Journal of
THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA
Volume 8 Number 2 March/April 2003

EARLY HISTORY OF THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA:

A Biographical Perspective, Part 1: 1949-1971

by
James D. Solliday
June 17, 1999 (updated January 2003)

Continued from the last Journal (V8N1 Jan/Feb 2003), here is the second part of Jim Solliday's Biographical Perspective on the early history of the MSSC.

LIST OF PAST PRESIDENTS, ALONG WITH BIOGRAPHICAL NOTES

To help clarify the succession of service by the early officers, I have prepared a list of the past presidents. In addition to this list, an effort has been made to personalize these individuals by accumulating a small amount of relevant information associated with their affiliation with the Society. The following list is in chronological order:

1937 Max A. Erb, acting President (The Microscope Group)
1941 James Smith, first elected President
1947 Major Arthur C. Hurt, Jr., second President
1948 Colonel William D. Fleming, third President
1949 Max A. Erb, fourth President
1950 William Sokol, fifth President
1951 Lloyd Matlovsky, sixth President
1971 John De Haas, seventh President
1974 Gil Mellé, eighth President

A great deal of the history of the Society was shaped by the lives and experience of these men. In turn, the lives of most of these men were shaped by their involvement in the Society. We do justice to these gentlemen by remembering them as individuals and honoring their contributions.

MAX A. ERB, Founder of The Microscope Group and fourth President

At the time Max Erb organized The Microscope Group (1938), he was working for the firm of Carl Zeiss at 728 South Hill Street. Due to WWII with Germany, the Zeiss operations in the U.S. were closed. Max then went to work at the Frese Corporation on microscopes for a short period. After this Max Erb and Milton Gray formed the firm of "Erb & Gray." For the first few years they were located at

Photo of the founder, Max Erb (1948)

854 So. Figueroa Street in Los Angeles. They successfully retailed instruments from a number of popular microscope makers. They even manufactured a line of their own equipment including the Erb & Gray microscope illuminator and the Erb & Gray measuring microscope. Max designed the microscope illuminator with the help of a German optical employee. As a result of his association with Los Alamos (New Mexico) and the Atomic Energy Commission, Max was contracted to design and construct a remote-control metallograph which was to be shielded from radiation. The instrument was delivered to Hanford, Washington in May of 1954. The installation of the metallograph was completed with the assistance of his senior service man, Ray Tomlinson. He also developed his own portable refractometer as well as the Visicam photomicrographic camera.

Eventually, Mr. Jack Norcross became associated with the firm and invested funds for expanding the product line into other types of scientific instruments. This included laboratory equipment, precision balances and even the Hitachi electron microscope. In 1951, William Sokol joined the firm just in time to see Milton Gray sell out his share of the business. At that point Mr. Carl McBain left UCLA and became involved with Erb & Gray. In May 1954, Max Erb sold out his

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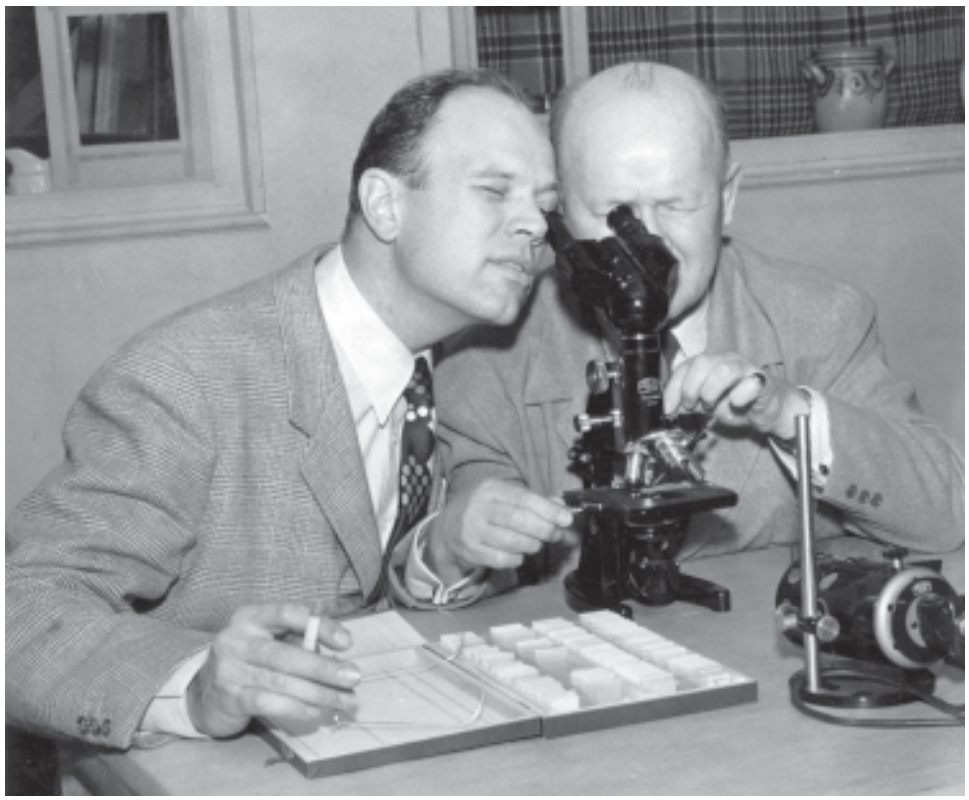
interest in the firm and the next day opened a new business, Max Erb Instrument Company on Olympic Boulevard in Los Angeles and at the same time obtained the B&L franchise. Eventually, the new business moved to Burbank, where it is located today managed by Max's son Ron Erb. Jack Norcross and Carl McBain continued to operate the firm of Erb & Gray. Assisting Max through much of his business matters was his attorney Arthur Hurt, Jr. In the course of time Arthur Hurt served as the second elected President of the Society. Arthur Hurt had a son, Curt, who became an ophthalmologist. Not only was Max Erb the founding father of the Microscopical Society and a successful businessman but he was also an avid gardener. He specialized in the husbandry of orchids.

After Milton Gray left the establishment of Erb & Gray he began distributing machine tools directly out of a large van. This provided some success until he died prematurely of a heart attack, as he weighed over 270 pounds. Milton had a reputation as an excellent machinist but had difficulty with business matters.

JAMES SMITH, 1st President.

James Smith was the first elected President of the Society and was well known for his work with diatoms and photomicrography. I have in my own slide collection examples of diatoms mounted by Mr. Smith. His mounts are excellent and very much like those of Mr. W. F. Herzberg and Mr. A. Brigger. I also have samples of beautifully cleaned diatomaceous material stored in vials with his label. In addition, we are fortunate to have a number of photographs illustrating his photomicrographic setup. He was also considered to be a staunch Zeiss man and was one of the few founding members who owned more than one stand. Like many enthusiastic microscopists, he converted a portion of his house into a working laboratory. He also set up a complete machine shop providing adapters and other parts to the members. His lab was famous among the members and many enjoyable meetings were conducted at his home.

Mr. Smith was president of the Hammond Lumber Company in Long Beach but lived in South Pasadena. October 12, 1950, was the last meeting that any of the members of the Society would see Mr. Smith alive. A few days later he died of a heart attack in his office at the age of 55. The date of his passing was October 17, 1950. This was a great blow to the organization since he was, for the most part, responsible for establishing the formal Society out of the Microscope Group. He continually served as an inspiration to his friends



James Smith demonstrating his Zeiss microscope to a friend (1948)

and, without any doubt, the Society greatly missed his leadership. In honor of his name, a memorial fund was established and the proceeds were contributed to the Children's Hospital of Los Angeles.

MAJOR ARTHUR C. HURT, 2nd President
COLONEL WILLIAM D. FLEMING, 3rd President

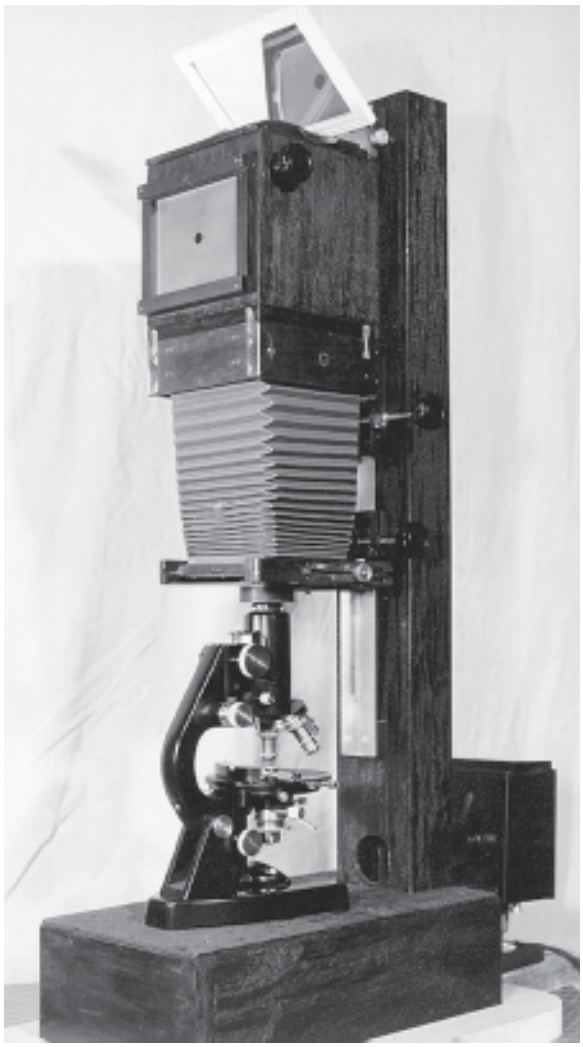
I am sorry to say that there is not much information available on Major Arthur C. Hurt, Jr. and Colonel William D. Fleming. The content of the early documents indicates that both gentlemen contributed significantly to the establishment and success of the Society. Arthur Hurt was Max Erb's attorney who lived in West Los Angeles and was a well-known member of the L.A. Country Club. He served as the first secretary of the Microscopical Society and meticulously typed out the minutes and correspondence. It is Mr. Hurt's signature that is seen on more of the early documents than of any of the other founding members. His expertise was in the field of hematology and many of his exhibits illustrated this subject. Both men presented a wide variety of lectures and demonstrations illustrating their extensive knowledge and experience in microscopy. It was during the presidencies of these two gentlemen that the Society experienced its most rapid and sustained growth (1947 & 1948).

MAX A. ERB, 4th President, see above.

WILLIAM SOKOL, 5th President

In my own experience with the Society I can truly say that Mr. William Sokol represented all that was positive about the early membership. He fulfilled the spirit and purposes for originally establishing such a Society. He spent hours of his spare time teaching many members the basics of cleaning and preparing diatoms. He freely provided materials including rare chemicals used in polarized light experiments. All of this was supported by his expertise in every format of Photomicrography. I do not remember a single time when he refused to share his vast knowledge or valuable experience. His enthusiasm for microscopy never flagged, and even in the last year of his life he won first prize in the Olympus Photomicrography contest. The technique used in this prize winning image was developed by a Southern California photomicrographer named Martin Folb (ca.1976).

Mr. Sokol was an active member of the New York Microscopical Society from 1934 until May of 1943. At that time the Society met in the American Museum of Natural History at Central Park West. He participated in the Society's courses and seminars which were provided by Professor Harry Taub of Columbia University. Prof. Taub, who presented the courses on Crystallography and Chemical Microscopy was later cited by Mr. Sokol



William Sokol's first photomicrography setup (ca 1947)

William Sokol (ca 1968)

as the inspiration for his desire to take color photographs through the microscope. While associated with the New York Microscopical Society, Mr. Sokol was influenced by a number of great microscopists, including Wolfgang Von Zieler who was at that time president of E. Leitz Inc. of New York. Mr. Von Zieler was also president of the New York Microscopical Society in 1939, during the time that Mr. Sokol was active. Another important individual acquainted with Mr. Sokol was Mr. Roy M. Allen, author of "The Microscope." Mr. Allen conducted seminars on photomicrography and micro-technique, including specimen preparation and rock sectioning.

Mr. Sokol's continued interest in diatoms was first inspired by Mr. Joseph Burke who for many years worked at the Staten Island Museum. Mr. Burke is a well known diatomist who has devoted most of his life to the study of North American diatoms. He organized the diatom study group for the Society and, in addition to presenting lectures, led the group on regular field trips. Among Mr. Sokol's memorabilia are a couple of notices from the New York Microscopical Society announcing field trips headed by Mr. Burke. Both notices are from the year 1940 and substantiate his association with that organization. A second organization he belonged to was the American Society of Amateur Microscopists. This Society was founded in 1939 and issued a certificate to its members that was signed by its founder, Dr. Julian D. Corrington. Other early members of the Southern California Microscopical Society also belonged to this organization, including Mr. Zane Price. Before leaving the East Coast, Mr. Sokol studied bacteriology at Newark University.

After establishing himself in California, Mr. Sokol attended the Frank Wiggins Photographic Trade College which has now become part of L.A. City College. He also attended special courses in geology at UCLA and optical Mineralogy at USC. After more than a decade of study and dedication, he had successfully established himself as a noteworthy microscopist and was well prepared to contribute to the success of the fledgling Southern California Microscopical Society. Over the years, Mr. Sokol published a number of scientific papers, all of which were associated with microscopy. A few examples include: "*Art and the Microscope*," in Functional Photography Magazine, "*35mm Photomicrography*," in Biological Photographic Journal, "*Crystal Photography*," in Camera Craft Magazine and "*Mounting and Preparing Diatoms for Microscopic Study*," (LAMS bulletin).

The Southern California Microscopical Society was the first scientific organization Mr. Sokol joined after moving to the West Coast in 1943. However, he eventually became active in a number of other groups that represented his interests. In that same year he joined the Biological Photographic Association and became its treasurer, eventually being elected its president. He was also the vice-president of the Camera Chromers of Inglewood, one of many camera clubs with which he was associated. He was also affiliated with a number of notable English Societies, including the Royal Microscopical Society and the Quekett Microscopical Club. His correspondence with Mr. H.A. Dade led to his application to the Quekett. Mr. Dade, who at the time was assistant director of the Commonwealth Mycological Institute, Kew, sponsored Mr. Sokol's application. As a result, Mr. Sokol joined the Quekett in April of 1954.

As we learned earlier, the microscope strongly influenced the employment decisions of many of the founding members. These circumstances

were also true in the case of Mr. Sokol, however, it did not start out that way. In the late 1920's when Mr. Sokol lived in New Jersey, he was employed as a bus driver. Sometime in 1931 or 1932 he became a passenger traffic agent for the Pennsylvania Railroad in New York City. He remained in this position until 1943 when he moved to California. It was during the time he was employed in New York that he organized a camera club among his friends in the railroad business. There remains today a photograph of Mr. Sokol and his fellows from the station proudly exhibiting their photographic work.

After moving to California, Mr. Sokol's first job was with the Pacific Railroad Company as a ticket agent. He spent the next nine or ten years with the railroad until May of 1952, when he began working for the Erb & Gray Instruments Co. He was administrative director of this company, and as such acquired a great deal of valuable experience.

Many years earlier, in 1929, Mr. George Lory established the Los Angeles Scientific Instrument Company (LASICO)* *See Footnote.* Herman Adler was a travelling representative for E.Leitz, Inc. He persuaded Mr. Lory to expand his business and establish LASICO, and hire Mr. Sokol as the Sales Manager. So after four years with Erb & Gray, Mr. Sokol was hired by Mr. Lory of LASICO, where he was employed for 16 years before retiring in 1971 at the age of 67. However, it seems that he spent a short time working at the Max Erb Instrument Co. in Burbank, but in a limited capacity. He spent a total of 20 years selling scientific instruments.

Mr. Sokol was elected president of the Southern California Microscopical Society on July 13, 1950. In his notes he stated that he was also the vice-president for a short period. I have not been able to determine at what time or under which president he served in this capacity. In the 1950's, the records were not well kept and are not clear enough to make concrete determinations. As mentioned earlier, Mr. Sokol served as chairman of the Demonstration Committee for the 1948 Exhibition. He was elected secretary-treasurer on March 23, 1948, at the same time Colonel Fleming was elected president and Milton Gray, vice-president. A few years later, after assuming the office of president, he continued carrying out the duties of secretary. In 1951, when Lloyd Matlovsky became president, he asked Mr. Sokol to continue as secretary-treasurer. This dual role lasted until late 1952. In 1951, during Mr. Sokol's presidency, the most notable speaker was Mr. George Needham. Mr. Needham was president of the San Francisco Microscopical Society and the author of "*The Practical Use of the Microscope.*" This book has come to be known as the "microscopist's bible." Mr. Needham's lecture concerned the application of phase microscopy and was illustrated with Kodachrome slides. He was invited to Los Angeles by Mr. Bert Scott, a SCMS member, who had been corresponding with Mr. Needham.

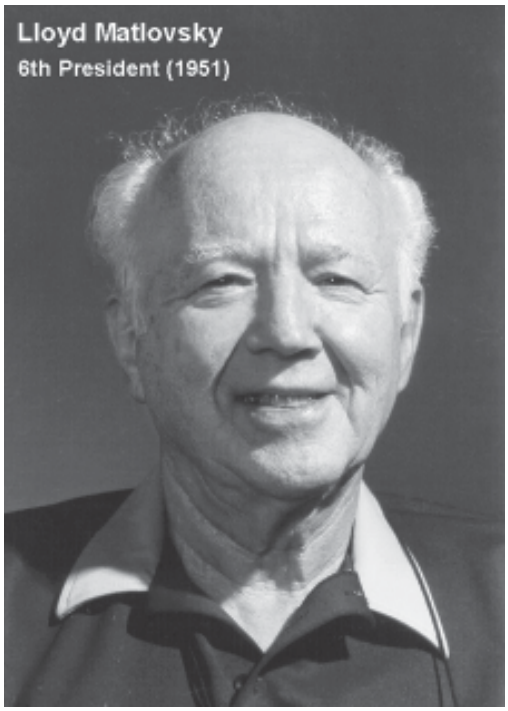
LLOYD MATLOVSKY, 6th President

After serving in the U.S. Navy as an optical engi-

** Footnote: In 1950 Mr. Lory built the present LASICO facility at 2451 Riverside Drive. His nephew, Mr. Wolfgang Buerner joined LASICO in 1962; after graduating from the University of Munich in Germany. Prior to coming to America he attended a 3-month microscope-training seminar at Leitz in Wetzlar. He also took a similar course for surveying instruments with Kern in Aarau, Switzerland. In 1968, Mr. Lory passed away leaving Mr. Buerner to assume control of LASICO. At that time LASICO provided three primary services including the sale of several different microscope makers, surveying instruments and the production of their own planimeters, pantographs and Crystalscope, used in the sugar processing industry. In time the sale of microscopes became difficult with the entry of many dealers and low profits. As a result, the stock on hand was sold to McBain Instruments. Eventually, the distribution and sale of surveying instruments became a separate company. LASICO continues to specialize in their compact computing planimeters and measuring instruments.*

neer, Lloyd Matlovsky became affiliated with the University of Southern California. As mentioned above, he followed Mr. Sokol as president in October of 1951. By this time, many of the activities of the Society were combined with those of the Biological Photographic Association. As the members migrated to the BPA, there were no sustained efforts to maintain the structure and offices of the Microscopical Society.

This brings to an end the account of the first historical period of the Society. The revived Society of the early 1970's was brought about by Prof. John De Haas and should be the subject of future documentation. □



SOUTHERN CALIFORNIA MICROSCOPICAL SOCIETY
LIST OF MEETINGS
Dates, Speakers, Subjects and Locations

03-06-1941	James Smith,	Discussion relative to the organization. Levy's Restaurant.
03-27-1941	John W. Budd,	Transmitted light and photomicrography. Residence of Dr. J.W. Budd.
04-24-1941	Max Erb,	Fluorescence Microscopy. Hematology Dept, Children's Hospital.
05-15-1941	Max Erb,	Microscopical Publications. Hematology Dept of Children's Hospital.
06-0?-1941	James Smith,	Business meeting, Mr. Rumann exhibited a motion picture. Hematology Dept of Children's Hospital.
05-15-1946	Arthur C. Hurt,	Report on the state of the Society, Business meeting. L.A. Athletic Club.
06-25-1946	Lloyd Matlovsky,	Exposure control in photomicrography, Forensic Lab explained. W.W. Harper's Lab.
07-23-1946	John W. Budd,	Research on cancer, Mr. Hurt reported on Microtomy. L.A. Tumor Institute.
08-27-1946	W. Merrill & W. Naylor,	The electron Microscope. The Research Laboratories of Union Oil Company of Calif.
09-23-1946	Lloyd Matlovsky,	The Measurement of Lens Apertures. L.A. County General Hospital.
11-26-1946	James Smith,	Discussion on photomicrography. Home of Mr. James Smith.
01-28-1947	James Smith,	Personal exhibits. L.A. County Museum of History, Science and Art.


Biological Photographic Association
March 1966
Los Angeles Scientific Instrument Company
Bill Sokol
Photos by
Alfred Benjamin.

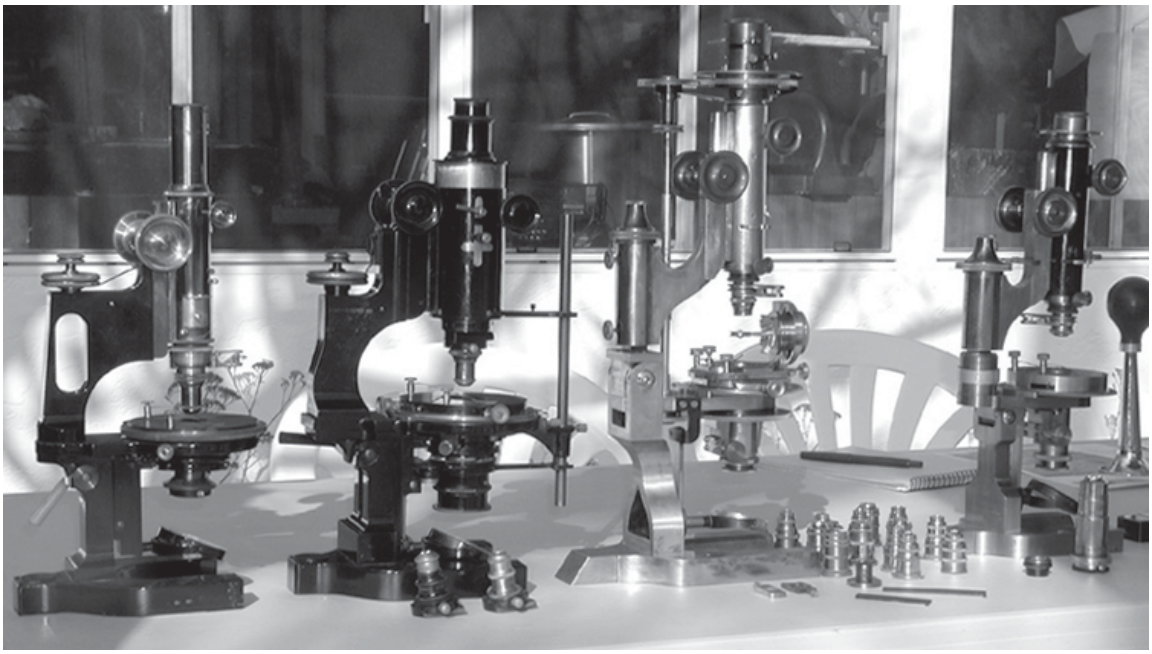
03-25-1947	Max Erb, Elections,	Practical Microscopy, Mr. Gray on Construction of Lens Mounts. L.A. County Museum of History, Science and Art.
04-22-1947	Arthur C. Hurt,	Mysteries of Plant Life, and a talk on "Spherical & Chromatic aberrations. L.A. County Museum of History, Science and Art.
05-27-1947	James Smith,	Cleaning of Fossil Diatoms & Demonstration of mounting techniques. L.A. County Museum.
09-30-1947	Arthur C. Hurt,	Mounting Media. L.A. County Museum.
10-28-1947	Col. W. Fleming,	Mounting Media of High Refractive Index. L.A. County Museum.
11-25-1947	Harry Baskerville,	Separation Negative Techniques. L.A. County Museum.
01-27-1948	William Sokol,	1st annual Exhibition. L.A. County Museum, Exposition Park, Junior section.
02-0?-1948		L.A. County Museum of History, Science and Art.
03-23-1948	F.R. Abbott,	B&L Phase Microscopy, elections. L.A. County Museum of History, Science and Art.
04-20-1948	Milton Gray,	Demonstration of visicam camera, also Mr. G. Rhode of Erb & Gray present. L.A. County Museum, Exh Park. Joint session with BPA.
04-27-1948	Colonel W. Fleming,	Selecting used objectives, tests. L.A. County Museum of History, Science and Art.
06-03-1948	Dr. Oscar W. Richards,	Phase Microscopy, American Opt. Co. L.A. County Museum of History Science and Art. With the BPA.
09-28-1948	Arthur C. Hurt,	Review of Microscopical Illumination. Mr. C.D. Sebo, Automatic cameras. Viewed film-Pasteuris Legacy. L.A. County Museum of History, Science and Art. Joint with the BPA.
10-26-1948	Col. W.D. Fleming,	The Maltwood finder. Mr. Gray on the Mechanical adjustment of the microscope. L.A. County Museum of History, Science and Art. Exp Park.
11-23-1948	Lloyd Matlovsky,	Photomicrography in Color. L.A. County Museum of History, Science and Art. Exp Park.
01-20-1949	James Smith,	Symposium on Photomicrography. Illumination. Mr. L. Matlovsky on exposure. With the BPA. L.A. County General Hospital.
05-26-1949	William Sokol,	Business meeting. L.A County Museum.
06-09-1949	Arthur C. Hurt,	Polarized Light, Mr. Ed Lowe on pol slide making. L.A. County Museum, Exp Park.
07-0?-1949	William Sokol,	Business meeting. L.A. County Museum, Exp Park.
08-0?-1949	Alice Scott,	Quick freezing tech. L.A. County General Hospital.
10-27-1949	Max Erb,	Latest in Modern Microscopes. Erb & Gray Instrument Company.

12-01-1949	Bill Jones,	Preparing metals for microscopic examination. Smith-Emery Corp. L.A.
01-12-1950	Max Erb,	Zeiss equip, & the OrthoPhot Camera. Erb & Gray Inst. Co
02-09-1950	James Smith,	On illumination. Erb & Gray Inst. Co.
03-09-1950	Max Erb,	Mirror type lens by B&L. Erb & Gray Inst. Co.
04-02-1950	American Opt.	Phase Microscopy. Erb & Gray Inst. Co.
05-09-1950	Bill Jones,	Photomicrography & metals. Smith-Emery Corp. on Crocker St. L.A.
06-08-1950	Bill Jones,	Polarizing microscopy. Smith-Emery Corp.
07-13-1950	James Smith,	Mr. Sokol elected as President. Home of Mr. Smith, So. Pasadena.
08-10-1950	James Smith,	10- watt Zirconium arc Lamp. Home of Mr. Smith, So. Pasadena.
09-14-1950	James Smith,	Magnify ribbon filament for illumination, Use of Abbe condenser. Smith-Emery Corp.
10-12-1950	H. Magg & L. Matlovsky,	Galileo Phase Stand & Zirconium arc lamp. Home of George Lowry, Silver Lake.
11-09-1950	Dr. Kohler,	The Scopacon, tissue slides of malignancies. St. Vincent's Hospital L.A.
12-14-1950	L. Matlovsky,	Auction and Christmas Party. Smith Emery.
01-11-1951	Russell Neil,	Application of radioactive isotopes. The Tumor Institute. Hope St. L.A.
02-0?-1951	William Sokol,	Diatoms & polarized slides. Home of W. Sokol.
03-0?-1951	Bill Jones,	Smith-Emery Corp.
0?-0?-1951	George Needham,	Application of Phase microscopy, blood platelets under phase. Home of Mr. Bert Scott, Glendale.
10-0?-1951	G. Brauer & W. Sokol,	Into to Polarized Light, slide making tech, photomicrography of Pol light. Elect of L. Matlovsky. Dues reduced to $1.00 a year. Home of George Brauer.
11-08-1951	L. Matlovsky,	Exposures in Photomicrography. L.A. County General Hospital.
01-10-1952	William Sokol,	Inspect the plant & equipment of the L.A. Scientific Inst. Co.

WORKSHOP OF THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA

recorded by Herb Gold and written by Jim Solliday

Date: Saturday, 1st March 2003
Location: Ken Gregory's Residence



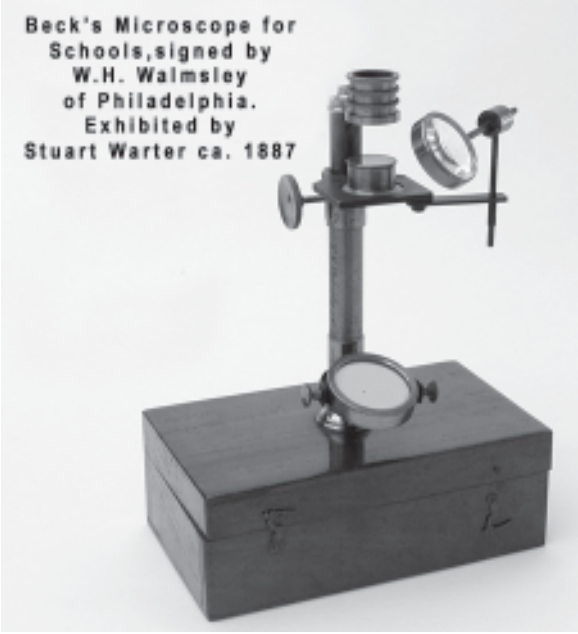
The workshop began at 9:15 AM at Ken Gregory's home with 13 members present. The gathering came together under the shade in the back yard and was called to order by the President, Jim Solliday. Along with his generous hospitality Ken was kind enough to provide a large selection of cookies and donuts. This month the group was treated to a very good selection of microscopes and accessories, all of which required both tables donated by our educational officer Alan deHaas. Announce-ments were made concerning the upcoming Wednesday meeting as well as the next hands-on workshop. Our next Wednesday meeting will be held on March 19th at the New Roads school and will feature Mr. Gregg Kleinberg of Tamar Technology as our guest speaker. His talk will be on a new form of homogenous illumination (EtherGlow) and will continue our series of lectures on microscope illumination.

Our next "hands-on workshop" will be a field trip to the Madrona Marsh in Torrance, California. This location was discovered by Alan deHaas and was reported as a wonderful location for collecting aquatic samples. The marsh was described as being maintained in its "natural" condition and kept as a true indigenous habitat. Our first report on conditions was provided by our good member and rotifer-man, Reino Mascarino who has already made two trips to the marsh. We look forward to the promise of a productive field trip with the chance of finding microscopic gems for examination. As of now we are hoping to have this field trip on the third Saturday in April. This will be in advance of our

usual Pond Life meeting held in May. More information will be forthcoming as plans are further developed. Arrangements and plans should be directed through Alan and Pete Teti.

Other announcements included a proposal by Alan deHaas that the Society should put together a glossary of Optical Terms. If produced it would provide the membership with a reference and standard for both discussion and authorship of the Journal. It was also announced that the New York Microscopical Society was sponsoring a Workshop on Polarized Light Microscopy. This was to be in the series of the Bernard Friedman Memorial Workshops. It has been advertised as an advanced course on Polarized light and will cover the following topics: (1) The Nature of Polarized Light. (2) The Origin and Interpretation of Interference Colors. (3) Birefringence and Crystal Orientation. (4) The Indicatrix. (5) Compensation and Variable Compensators. (6) Interference Figures and their Interpretation. The workshop will consist of four consecutive Saturdays (April 26, May 3, 10 & 17th, 2003) and will be instructed by Jan Hinsch of Leica, Mary McCann of McCann Imaging, John Reffner of SensIR and finally Don O'Leary of the N.Y.M.S. If you're interested in this opportunity you can contact Don O'Leary at (201) 797-8849 or email: donoleary@att.net. It was also mentioned that the annual meeting of the Southern California Society for Microscopy & Microanalysis would be held on March 6th, 2003 at the campus of U.S.C.

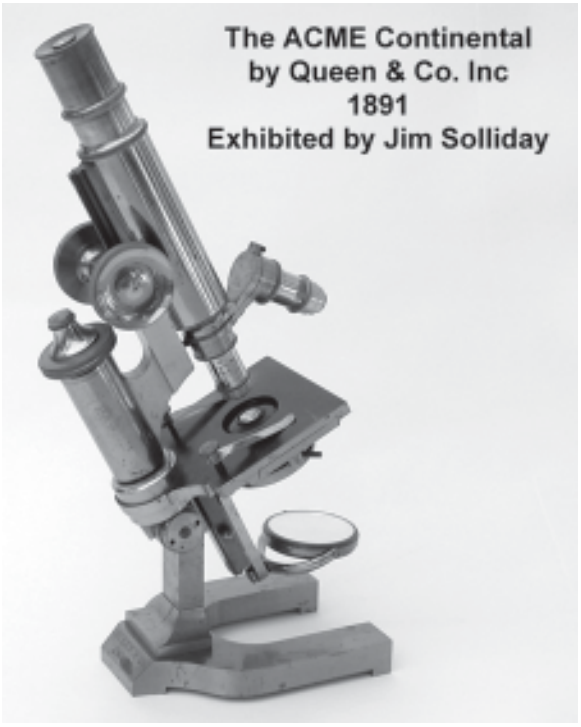
Our exhibits and discussions began with **Stuart Warter** and his recently acquired box-mounted simple microscope. The microscope was signed and sold by *W.H. Walmsley* of Philadelphia but was manufactured by R.J. Beck. It was commonly know as Beck's "microscope for schools" and appears in the Beck Catalogue for the Philadelphia branch. Stuart revealed to the group that the microscope was presented to Harry



Farnell by his grandfather in 1887. The instrument came with a number of written documents including a biography of his father and a history of the family. It seems the family trade was bookselling with an emphasis on religious tracts and natural history. Stuart provided a very interesting description of the family history which included the perspective of 19th Century amateur scientists.

Jim Solliday exhibited a Continental stand with the signature of Queen & Co. Philad[a], No.15544 (signed on the case). The address at the time was, Queen & Co., Incorporated, 1010 Chestnut St., Philadelphia. This stand was called, The ACME "Continental" Microscope and was introduced in 1891 (see: *The Microscopical Bulletin and Science News*, Vol.VIII, No.l, Feb 1891, MBSN). Queen describes this microscope on page one of the Bulletin in the following manner. "The Continental ACME Microscope. To meet a demand from those who prefer the small European Continental models, we have constructed this instrument. It is the same in size, and in general features of design, as the "Ia" of a well-known German maker (Zeiss). The workmanship is of the well-known ACME standard, and is guaranteed to be perfect in every respect. The instrument is of polished brass throughout. The mirror (plane and concave) is of large size, properly focused, and are mounted upon a sliding arm, having also an ample lateral swing for oblique illumination.

The stage is large and very firm. The sub-stage tube is of the standard ACME size, and is removable by a lateral slide, correct centering being provided for. A tube fits into this, carrying diaphragms flush with the surface of the stage; these diaphragms may be instantly changed without removal of the tube, or the latter may be removed and other accessories substituted such as a sub-stage condenser, polarizing apparatus, spot lens, etc. The eyepieces are of our ACME No. 5 standard, fitting into a draw-tube, which is graduated to inches and tenths. The rack-&-pinion movement is, of course, the ACME of perfect fitting and smooth working. The fine adjustment slide works upon an accurately milled triangular bar of great solidity and firmness, wear being provided for. The head of the fine adjustment screw is graduated upon a silvered surface, to show hundredths of a millimeter of actual motion of the body."



This microscope was also introduced in the 74th edition in catalogue "B".

The microscope measures 13 inches high when the 10x is in focus and the draw-tube at 160mm. The foot is 4 inches wide and 5-1/4 inches deep. The stage is 3-3/8th wide & 3-1/8th deep. The body-tube is 5-1/2 inches with the draw-tube closed. The microscope stands on a horse-shoe foot with a rectangular pillar and is inclinable on a firm compass joint. Optics include: 2 ACME eyepieces, No.1 & No.2. The objectives consist of 2 Leitz lenses, Leitz No.3 & Leitz No.6 including their brass storage cans. The Abbe condenser is held in a sleeve removable on a side cut dovetail. The whole outfit is stored in a fine mahogany case with one drawer and lock & key.

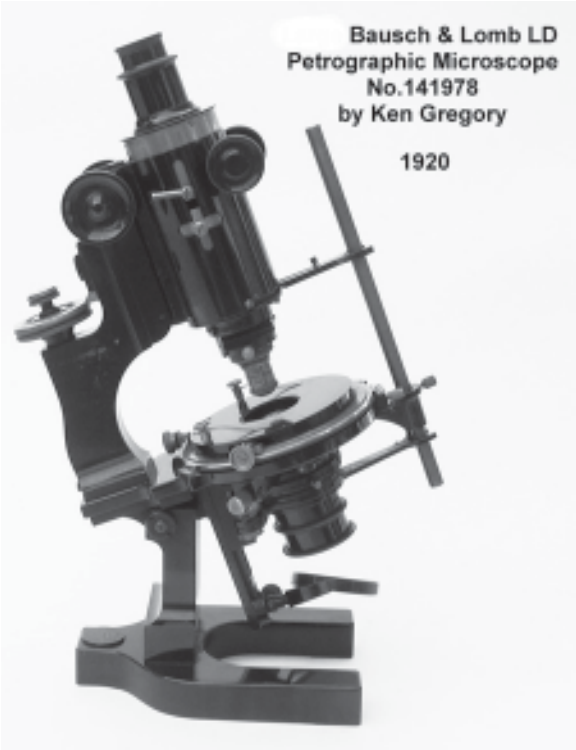
Condition is excellent and this particular model is extremely rare having only been made for a few years, because in 1892, Queen introduced a "Pattern B & Pattern I" of this same overall design. Then in 1896, the ACME Continental No.II or what was called *"The New Stand"* replaced the above Pattern. Jim also commented on the transition of the microscope industry to the Continental pattern and the effect this had on American makers. It was also noted that the 1890's and the first few decades of the Twentieth Century witnessed the establishment of a great number of new Universities and Medical laboratories. Even though Queen & Company were quite successful through much of the 19th Century the demand for large numbers of microscopes were more easily filled by larger firms such as Bausch & Lomb who had expanded to accommodate the growth in demand.

Izzy Lieberman exhibited an extending telescope with four sections. He thought it might be a reproduction but was not sure. A number of the members felt that it was indeed an original instrument. It was unsigned and was thought to be English in origin.

Jim Clark exhibited for the group a beautiful Leitz Stereo microscope with black and chrome finish. It featured 5x eyepieces on a 10x binocular body. The arm featured a jug-handle and was mounted on a superb circular polarizing stage.

The stage could be rotated 360 degrees and had an outer rim graduated in degrees with silver finish. The rear leg could be folded providing the ability to use the instrument in an inclined position. The whole scope appeared to be in new condition.

Ken Gregory displayed a large Bausch & Lomb LD Petrographic/Polarizing microscope acquired last Fall. The serial number of 141,978 placed the manufacturing date at about 1920. The body tube is adjustable by rack & pinion, with an inner tube containing a Bertrand lens and diaphragm,



also adjustable by rack & pinion. The analyzer is mounted in the lower part of the body tube and can be moved in and out of the optical axis in a slot on the rotating arm. The fine focus is via horizontal lever controlled by a micrometer screw.

The revolving, graduated stage is an adjustable stage plate with 12mm movement possible. The substage illumination consists of an Aplanatic condenser of 1.40 N.A. Below the condenser is an iris diaphragm. Below the diaphragm is a sliding carrier with a 1/4 wave plate (selenite).

The polarizer is usually a 16mm Ahrens prism in a rotating mount. However, for this scope the Ahrens has been replaced with a Polaroid plate. The revolving polarizing tube has an arm attached which engages a swinging bar, the latter attached to the underside of the stage via a circular ring. The bar allows for simultaneous rotation of the polarizer and analyzer, yet independent of vertical movement of either the substage or the body tube. Removal of the rod will permit independent movement of the analyzer or polarizer. It was mentioned that the overall construction of this microscope was built on the earlier pattern of the B&L Model DD. Objectives are mounted in interchangeable holders (the quick change system); each centering. There are 3 objectives with this stand, a B&L 2/3; B&L 4mm and a Leitz Oil immersion. Eyepieces include an 8x Leitz periplan with centering grid and a No.3 projection eyepiece. The microscope is marked at the back of the limb as U.S.B.M (U.S. Bureau of Mines).

The microscope came from the estate of a former employee of the U.S. Geological Survey. For comparison, Ken also exhibited for a second time his jug-handle Bausch & Lomb polarizing microscope, Model BBH (1907), previously exhibited in December of 2001 and January, 2002.

It should be noted that at this time there were five exceptionally rare polarizing stands on the table for the members to study. Included was a Large B&L LD; B&L BBH with jug-handle (early LCH); Fuess IIa; Fuess IIIa and the extremely large and rare Fuess Model VI (see below).


Fuess petrograph
Model IIIa
1st Quarter 20th
Century, No. 1654
Exhibited by
Ken Gregory


Large Fuess Model VI
ca.1899-1900
Exhibited by
Allen Bishop
No.570


Accessories for the Fuess Model VI
Objectives, achromatic condenser, two Bertrand lenses,
specimen slide guide bars and small cap
analyzer for Zeiss-type microspectroscope.
ca. 1899-1900
Exhibited by Allen Bishop

Fuess "Aschenwinkelapparat" (Lit. "Axis-Angle-Apparatus")
A simplified form of Federoff Stage
illustrated from catalogue
Exhibited by Allen Bishop

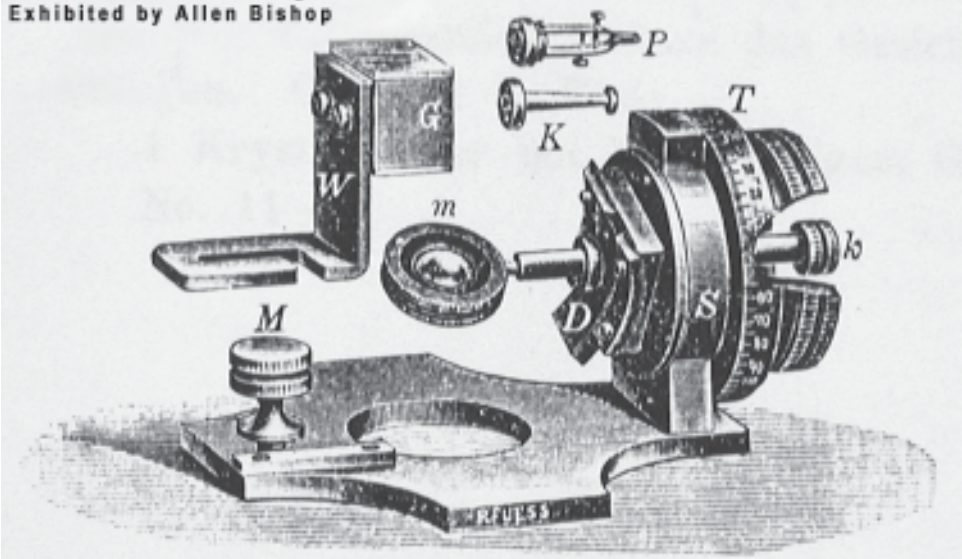
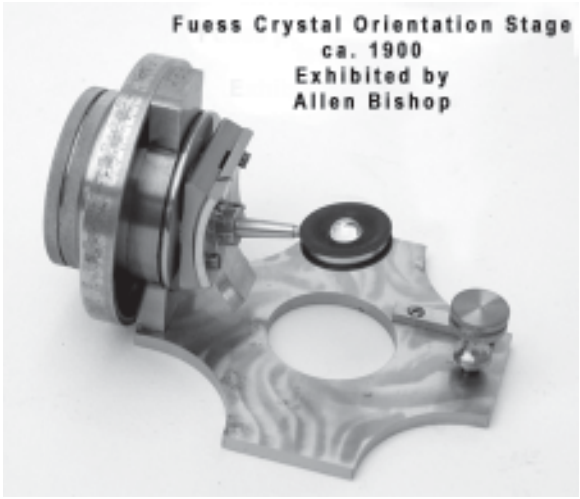


Fig. 15.

Fuess cover glass
gauge, ca. 1900
Exhibited by
Allen Bishop

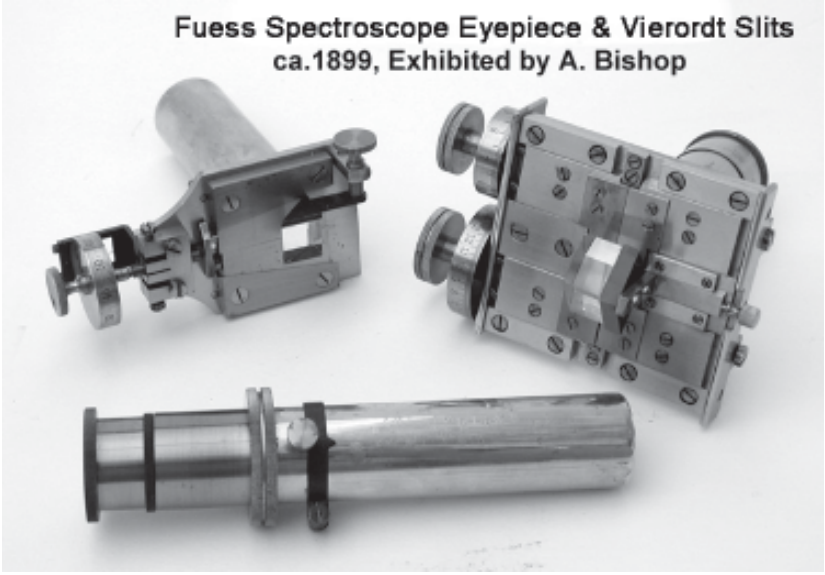
Fuess Crystal Orientation Stage
ca. 1900
Exhibited by
Allen Bishop



Fuess
Goniometer
Eyepiece
ca. 1900
Exhibited by
Allen Bishop

Fuess Anemometer
(Wind Gauge)
1939
Exhibited by
Allen Bishop

group that the December 2002 edition of the Journal was currently at the printers and would be distributed at the next Lectureship meeting.

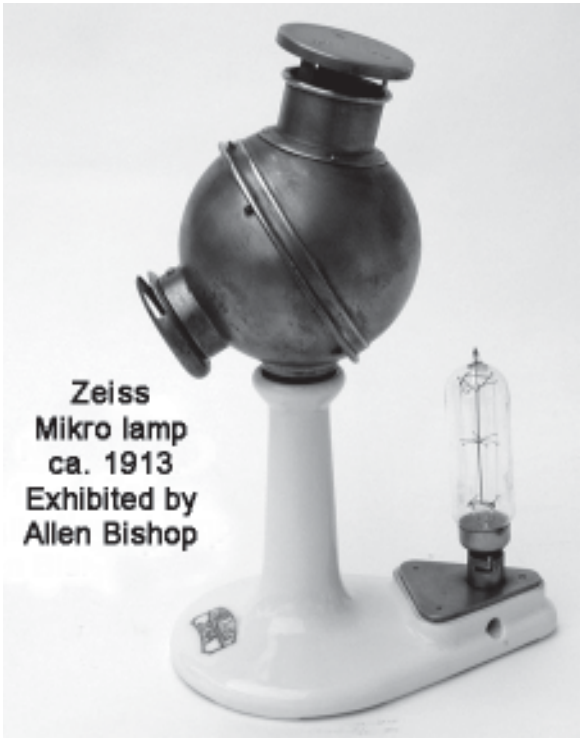


Reino Mascarino talked to the group about his visit to the Madrona Marsh in Torrance. He mentioned that the habitat was currently infested with ostracods (a tiny bivalve crustacean frequently found in freshwater). He believed that a trip to the marsh by the Society would indeed be better in April rather than in the next few weeks. He also inquired if there were any advantages to the combined use of phase contrast and polarized light. A number of advantages were pointed out including the enhanced ability to recognize crystals in the vacuoles of protozoa and raphides in plant tissue. Any tissue or object of birefringent material would indeed be rendered more visible with the enhancement of interference colors brought out by the addition of polarizers.

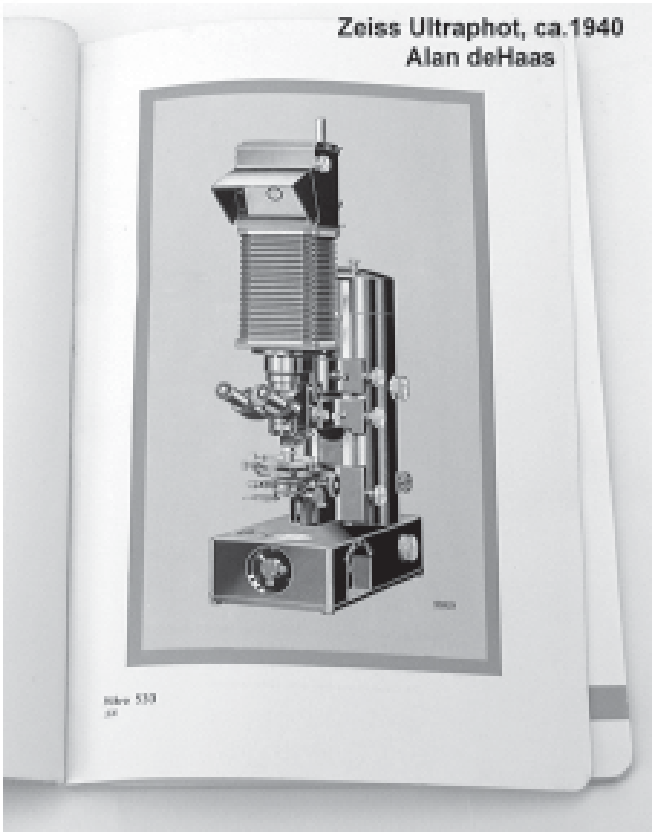
Allen Bishop exhibited a very rare microscope lamp by Zeiss, known as the "Mikro Nernst Lamp". It had a beautiful ceramic base with the Carl Zeiss logo on the front. On the base was also mounted a delicate vacuum tube that helped regulate the current to the main filament which consisted of a ceramic-coated copper rod. The lamp was manufactured ca. 1913. Bishop also described for the group a magnificent example of a Fuess Model VI.. This microscope was on loan from Ron Erb who entrusted the instrument to Allen for servicing. The serial number of this stand was 570 which placed it closer to 1900.

The overall pattern was after the design of Alan Dick of Swift fame (1889 Swift-Dick model). The main feature that was in common with the Swift (and the B&L "LD") was the internal rod that was linked by gears to both the analyzer and polarizer. Rotation of one of these gears would turn both elements together in a synchronous motion. Another one of its features was the ability to provide micrometric adjustment of the nicol prisms. There were multiple Bertrand lenses with different focal lengths. The mechanical stage was very elaborate.

The table top was filled with accessories associated with this ultra rare stand. Included were 17 objectives, three of which have centering lines engraved on their front elements.



Rare Leitz Simple Lenses
for Pocket microscope
1st quarter 20th century
Exhibited by Alan deHaas

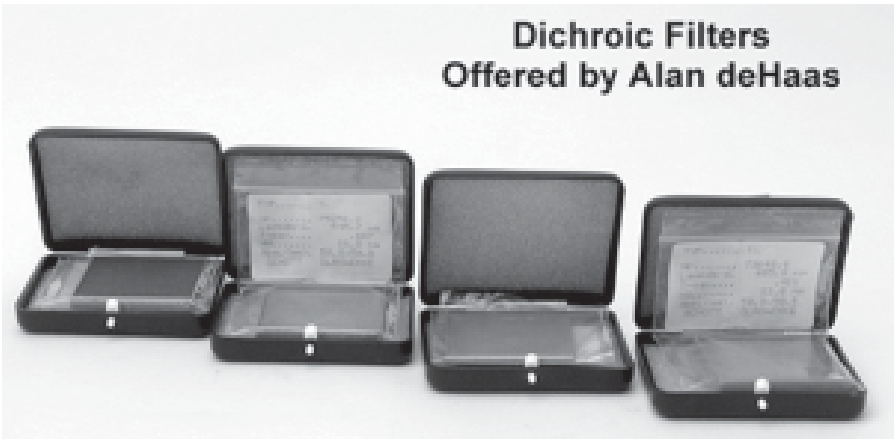


Zeiss Ultraphot, ca.1940
Alan deHaas

Goniometer eyepiece, extra achromatic condenser. Also on exhibit was a Fuess cover glass gauge made of brass. Two very elaborate optically accurate Vierordt slits for a Fuess spectroscope were also on the table. Allen promised the fellowship that he would write an article for the Journal on the history and mechanics of this wonderful polarizing microscope.

Alan deHaas exhibited a Zeiss catalog showing the Zeiss Ultraphot, ca. 1940. He also showed a set of dichroic filters and exhibited a very rare set of Leitz Single Lenses for the pocket microscope ca 1800-1825.

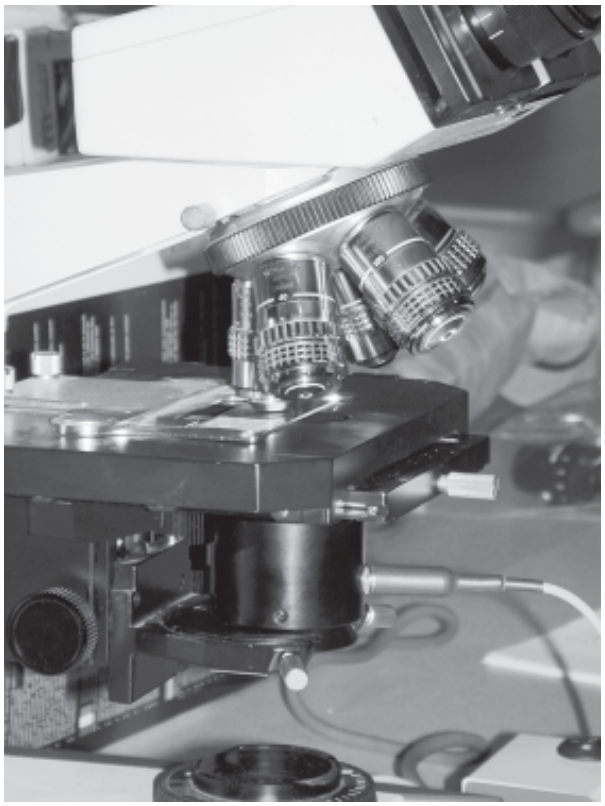
This particular meeting was very enjoyable and was filed with many educational discussions showing that amateur involvement in science has a long and valuable tradition. □



Dichroic Filters
Offered by Alan deHaas

MSSC Monthly Meeting

Wednesday 19th March 2003
at New Roads School
reported by John Fedel



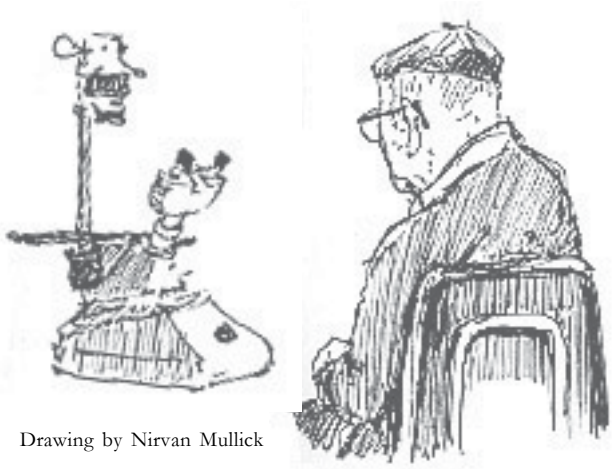
This month we expanded on the topic of illumination. Mr. Gregg Kleinberg from the Tamar Technology Co. gave a presentation on the EtherGlow illumination system which was designed for the Olympus BHS. Mr Kleinberg was accompanied by his colleague, David Marx Ph.D. (optics). Dr. Marx was the Chief Optical Engineer of Sight Systems, which ultimately became Tamar Technology.

Mr Kleinberg and Dr. Marx explained how EtherGlow illumination functions and highlighted its unique advantages. EtherGlow is a filter made with spheres of titanium dioxide. EtherGlow utilizes new patented technology under license from TAMAR Technology (U.S. Patent No. 5,734,498) to achieve a source from which light emanates in every direction, eliminating surface glare and bringing out features which are not visible when an epi-illuminator is used as the light source. The filter ensures that at any point throughout the depth of field of the subject, the light provided is a point to point source.

EtherGlow substantially eliminates most image artifacts while supporting imaging of a quality superior to the best images obtainable with highest performance epi-illuminators. This enables you to literally see things that you didn't know were there. See www.tcg-rep.com/Tamar.pdf for full details on EtherGlow.

To demonstrate the technology, Mr Kleinberg and Dr. Marx set up an Olympus BHS microscope (donated for the evening by MSSC member John Fedel) with the EtherGlow illuminator. Mr Kleinberg also discussed how the images can be recombined using Pax-It, a 3-D imaging software to show off the depth of field acquired from using Etherglow.

Following this presentation, Jim Solliday (MSSC President) showed some of the results that he had achieved using the EtherGlow filter. □



Drawing by Nirvan Mullick

WORKSHOP OF THE MICROSCOPICAL SOCIETY OF SOUTHERN CALIFORNIA

recorded by Herb Gold and written by James D. Solliday

Date: Saturday, 5th April 2003
Location: Izzy Leiberman's Residence

The workshop began at 9:28am at Izzy Lieberman's home with 14 members present. The gathering came together under the shade in the back yard and was called to order by the President, Jim Solliday. This particular morning was unusually windy and cold but with the sun shining, things were indeed quite tolerable. Izzy's wife provided the bagels and our good friend William Hudson donated the coffee and donuts. As usual the group was treated to a very good selection of microscopes and accessories including two tables of free items, including photographic lab-ware and supplies, glassware and chemicals.

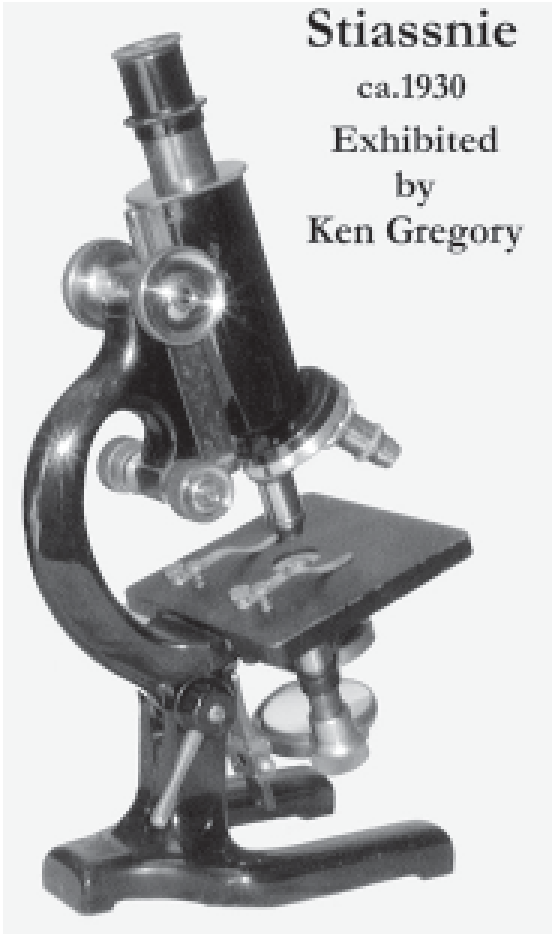
Announcements were made concerning the upcoming field trip to Madrona Marsh in Torrance, California on Saturday, 26th April, 2003. This date is close enough to the Society's annual Pond Life meeting on 21st May, that samples collected may stay viable for the meeting. Reino Mascarino (known amongst the membership for his keen interest in freshwater specimens and especially in Rotifers) provided a detailed

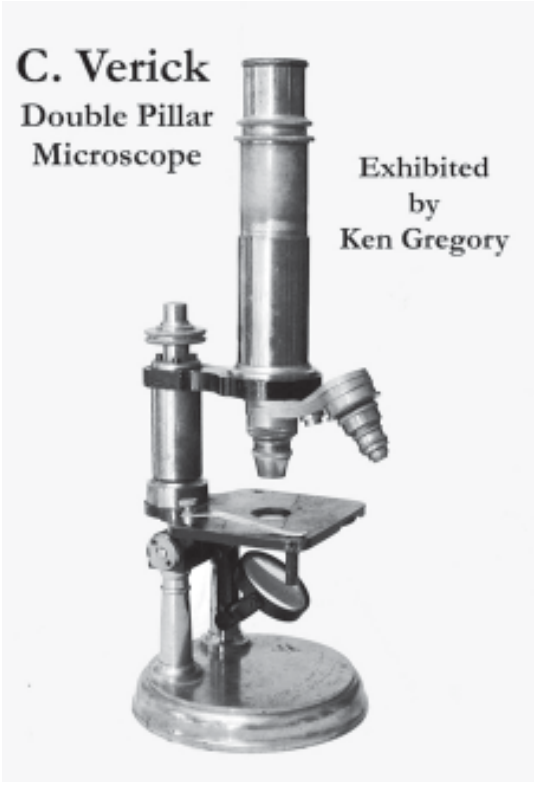
description of this exciting habitat. He explained that the marsh is being maintained in its "natural" condition and kept as a true indigenous habitat.

Ken Gregory would give a lecture at the next Wednesday meeting on *The Functional and Histological Anatomy of the Human Gastro-Intestinal Tract*. Accompanying the lecture would be slides of peptic ulcerations of the esophagus, stomach, duodenum and the pathophysiology of the colon. The meeting will be held on April 16th at New Roads School. Members were reminded that the next workshop on Saturday, 3rd May, 2003 would also be held at Izzy's residence.

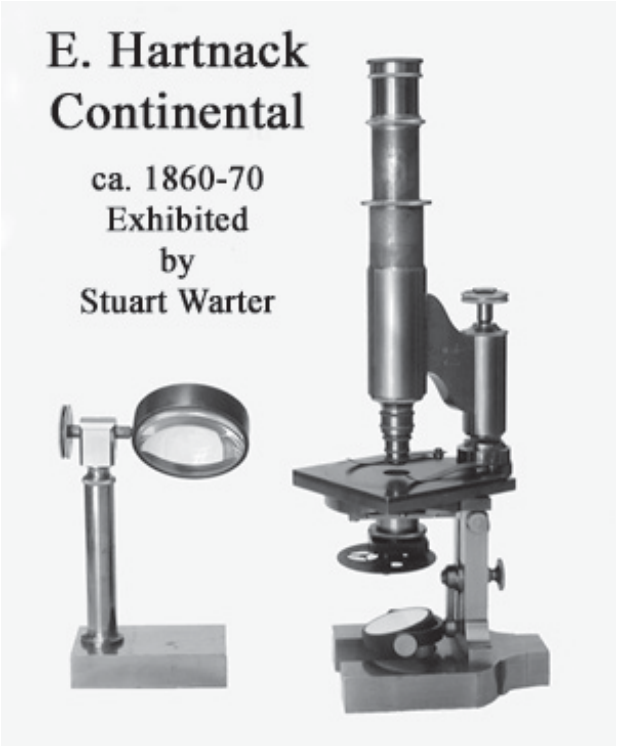
Reino Mascarino began by telling members about his findings at the Madrona Marsh. He described a number of recent visits making it sound like the perfect site for a Society field trip. He had seen hydra in excess of ½ inch and rotifers devouring colonies of volvox. He mentioned that the ubiquitous ostracods had diminished in number and instead the water was now filled with a healthy variety of protozoa. He indicated that there was plenty of room in the parking area for erecting tables. He suggested the President contact Mrs. Gus Schulman, a long time docent of the reserve, and ask for her advice in relation to the field trip. Members also asked Reino to produce a list of equipment and collecting supplies required for the trip. Obvious items included a good stereo and compound microscope, a collecting jar mounted to a long stick and plankton nets. Members were also reminded that for samples to remain healthy during the trip home, containers must be kept cool. A map and instructions will be posted by email to all members of the group.

Ken Gregory exhibited an unusual example of a Verick continental microscope. The exact date of manufacture is not known but the most notable feature was the circular base and double upright pillars. The upper parts of the instrument were similar to most of the other Verick stands exhibited to the group in the past.

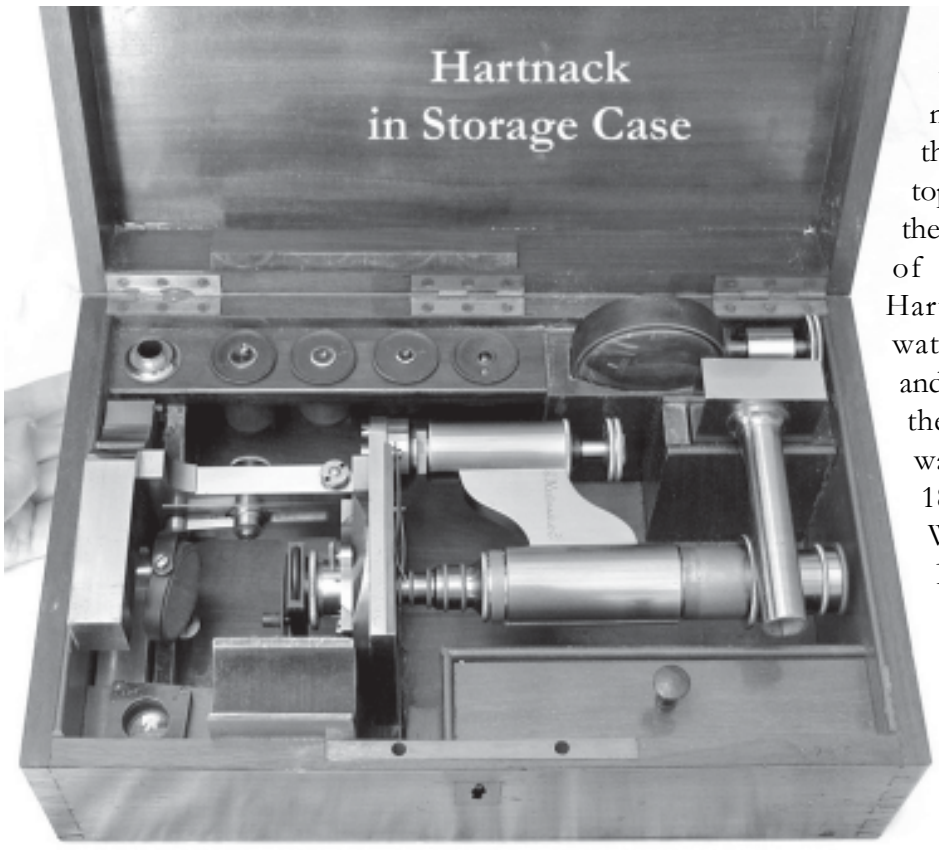




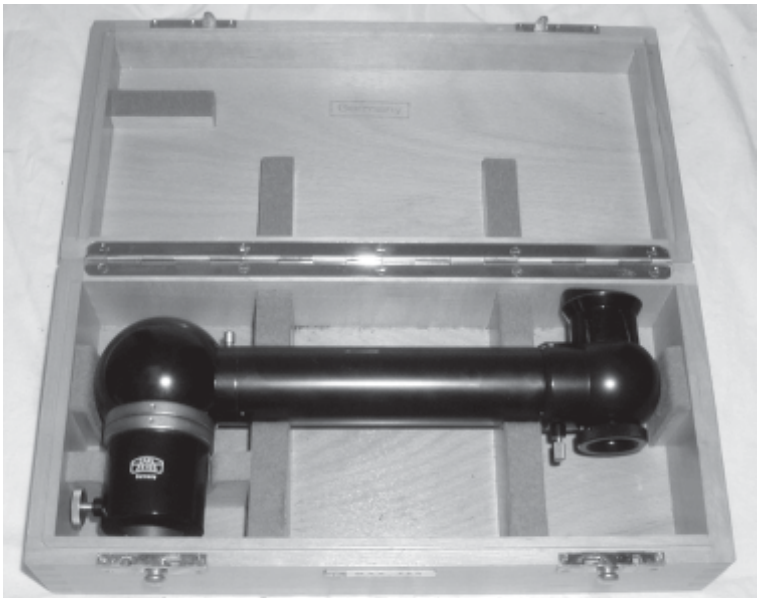
Ken also exhibited a large continental Stiassnie microscope, probably made in the 1930's. The body-tube is larger then the typical body found on the normal continental, indicating that it may have been intended for photomicrography. The precise model was not known. Unfortunately little literature exists on this French firm and catalogues are extremely rare. One reference suggested was, *Precis de Microscopie* by M. Larageron. This book illustrates a number of Stiassnie models.



Stuart Warter exhibited a classic continental microscope signed by E. Hartnack, which was manufactured between 1860-70. The signature read as follows, *E. Hartnack et Cie Place Dauphine 21, Paris*. Hartnack (1826-1891) started as a pupil (ca. 1847), and later became a partner of his uncle George Oberhaeuser, learning much about the business throughout the course of their association. In 1857, the partnership was formalized to create the firm Oberhaeuser & Hartnack, at 21 Place Dauphin. Bracegirdle says Hartnack assumed sole control in 1860 under his sole name. According to Mayall, it was Hartnack, who substituted the horseshoe foot on Oberhaeuser's drum creating the long-standing Continental style, this probably occurred early in the relationship (ca.1847-48). Stuart's microscope was an example of Hartnack's version of Oberhaeuser's microscope, differing in that the fine-focus knob was on top of the limb, instead of on the bottom and below the level of the stage. In 1859, Hartnack first exhibited his water immersion objectives and later that same year added the correction collar to the water-immersion lens. By 1870, he had moved to 39 Waisenstrasse, Potsdam, Berlin, Germany (1870 to ca.1927). This was about the time his factory in Paris was destroyed by the war. However, the business in Paris continued under the name of Hartnack &



Prazmowski (1877), Prazmowski having joined Hartnack in 1862. Hartnack became one of Europe's most influential makers. This Hartnack stand shown here was in like-new condition with a case and a European-style bull's-eye condenser.



Zeiss Camera Lucida (ca.1960)
Exhibited by Jim Solliday

Pete Teti brought up the prospect of using a new printer for the Journal, as the current business was too far from his home. He informed the group that 75 copies of the latest issue had been mailed out this past week. Jim Solliday suggested investigating the cost of having the printer collate and label future copies.

Larry Albright exhibited a very nice pair of new binoculars, which were obtained at the suggestion of John deHaas. They were manufactured in Asia and were sold in this country for a very cheap price. For the money (approximately $20) the quality was quite good. A few months ago John described the availability of two models, a portable one and the larger example brought in today by Larry.

Dave Hirsch exhibited a Russian Proportional Divider with beautiful veneer scales. Dave took the time to describe how they were to be used.

Reino Mascarino proposed a question for the group concerning the use of his stereomicroscope. He wished to know why the focus shifted when using a dichroic filter. The inquiry was addressed by Alan deHaas who explained that any glass introduced into the system changed the rate of transmission of the light, especially when the light is converted to a monochrome color.

Jim Solliday introduced a working Bausch & Lomb Spectronic 70 spectrophotometer, which he offered free to anyone who might wish to have it. Accompanying the spectrophotometer was a large supply of optically corrected glass tubes and a full set of manuals and instructions. Additional literature by Bausch & Lomb was provided. Bill Hudson agreed to take the instrument home for testing.

Jim also offered a large set of notes on anatomy and physiology originally created by Dr. Edwin Crost, a longtime and past member of the Society. These detailed notes were created during his years in college and formed part of his primary education. The notes included beautiful hand-colored drawings which filled many pages. The artwork was of the highest quality. Jim also described and exhibited a postwar Zeiss camera lucida from the 1950's. It came stored in a hardwood box with velvet lining and locks. He demonstrated its use by illustrating how flexible the design was to different microscopes. Alan deHaas stated that the instrument was discontinued at the catalogue price of $2200.

Next Jim offered a vacuum gauge from the first quarter of the 20th Century. It was the old laboratory style often seen in the catalogues of firms like Henry Heil and Arthur Thomas Company. Dave Hirsch was the recipient of this interesting item.

Finally Jim exhibited a small Cary-type microscope, which was probably made in the 1830's or 1840's. The maker was not known but the instrument combines the features of both French and English makers. Alan deHaas stated that he felt it maybe an example of an Irish maker. If by chance any reader does recognize this make, Jim would very much like to hear from them. It is however, contemporary with the type of microscopes made by William Cary of London. A few of the features demonstrated were that it could be used as both a compound and simple microscope. The three objectives were stacked in the usual manner and could be separated for reducing the power. The arm that carried the body-tube could be lifted two or three inches on a post from within the pillar. This served as the coarse focus while a knurled screw around the base of the pillar provided the fine adjustment. The stage is identical to most Cary-types and encompasses the usual bone or ivory slider, as well as some small articulating forceps. The whole instrument stood on a circular base with the upright pillar attached to one side. Of great interest is that the optical performance is quite good for a microscope of this vintage.

Bill Hudson recently obtained from eBay a box of disposable rubber boots, which he said could be used at the upcoming field trip. He kindly offered access to the boots for anyone who might need them while collecting in the marsh. Jim Solliday also expressed his appreciation for the generous dedication and contributions that Bill provided, namely donuts and coffee at every meeting and workshop.

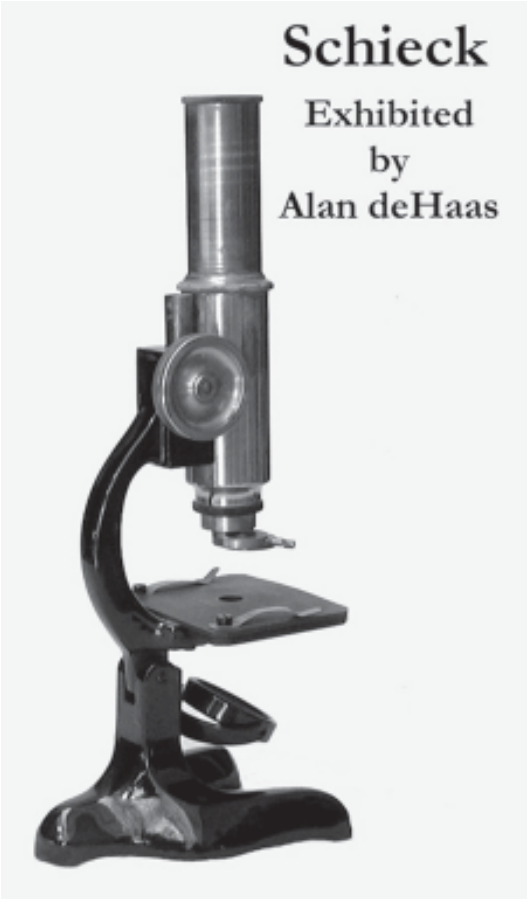
Izzy Lieberman exhibited a mid-sized Leitz microscope that was made in the 1920's. It was in good condition and had been refinished by John deHaas. It featured a revolving circular and

centering stage. Izzy also recommended an article on inkjet papers in this month's issue of Photography Magazine.

Dave Hirsch reminded the members that the Billings Microscope collection was now available on the Internet.

Alan deHaas exhibited some small components of a maneuvering thruster used on satellites. This is a rare item of incredibly precise machining. The tiny motors are activated by hydrogen peroxide reactions. Alan also called attention to two small German student scopes that he said were for sale. One was signed by Shiek and the other was unsigned but seemed to be a product of Paul Waechter or Wasserlein of Berlin. Alan's microscope has a tilting stage focusing screw which exactly matches the Waechter No. VI . It also has the same cast limb and arm in the same style.

The meeting was adjourned by 11:00am. □



The Charles Atlas of Algae

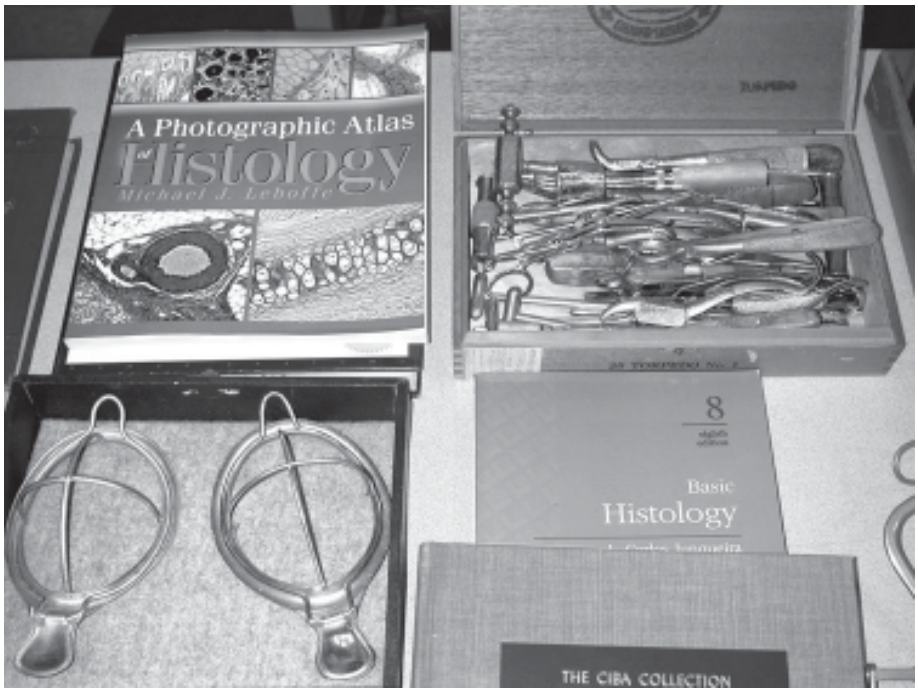
from the New York Times, Sunday, March 16th, 2003

Diatoms, algae that are major components of plankton, are proof that small is beautiful. Their silica shells, called frustules, are exquisitely ornamented, symmetrical structures. But a diatom is more than just a pretty face. Its frustule is a form of armor that can protect the diatoms from predators. Just how much protection the typical diatom frustule offers has been determined by scientists in Germany, who performed load tests on several species. Engineers perform these kinds of tests all the time - putting thousands of pounds of pressure on an aircraft part, say, until it breaks. The diatom tests were the same, but since diatoms are on the order of 100 microns in diameter, very tiny amounts of force were applied, using a microscopic glass needle.

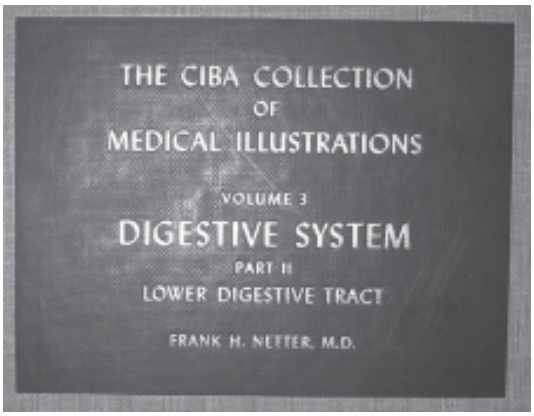
The researchers, writing last month in the journal "Nature", say the three species tested broke at forces ranging from about 100 to 700 micronewtons. This is equivalent to a weight of about 150 to 1,000 pounds per square inch. Not bad for a single-celled organism. The researchers also studied the shells using finite element analysis, a technique that involves breaking down a structure into many elements whose behavior can be described by a set of equations that can be solved by a computer. They found that most frustules have circumferential bands, called girdles, that help absorb stress and contribute to the shells' remarkable strength. □

MSSC Monthly Meeting

Wednesday 16th April 2003
at New Roads School
reported by Leonie Fedel



This month, Dr. Ken Gregory (MSSC member and longtime teacher of Anatomy and Physiology) gave a presentation on *The Functional and Histological Anatomy of the Human Gastro-Intestinal Tract*. Ken provided illustrations of peptic ulcerations of the esophagus, stomach, duodenum and pathophysiology of the colon. Ken also displayed a number of antique medical instruments. □



LEITZ LINES
by John Field

Memories of my earliest days seem to be mostly still "snapshots" of scenes. Sometimes I wonder if a memory is accurate. I have a very worn old Teddy Bear, mine since I was very small, and I have imperfect memories of comfort achieved by holding the bear closely, and also by chewing on its hands and feet. I believe I still remember the pleasant taste of my bear's thin leather covered "hands and feet"! Other objects prominent in memories of those times include a Lionel electric train, our Gilbert Erector set, a Chemcraft chemistry set, and our family Leitz microscope. Maintaining an electric train, and building Erector models are fine mechanical and electrical experience for a child. My parents did not purchase toy tools, preferring to give us, when appropriate, a real tool, which could be used to do a job. In like fashion, the purchase, when I was about nine, of the university surplus Leitz student microscope, allowed us children the benefit of good optics and mechanics, which is more condusive to satisfaction and prolonged interest than most toy optical instruments. That instrument, Leitz No. 110366, made about 1908, remains in my brother's home today, about to catch the interest of the first grandchildren of those it was brought home to instruct.

Not long after our family acquired the microscope, a neighbor, Anna C. Franklin, M.D., (daughter of the fruit fly [Drosophila Melanogaster] geneticist and 1933 Nobel Laureate, Thomas Hunt Morgan), gave us the set of histology & pathology slides she made as a medical student at Stanford, many of which we still have. We also studied all sorts of common objects, such as cloth, printing, coins & currency, comic strips, as well as many examples of pond water. I do not remember, as a child, knowing of the beautiful classic slides from the 19th century (too bad!)..

Upon entering medical school, I was expected to provide my own microscope, and bought a binocular Zeiss Junior, which served me very well. Spending my life in an environment where I always had access to a microscope if needed, I saw no need to keep the Zeiss, so after my graduation I sold it to an incoming freshman.

Years later, seeing an incomplete but attractive Leitz Ortholux in a "Silicon Valley" surplus store, I felt a desire again to have a microscope of my own. I had enjoyed the use of an Ortholux, with both transmitted illumination and the Ultropak incident illumination system one summer during a fellowship at the Argonne National Laboratory, and had never forgotten my admiration for its magnificent construction, and excellent design. When I bought mine, I initially expected simply to seek out missing components, and enjoy a fine instrument, but as I found related literature, and gradually acquired lenses and components, and read about still more systems, such as interference, fluorescence, polarization, etc., I began to realize the Ortholux is not "just a

microscope", but is rather the central building block for an immense and superb "system of microscopy". I greatly enjoyed adding phase contrast, darkfield, and incident illumination via the wonderful Ultropak, but it did not stop there…….

By this time I had a number of microscopist friends, and had seen some amazing collections, and as I began to want a stereo microscope, and then a brass instrument, I decided to seek out only Leitz instruments, and also to search for Leitz literature. That way I could know what I was looking for and what I had! I thought if I was able to limit myself to this one great firm, I could use this "mental control mechanism" to protect myself, and at least control my strong desires to acquire a Powell & Leland, a Ross, and so many other "dangerous, possibly fatal attractions".

By and large, this plan has worked for me, (with a few exceptions!) and I can admire many wonderful instruments, even when they are offered for sale, and almost always resist their charms. What I did not realize, when I began this hobby, was the tremendous scope of the Leitz line, beginning with the first stands made by Karl Kellner, at his Optical Institute, in Wetzlar, in 1851 (He began work in 1849, but during the first two years, made only a few telescopes). As a result of the great diversity of Leitz products , my microscope and literature collections have become quite sizable; still, the Ortholux does remain my favorite. I do, however, keep my Orthoplan on my work table, for it is also a magnificent universal microscope, and has, in my opinion, three clear improvements over the Ortholux:

1. The Orthoplan offers a widefield (30mm) trinocular tube.
2. The Orthoplan nosepiece interchanges without sliding down towards the stage (and slide), as the Ortholux does.
3. The Orthoplan has considerably more vertical working room, badly needed at times, especially with the newer 45mm working distance objectives, and some bulky stage accessories.

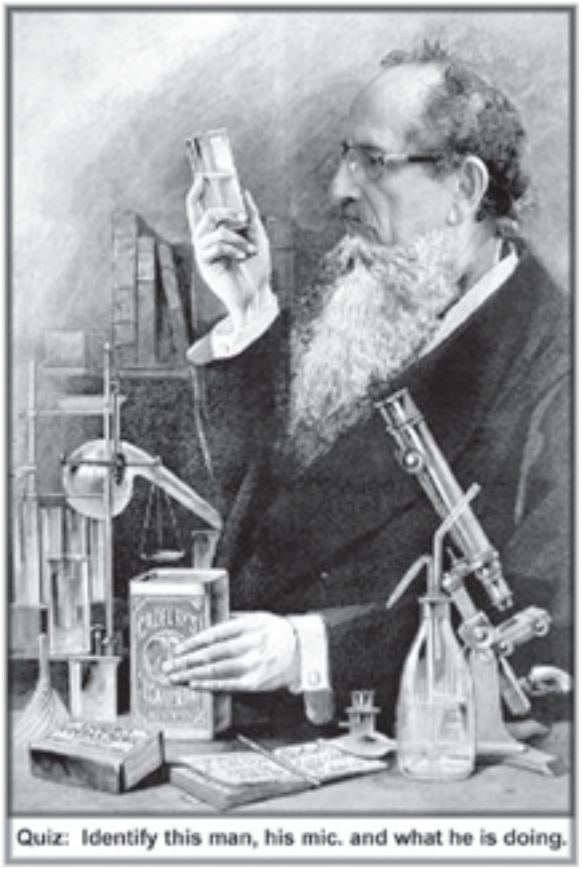
The Ortholux was the primary research microscope of the Leitz firm during its manufacture from 1937 to at least 1972, and it overlapped its successor, the Orthoplan (introduced in 1966) for a time. I always wished that Leitz had seen fit to offer a wide field (30mm) trinocular tube for the Ortholux, and I even adapted the Ortholux adapter block (used to adapt discussion, comparison, and drawing devices to the Ortholux) to accommodate a trinocular Orthoplan tube to my Ortholux, with excellent widefield optical results, although I thus created a slightly awkward appearing instrument.

Recently I had the good fortune to be able to purchase a box of old Leitz photographs from a chap in Wetzlar, and they include a number of items which appear to me to be prototypes. One of these is a true (30mm) widefield trinocular tube for the Ortholux. It is a most handsome component, precisely what I have long desired, and I am sure, had it been introduced in the 1960's, it would have sold well. This design of this "*Grossfield Bino-Photo Tube Alternative for Ortholux*" also appears to incorporate the "*precise binocular tube length maintenance despite variations in adjustment of intra-ocular distance*" feature of the later "FSA" tubes, which allows the inclined binocular tubes to be used for the precise focusing of the vertical photo tube. The earlier "FS" trinocular tube, in which the adjustment of intra-ocular distance alters, (*even though very slightly*), the overall length of the binocular tubes, does therefore not allow the phototube focus to be correctly established by viewing thru the binocular tubes. Therefore, an auxiliary focusing device for photography is required. Thus, the "FSA" trinocular tube is the best trinocular tube for taking photographs with an Ortholux.

I suspect that the firm decided not to put this "Grossfield Binocular-Phototube" component into production for fear it might reduce sales of the then new Orthoplan. The new wide-field

design of the Orthoplan was a major selling point and they probably hoped to sell many Orthoplans to institutions already possessing an Ortholux. They did manufacture the (inclined + vertical) monocular wide field ("FP-GW") tube for the Ortholux, also shown in the illustration, and these may be found occasionally today. With a Plan objective (and be sure to have the "W" tube lens in place in the nosepiece), this gives the full and flat widefield of the Orthoplan, on the Ortholux, but it is only monocular. This rather rare "FP-GW" is quite different from the relatively common "FP" monocular tube for standard eyepiece, for it incorporates a much larger sliding prism, as well as the larger tube diameter.

Perhaps one day I will find a prototype "Grossfield Binocular Phototube" for my Ortholux!



Quiz: Identify this man, his mic. and what he is doing.

INTERNET RESOURCES

by Leonie Fedel

Rochester Institute of Technology's Electrophoresis Simulation

See: www.rit.edu/~pac8612/electro/Electro_Sim.html

This site was sent in by John Fedel. It offers a follow-up to last year's July 2002 meeting on DNA analysis (Vol. 7, No. 7, July 02, p. 16), this website offers realtime electrophoresis simulation. You select the parameters of the samples, hit start and watch the animation...

Gordon Couger's website on Photography

See: www.couger.com/microscope/links/gcphoto.html

This site was sent in by George G. Vitt. It provides a great deal of useful information for photomicrography and the use of digital cameras.

The Billings Collection of Microscopes

See: http://nmhm.washingtondc.museum/microscope/index.html

Another site sent in by George. This one from the National Museum of Health and Medicine in Washington DC, provides access to the second edition of the Billings Microscope Collection. The entire book is available for download in four parts.

Blackbody Radiation

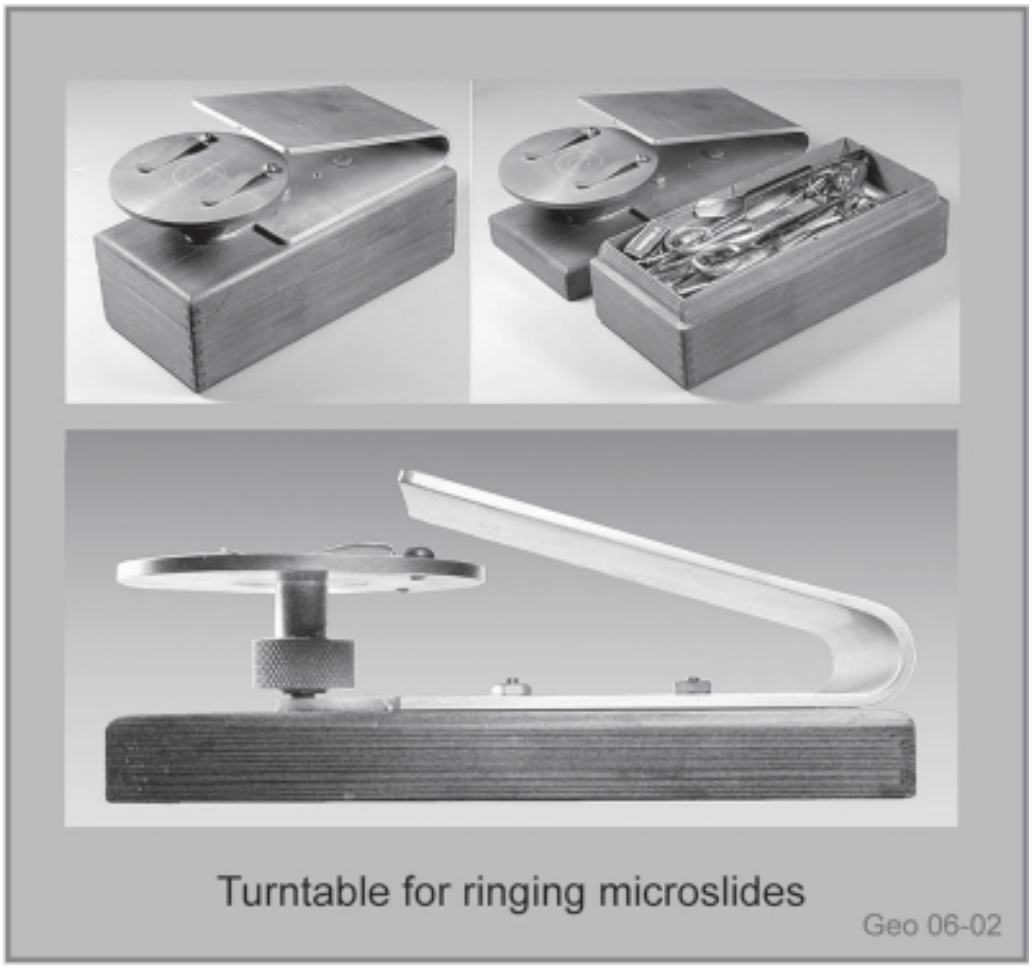
See: http://webphysics.davidson.edu/alumni/MiLee/java/bb_mjl.htm

This site was sent in by John Fedel. The site shows the results predicted by the Stefan-Boltzmann law, which predicts intensity output across varying wavelengths as a function of temperature. The law describes the "ideal" blackbody radiator.

TURNTABLE FOR RINGING MICROSLIDES

by George G. Vitt, Jr.

The configuration of the illustrated turntable has proven to be very handy and practical. The wooden box (7" x 3.25" x 2.5"), which contains various slide making tools, originally housed assorted candies. The handrest is of aluminum sheet (1/8" thick) to which is fastened the precision ground and hardened steel shaft supporting the turntable. A small steel ball (from a ball bearing) rests in a small central depression at the top of this shaft and acts as a low-friction thrust bearing. The turntable is 3.5" in diameter and is of free-machining brass. The spring clips are of phosphor bronze. Besides the job of ringing the coverglasses of microslides, I have found that it can also be used for cutting round cover glasses from rectangular ones, preferably, 1" x 2". Since the clips are of insufficient force for this use, for a firm positioning, the rectangular microslide is held to the turntable with Scotch tape at each end. The scriber consists of a 1/16" diameter tungsten carbide rod, about 4" long, ground to about a 60-degree cone at the end, and fastened within a metal draftsman's pencil equipped with a tightenable chuck which holds the carbide rod as it would an ordinary writing lead. The right hand rests solidly on the handrest and holds the scriber, while the fingers of the left hand slowly rotate the turntable CCW. This takes but a bit of practice. For the most reliable results, I use a cover slip no thicker than a #1. The shaft is lubricated with a light, non-gumming oil which insures a long spin time when ringing. □



MSSC Monthly Saturday Workshop Announcements

The MSSC hold a workshop from:

9:00am to 12:00pm on the first Saturday of every month

Locations alternate between two members' houses, Izzy Leiberman and Ken Gregory.

The workshops provide a chance for 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.

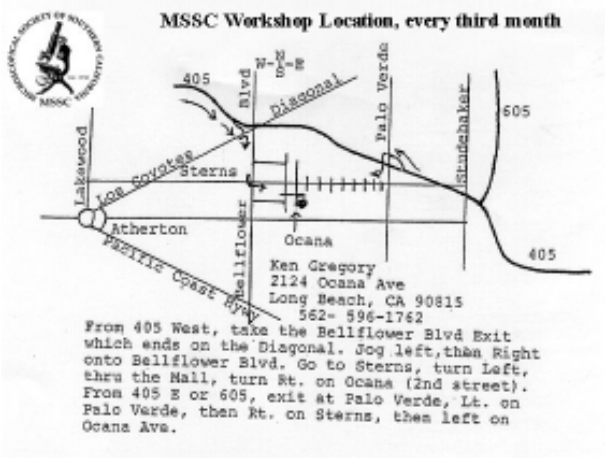
An optional lunch after each workshop will be held at the local Coco's.

The schedule for 2003 is as follows:
Jan. 4, 2003 at Izzy Lieberman's residence
Feb. 1, 2003 at Izzy Lieberman's residence
Mar. 1, 2003 at Ken Gregory's residence
Apr. 5, 2003 at Izzy Lieberman's residence
May 3, 2003 at Izzy Lieberman's residence
Jun. 7, 2003 at Ken Gregory's residence
Jul. 5, 2003 at Izzy Lieberman's residence
Aug. 2, 2003 at Izzy Lieberman's residence
Sept. 6, 2003 at Ken Gregory's residence
Oct. 4, 2003 at Izzy Lieberman's residence
Nov. 1, 2003 at Izzy Lieberman's residence
Dec. 6, 2003 at Ken Gregory's residence

There will also be a field trip to collect specimens from Madrona Marsh, Torrance California on Sat April 26, 2003 at 9.00am. □

Izzy Leiberman's Residence:
3300 Corinth Avenue
Los Angeles CA 90066
310-391-6076

Ken Gregory's Residence:
2124 Ocana Avenue
Long Beach, CA 90815
562-596-1762



MSSC Monthly Meeting Announcements

7:00pm 19th March, 2003

This month we are expanding on the topic of illumination. Mr. Gregg Kleinberg from the Tamar Technology Co. will give a presentation on the EtherGlow illumination system which was designed for the Olympus BHS. Mr Kleinberg will be accompanied by a colleague, David Marx Ph.D. (optics). Dr. Marx was the Chief Optical Engineer of Sight Systems, which ultimately became Tamar Technology. For the presentation they will set up an Olympus BHS microscope (donated for the evening by John Fedel MSSC member) with the EtherGlow illuminator. Following this presentation, Jim Solliday (MSSC President) will show some results that can be gained using the EtherGlow filter.

7:00pm 16th April, 2003

This month, Dr. Ken Gregory (MSSC member and longtime teacher of Anatomy and Physiology) will give a talk on "The Functional and Histological Anatomy of the Human Gastro-Intestinal Tract". His talk will be accompanied by slides illustrating peptic ulcerations of the esophagus, stomach, duodenum and pathophysiology of the colon. The second half of the meeting will provide an opportunity for members to share what they have been working on.

7:00pm 21st May, 2003

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. Also microscopes, illuminators and pipettes and tools to play in the water.(Extra microscopes are always a good thing to bring for guests to use.) We will also be presenting a short slide show illustrating our field trip to the Madrona

Marsh. For those who managed to attend the field trip you already know what a great success it was and how valuable a resource this preserve has become. We will show an introduction to the microscopic life of the marsh using digital imaging.

7:00pm 18th June, 2003

This month our main speaker is Dr. Kevin Hoffman, Senior Insect Biosystematist for the California Department of Food and Agriculture. The title of his talk is "Exotic Fruit Fly Exclusion Programs in California". He will present a general overview of the programs used in California to prevent colonies of exotic fruit flies from becoming established, followed by a more specific overview of the Mediterranean Fruit Fly and its exclusion programs. After Dr. Hoffman's presentation, Alan deHaas will continue with his lecture series on the microscope. This month, he will provide an explanation and demonstration of flat-field optics.

All meetings are held at New Roads School (see map above).

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