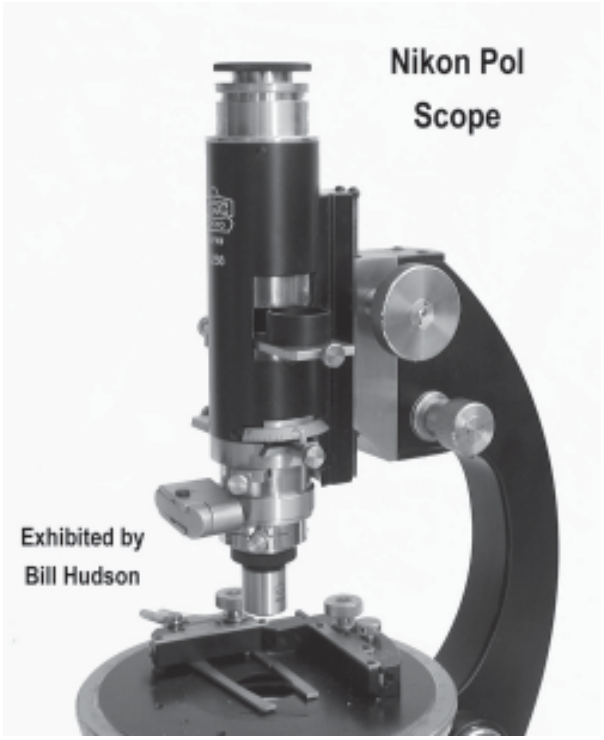
Phil Lohmann exhibited two interesting and quite rare Leitz accessories. The first was an early Leitz cardiod dark-field condenser with its stop for high power objectives. The second was what seemed to be a Leitz compensator for a



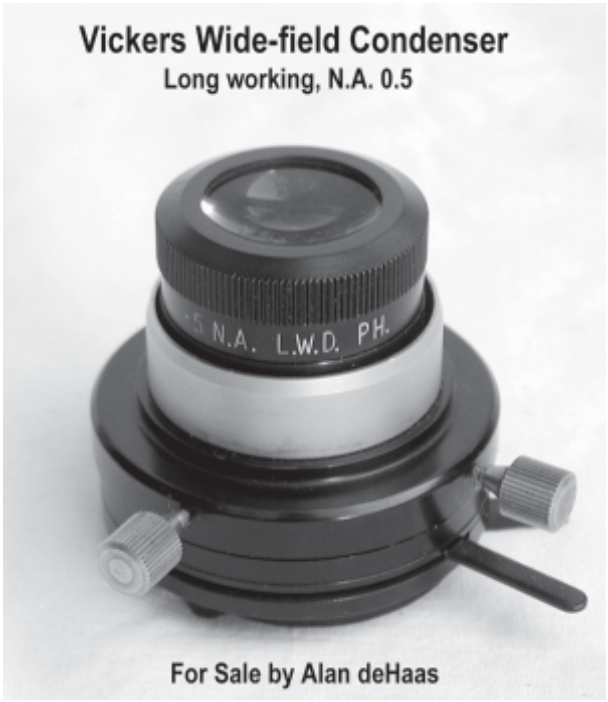
polarimeter. See the picture for better description. Both items came stored in their original leatherette boxes and were in good condition.

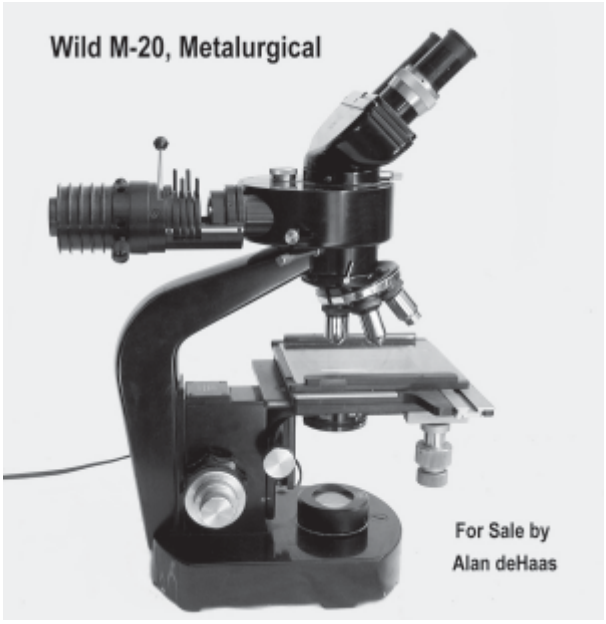
Allen Bishop exhibited a beautiful Zeiss accessory box with a number of eyepieces and objectives. In this case they were compensating eyepieces and apochromats. There were also a number of very low power projection oculars, which were said to be used as "searchers".

Bill Hudson exhibited a very well built early Nikon polarizing microscope said to be on the market prior to 1960. A few of the members felt this scope was made in the mid 1950's. The overall appearance was black and chrome and came stored in a well-fitted case. The scope included a Bertrand lens with diaphragm, compensators, which were fixed in place but could be moved out of position. The objectives were held in place by what looked like very unique and proprietary centerable mounts. Also, included were three large diameter oculars with one adapter for the use of the smaller normal sized ocular. There was also a very nice removable mechanical stage. This pol scope was bought from Jim Clark who it seems originally obtained it from our good friend, Barry Sobel.



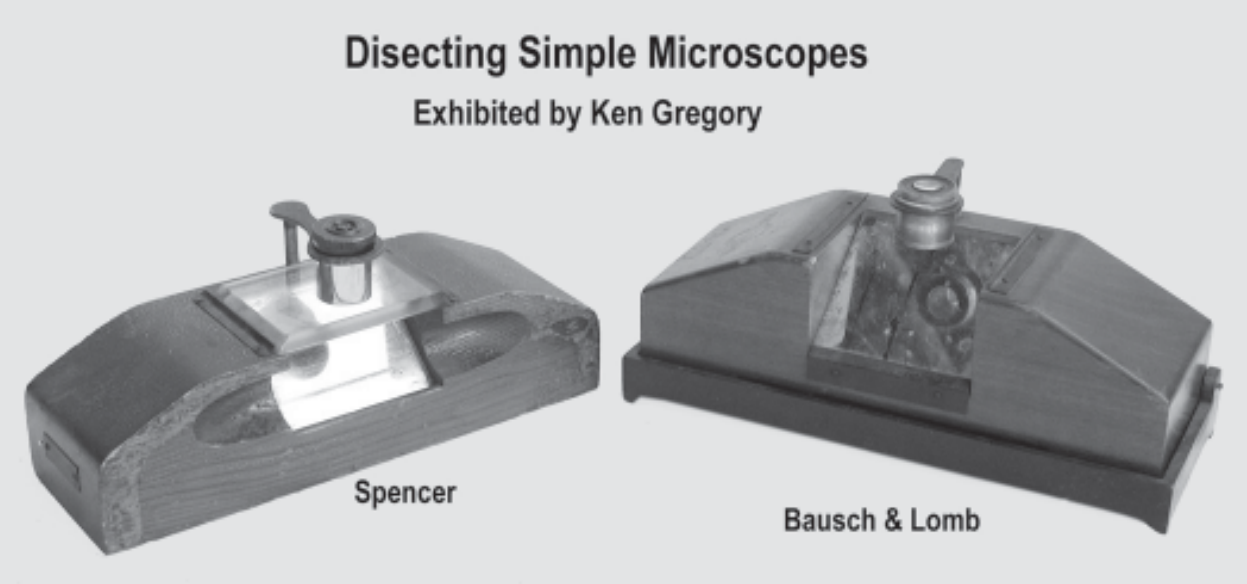
Alan deHaas announced that he had available a number of nice items for sale. These included a very rare Vickers low power condenser (N.A. 0.5). This was intended to be used with a ½-inch, wide-field phase objective, the sleeve diameter was 33mm and it was said to provide very even illumination. Also available for sale was a Wild M20 microscope and a rare Lomo water immersion 63x 0.85 N.A. objective. See Allan for additional information and prices. Allan then answered a few questions associated with the new PlasDIC system (described by Zeiss). He indicated that the special condenser used was probably made of a slit and produced a shearing image. He also discussed the "double" N.A. condenser.





Randy Blohm brought up a question about the Zeiss PlasDIC technique. Randy has the proper DIC prism that slides into place above the objectives on his new Vanox; however, he is without the proper condenser. His efforts to understand the PlasDIC have revealed a number of interesting opportunities for using the Nomarski prism he already has.

Under the conditions of transmitted light, the normal Nomarski interference system often runs into difficulties when a "plastic" petri dish is used. This is due to the fact that the first polarizer is below the condenser providing linier polarized illumination. The plastic of the specimen dish will tend to de-polarize or in some cased create an offset image. The PlasDIC is arranged a bit different and eliminates this problem. The specimen is illuminated with natural (non-



polarized) light. The image forming light is not linearly polarized until just before the DIC prism (just above the objective). This is certainly in contrast to the usual transmitted light interference contrasting techniques. PlasDIC does not require a Wollaston prism in the condenser. Below the specimen and as part of the condenser a one-slit diaphragm is sufficient to produce a good shearing effect. The results are a good and high contrast interference image. This method is the first time polarization and interference have been combined in a way that the entire specimen area is located outside the polarization sensitive zone. Zeiss states that this system represents a new version of Nomarski's differential interference contrast and is ideal for routine observation of living cells and micromanipulation. A good example of its application is the growing service of ICSI or Intracytoplasmic Sperm Injection (reproductive assistance). I'm quite sure that in the future this technique will be applied to a large variety of industries including all cellular biology studies done in labs involved in molecular biology, Universities, pharmaceutical companies and hospitals.

Some of the advantages of the PlasDIC system are that it can be used with standard brightfield objectives. It is also convenient when the microscopist needs to change to a different magnification; there is no need to change the diaphragm in the condenser when going to a different objective. To set up the condenser for PlasDIC all you need is a coherence diaphragm, which is a very thin slit usually off center. Above the objective you will need a polarizer attached to the bottom side of the DIC prism (Wollaston). After the reference beam is combined with the primary image (above the prism) there needs to be an Analyzer. This limited area above the objective is the only area sensitive to polarization. The final image is almost identical to Nomarski Interference Contrast.

Ken Gregory exhibited two rather simple dissecting scopes; one was made by Spencer and the other by Bausch & Lomb. The 1914 Spencer Catalogue refers to this instrument as Spencer's Dissecting Microscope No.86. It was intended for elementary dissecting work and came in four variations. There was the 86A, 86B –C & -D, each with consecutively better accessories. The A came with a single 9x doublet, the B had a 6x and a 12x doublet, the C had a triple aplanat lens and finally the D came with a 6x and a 12x triple aplanat set. The instrument is low on the table and made of wood having a nice finish. The top sides are inclined at either end to provide comfortable hand-rests. The stage is composed of a glass plate, underneath having a large angled mirror. The block is hollow beneath and back of the mirror forming a convenient receptacle for

dissecting tools and the lenses. A door that is hinged at the lower edge of the block closes this chamber. The lens itself is held on an arm, which permits movement from side to side and provides for focusing. Normally, a black and white metal background is furnished with each instrument. The B&L is known as the Barnes Dissecting Microscope and was designed originally by Professor Charles R. Barnes. Like the Spencer above, it is a simple instrument and well suited for classroom and elementary applications. The main body is also made of solid wood and is shaped to form hand rests at both ends. Normally there is a glass plate for the stage and can obviously be removed for cleaning. The mirror is set at about a 45-degree angle and provides very effective illumination. If present a black and white metal plate can be laid over the mirror when a certain background is desired. Like the Spencer the lens is carried on an adjustable arm that permits convenient focus. Around 1905 B&L added a hinged wooden base that allowed the user to swing the instrument open providing access to receptacles holding important tools including a magnifier, tweezers and dissecting instruments. The usual lens is a doublet but B&L also provided a Coddington or triple aplanat lenses. Ken also exhibited a very nice mid 20th Century Leitz Jug-handle surface microscope. This scope included a smooth coarse and fine adjustment. It came in a beautiful black and chrome finish and was light enough for comfortable use. It was used in museums, art conservatories and any situation requiring the need to closely study the surface of an object. It could also be used for high power and detailed dissecting work. Finally, Ken demonstrated how to determine the dominant eye.

Larry McDavid was our last contributor and kindly read for the group a number of beautiful Sundial Motto's.

The President brought the meeting to a close at 11:48 a.m. □

MSSC Monthly Meeting

Wednesday, February 18th, 2004
at New Roads School

This month's meeting was a swap-meet where members could bring items for sale. There was also be a brief presentation on chemical crystal mounting and preparation techniques. □

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MSSC Hands-On Workshop

Wednesday, February 21st, 2004 at New Roads School

Instructor, Alan deHaas "Detecting Physical Flaws in Microscope Objectives"

On the third Saturday of the month Alan held a workshop on the detection of physical flaws in an objective without the use of a microscope – just visual training – the necessary equipment being a distant source of light and a magnifier, of which there were a sufficient quantity for all who attended. Herb Gold brought lenses with decemented rear elements, arborescent decementation, peripheral decementation, crazing, et cetera. There were also objectives with front element problems; chips, pits, decementation, scratches from use and from improper cleaning. All flaws were visible, some easily, some with difficulty, some user generated and, unfortunately many manufacturer caused.

Aside from Alan, five others were in attendance. Alan will continue to hold demonstration and Q&A workshops on the third Saturday of very other month until there is either a sufficient number present to make the workshops self-sustaining, or the number in attendance dwindles to one. For those who would wish specific data or a demo please email Alan at (310) 475-2873 or e-mail microscope@comcast.net. If possible a demonstration will be arranged to suit. □

MSSC Monthly Meeting Announcements

7:00pm, March 17sh , 2004

At this meeting, Larry Albright will give a presentation on his latest African photo Safari. After this, Alan deHaas will give another talk in his lecture series on the technology of the microscope, this one focusing on binocular optical systems.

7:00pm, April 21st, 2004

At this meeting, Dr. Shijie Wu will present a program entitled *"Scanning Probe Microscopy under Controlled Environments"*.

7:00pm, May 19th, 2004

The Pond Life program is undoubtedly one of our best attended and most exciting meetings! Members are strongly encouraged to bring pond water, ditch water, fountain water or anything that lives in water. Microscopes, illuminators and pipettes and tools to play in the water are required.

7:00pm, June 16th , 2004

At this meeting, Dr. Jack Green , Professor of Geological Sciences, Department of Geological Sciences, California State University, Long Beach will give a presentation entitled "A Semester of Optical Mineralogy in About an Hour." After a survey of light phenomena – Snell's Laws, critical angles and Brewster's Law, the details of the operation of the Nikon petrographic microscope are covered. A review of some thin sections introduces the student to basic vocabulary: analyzer and polarizer, mineral textures, relief, index of refraction, pleochroism, birefringence, retardation, etc.

All meetings are held at New Roads School . Optional dinner beforehand at Coco's restaurant at 5:30pm (near Ocean Park and Bundy, Santa Monica). □

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
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Los Angeles CA 90034-2714
(310) 839-9881,
email: editor@msscweb.org

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 will 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)
Allen Bishop (Copy Editor)
George Vitt (Image Editor)

MSSC Website

www.msscweb.org

The MSSC website offers a history of the Society, meeting and workshop schedules, journal archives, membership details, links to other microscopic resources on the internet, a news and events notification page and a seller's page. There are plans to add a catalog of the MSSC Slide collection. Keep your eyes on the 'What's New' page for details of new site additions. Some areas of the website (such as the Journal archives and membership lists) are only accessible to currently paid members. Members should send an email to Leonie Fedel editor@msscweb.org to request their username and password if they have not yet received one.

2004 Dues

Members dues are collected at the beginning of each calendar year for the period Jan to Dec. For 2004 the dues structure is:

$50.^{00}$ for Regular Members for 2004.
Regular Members are geographically advantaged and can attend meetings and workshops.

$40.^{00}$ for Corresponding Members for 2004.
Corresponding members reside in geographically remote areas and are not able to attend meetings. Corresponding members may also include disabled persons who reside geographically close but are unable to attend meetings and workshops.

Payment accepted in the form of cash or checks in US funds made out to "Herb Gold - MSSC".

Please remit dues to:

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email: herbgold@sbcglobal.net