



# MicroNews

San Francisco Microscopical Society

Volume 7, #2 March 2012

## SFMS Board Meeting

February 2012,

### VOTE RESULTS

The Revised Articles of Incorporation were submitted to the membership and were overwhelmingly approved. The final vote to approve was 35 affirmative votes, one disqualified vote, out of a total of 46 members who were sent ballots.

The board extends a sincere thanks to the membership for their support.

HS.

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## March 14<sup>th</sup> General Meeting, San Francisco International Airport Terminal, South End. 7:30 PM,

### ADVANCEMENTS IN MICROSCOPE DESIGN FROM THE 16TH CENTURY TO THE PRESENT AS EXEMPLIFIED BY THE GOLUB COLLECTION AT SFO

Dr. Steve Ruzin, our speaker for the Wednesday, March 14 meeting, will address certain mechanical and optical advancements in microscopes dating from early simple magnifiers of the late 1600s to compound microscopes of the early 1900s. The microscopes on

display at SFO International Airport will be discussed in this context. The talk will take place in the International Terminal where we will walk around each of 20 display cases showing 65 microscopes from the Golub Collection. The cases are organized into

"themes", which he will discuss with the group.

It may seem an unusual place for holding a meeting of the SF Microscopical Society since aviation now includes some of

*(Continued on page 3)*



Golub Collection # 253 from Italy circa 1660



Golub Collection #129 made by Passemant in Paris, France, circa 1745



Golub Collection #150 made by Powell & Lealand in London, England, 1861,

## Museum Microscopy In Vienna

The last time you visited a museum you probably saw only an occasional display showing something magnified, perhaps by a lens placed in front of the object, more in order to emphasize its smallness than to clarify its structure. It is rare for a microscope to be displayed so that the public will manipulate it and actually observe objects magnified 100 to 400 times. The difficulty of properly utilizing light microscopes by inexperienced observers is a major reason why such displays are not found in museums. Maintaining an expensive instrument when many hands try to force knobs to turn, eyepieces to move (or be removed) and specimens to come into focus becomes an impossible task for the museum staff.

How then, do some museums address this problem successfully? The Oakland Museum of California has a display in the natural history section that shows life among the sand grains at the beach. Each sand grain is the size of a boulder and the organisms are delicately woven through the interstices where they find food, reproduce, and create an ecosystem that is essential for the health of any beach. (See also Micro News, Vol. 6, #2, Arenophilia Microscopy).



Translucent panels showing diatoms etc. used to cover windows in the microscope display room. Vienna Museum. 2011, HS.

In September, my wife and I visited the Vienna Natural History Museum in Austria and saw another example of magnification through accurate model construction. The common housefly, about 18 inches long, was displayed in a large case representing the surface of a kitchen table. The legend asks: **“Who smells with the antennae, tastes with the**



Fly model about 1,000 x in glass case with printed description. Vienna, 2011

**feet, and digests food outside the body?** It may pick up only liquid nutrients with the proboscis. Solid particles, like crumbs, are therefore liquefied by saliva, the pap is carried to the crop and is then repeatedly vomited and reabsorbed. The continuous migration between food sources and oviposition

*spots on excrements facilitates germ radiation. Particularly stomach and intestinal diseases may be transmitted this way. The constant temperature of stables enables it to survive the freezing season”.* The message is clear enough even if the parts of the fly are not labeled. While the English version sounds a bit stilted, the German is quite plainspoken.

The museum is located in a large palace in what is the Museum Quarter. We walked through many rooms with interesting exhibits of animals from all over the world and saw some anthropological displays including the famous Venus of Willendorf, a fertility figure estimated to be from 25,000 to 20,000 B.C. ( See previous issue for image.) One hall was devoted to the microscopic and besides displaying some old microscopes illustrated here, it had a screen on which a movie of pond life was continuously displaying protozoa such as paramecia, volvox and stentor. A number of microscopes built into a large cabinet could be used by the public but little adjustment was possible and the young people who were in the hall moved quickly from one to the other without much apparent learning taking place. Translucent charts showing radiolarians and some diatoms covered windows. No information was provided about modern microscopy, an oversight that must have left people with the impression that this was an ancient and dying technology. The period pieces that were on display reinforced the idea that little progress had been made since the start of the 20<sup>th</sup> century.

Surely, the great microscopy industry can be harnessed to be a partner in producing modern displays that are both fascinating and instructive. Museums have done well in the area of space and astronomy. It is time they do as much for the inner space exploration, the space that exists between sand grains, soil particles, teeth and gums, under fingernails and the thousands of pores of our

skin. Life in capillary could fill a large hall. Microscopes with remote controls have traveled to the moon and Mars. They should be in our museums letting people explore themselves and life at the microscopic scale.

(Continued from page 1) General Meeting

the largest flying objects ever built. Although Zepelins and American dirigibles were larger, they carried far fewer passengers.

What prompts this meeting at this location is the exhibition in terminal of microscopes that range over several centuries.



Exhibit of microscopes at the SF International Airport Museum, South End 2012.

Our esteemed member, Dr. Steven Ruzin, is Director of the CNR Biological Imaging Facility (BIF) and Curator of the

Golub Collection of antique microscopes at UC Berkeley.

Besides teaching classes in microscopy at the College of Natural Resources (CNR) he directs the teaching and research efforts in the BIF, and maintains the Golub collection as well as its website.

Two microscopy classes Ruzin teaches are Techniques in Light Microscopy and an

annual workshop in Plant & Animal Microtechnique that train the student in modern and classical methods in preparing micro-

scope slides. He is the author of *Plant Microtechnique and Microscopy*.

Since a number of instruments are on display at the south end of the main hall of the International SF Terminal, this will be a great opportunity to have him share with us his special knowledge of these instruments.

**HOW TO GET THERE**  
Parking at the airport can be quite expensive so it would be wise to car-pool. SFMS will cover your cost; see the next paragraph. BART is a good alternative, particularly for seniors who buy a senior ticket in advance at a supermarket or have a clipper card. There is a surcharge for going to the SF Airport on BART. Please come and support this special event.

**SFMS WILL PAY PARKING**

ASK FOR A RECEIPT AS YOU EXIT THE GARAGE

FOR ANY MEMBER WHO SUBMITS A PARKING RECEIPT TO THE TREASURER FOR THE DATE AND TIME OF THE MEETING AT THE SAN FRANCISCO AIRPORT AND BRINGS AT LEAST ONE PASSENGER, (MEMBER OR NOT) TO THE MEETING.

Still not coming? What has been your contribution to our programs? Tell us what would interest you and make you an active member.

We are looking for your ideas and your commitment to make SFMS THE organization for microscopists. HS

**ABOUT THE SEX LIFE OF SIX LEGGED CREATURES**

The thought of making a serious study of the anatomy of bees has occasionally intrigued me but I have been unwilling to devote the time needed to capture and dissect these valuable pollinators. I doubt that I could add one new observation to the multitude of studies that have been conducted since ancient times.

When on my recent visit to the small but widely used Oakland Branch Montclair Library I saw a new book with the intriguing title *Sex on Six Legs: Lessons on Life, Love & Language From the Insect World*, I immediately added it to my small pile of books to be checked out for three weeks. Written by Dr. Marlene Zuk, professor

of biology at UC Riverside, it has the light touch of an excellent story-teller with vast experience in the field (of entomology).

It may be my impatience or perhaps a disposition to be contrarian but I often begin a book three or four chapters into the account. If highly satis-

fied with what I read, I will return to the beginning. It may also be true that in the case of this book, it opened to this page by accident and I saw the word "bees" and started reading. I can't remember what made me explore the next few paragraphs but I found what I would like to share with you, - bee anatomy has confused people for a long

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**CORRESPONDENCE: IRS 1023 On Going Saga.**

From: Myron Chan [myron-  
chan@rocketmail.com](mailto:myron-<br/>chan@rocketmail.com)  
To: sfmicrosoc-board [sfmi-  
crosoc-  
board@googlegroups.com](mailto:sfmi-<br/>crosoc-<br/>board@googlegroups.com)  
Sent: Sat, Feb 25, 2012  
1:12 pm  
Subject: [sfmicrosoc-board]  
IRS 1023 on going saga.

Hi Folks:

The deed is done. I sent off a fax to the IRS at 10:45 AM (PST) on Feb. 23, 2012, that included our restated Articles of Incorporation endorsed by the Secretary Of State plus the IRS (Oct 25, 2011) letter with my signature that under the *Penalties of Perjury* states that all statements are the truth. I also included the letter that limited our response to 90 days for the *suspense status* dated Jan 25, 2012.

At 6:30AM on Feb. 24,

2012, I called our case handler Stephanie Taylor to ask if she had received the information. She told me that it would have to be scanned first, then the case would have to be opened up again, and she would not get it until 2 weeks later. I gave her my phone number and told her to give me a call when she gets our case. Cross our fingers and hope the fax worked, so that is where we stand for now.

Debbi , thanks for all your help, as I feel we would have never gotten this far without you.

**Myron Chan**, Treasurer.

From Henry Schott ([hschott@aol.com](mailto:hschott@aol.com))  
Sent: Sat, Feb 25, 2012  
3:00 pm  
Subject: [sfmicrosoc-board]  
IRS 1023 on going saga.

Dear Debbi (Brusco):

I want to express my sincerest thanks for all that you have done to get this important process accomplished. It has been through your leadership and perseverance that we have finally completed the State requirements so that we can provide the IRS with the proper documents. SFMS is fortunate to have your volunteer effort. I was particularly impressed with your ability to research and tap into so much information on the internet. Thank you for the many hours that you have spent on behalf of the Society and for your willingness to continue to see this very important project to fruition.

Sincerely

**Henry Schott**, Corresponding Secretary and Editor, Micro News.

**MICRO NEWS** is published four times a year, January, March, and September, November.

**SFMS** meets five times during the year: January, March, May, September and November.,

**The May Meeting** has not been scheduled at the time we went to press but will be held on the second Wednesday of the month, May 9, 2012, probably at the Randall Museum in San Francisco. You will receive an e-mail notice of the meeting with further details.

**Our Web Site** also will announce our meetings:

[www.sfmicrosoc.org](http://www.sfmicrosoc.org)

(Continued from page 3) *SEX LIVES*

time.

It may have been in elementary school that you first heard of bee populations as being composed of workers, drones and queens. Drones hang around the hive and are fed by the workers. They seem to have only one important function even though they are larger than the workers. They try to be the one who impregnate

the queen during the mating flight. We may postulate that the strongest flyer will get to her first but who knows what the proper strategy is, unless you are a drone on the spot. The Greeks were totally confused about the workers who are females. They refused to believe that animals with such potent weapons as a stinger could be female.

You do not get to see what is

going on in a hive unless you are a beekeeper with enough curiosity to be very observant. If all that you care about is honey, then if you observe a single large bee you apply to the colony the form and function of your own society and name it the King! While several writers and beekeepers had guessed at the truth, it was the Dutchman Jan Swammerdam, a microscopist, who is credited with the discovery that the

“King” had ovaries and should properly be crowned a queen. He described this anatomical observation along with many other observations in *Historia Insectorum Generalis* (The Natural History of Insects, published in 1669).

Born in Amsterdam, on February 12, 1637, he entered the University of Leiden to

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## HISTORIC AND ANTIQUE MICROSCOPE COLLECTIONS.

The following list is a collection of links to collections of antique microscopes and instruments. To make effective use of this list, please copy the title and search in Google. Most of the collections have illustrations of the instruments. For translations of German descriptions, consult members H. Will or H. Schott.

### Museum Optischer

InTstrumente: *A wonderful collection of early German microscopes.*

Mikroskop-Museum: *Another German site devoted to antique microscopes.*

Bononiaemicroscope: *The collection of the Oris group of Italian collectors.*

The Golub Collection: *Microscopes from the 17th to 20th centuries.*

Origin and Development of the Light Microscope: *An outstanding illustrated history of the microscope.*

Die Mikroskope von Simon G. Plossl: *Microscopes made by Simon Georg Plossl (1794-1868).*

Giovanni Battista Amici (1786-1863): *The Italian optical instrument maker (Instruments at the Scuola Normale Superiore).*

Jeroen Meeusen: *A private collection of interesting French microscopes.*

Optik Online-Virtuelles Museum: *A collection of mostly German microscopes.*

The Billings Microscope Collection: *The collection*

*of the Medical Museum of the Armed Forces Institute of Pathology.*

George's Microscopy Pictures: *Photographs of vintage microscopes.*

Des Pasteuriens & leur Microscope: *Some famous French trained microscopists with their microscopes.*

Molecular Expressions Museum of Microscopy: *Images and descriptions of antique microscopes.*

Microscopes in the Boerhaave Museum Collection: *Browse the links or use the search box.*

Department of the History of Science Harvard University: *Microscopes in the collection.*

Museum of the History of Science Oxford: *Some microscopes in the collec-*

*tion (browse or use the search box).*

The Lundy Antique Microscope Collection: *American and European microscopes.*

National Museums Scotland online collections database: *Some microscopes from the museum collection.*

Willkommen im virtuellen Museum der Wissenschaft-Historische Mikroskope: *Some microscopes from the museum collection.*

The Moody Medical Library's Collection of Historical Microscopes: *Microscopes from the 18th to 20th centuries.*

East Carolina University: *Historic Microscopes at the Laupus Health Sciences Library*



The Boerhaave Museum produces and sells Van Leeuwenhoek type microscopes fitted with lenses used in telephone cameras. Based on one of the several original microscopes in their collection, these replicas are stamped with the museum's name and have other distinguishing features. Note the fine box that is part of the package. Magnification is about 80 X but this is more a museum money maker than a useful instrument at 195 Euros. Add shipping and taxes, and it costs \$300.

# Electronic Communication and Voting

The Society has, for a number of years, informed you of meetings and other events by electronic means. The board has used both the web site and our Yahoo Group notification process to inform you about the Society but has been advised to seek your consent to expand this process to include voting. Back in 1954, and for a number of years thereafter, most of the membership was concentrated in San Francisco but over time, individuals moved further away including across the Bay and down the peninsula. Now we have some members who are

scattered in other states and who are disenfranchised because they are unable to attend meetings where voting takes place as our constitution/by-laws specify. With the adoption of the Revised Articles of Incorporation, the revision of the by-laws is the next logical step. The current by-laws, which are our constitution, have not been reviewed or updated in many years and need to reflect better our procedures.

In January, 2012, the Society consisted of 46 members, divided into three categories: 24 Life Members, 20 Yearly Dues-paying Members

and 2 Honorary Grant (Temporary) Members.

The *Application for Membership* has been revised to provide for a sign-off on electronic communication and inclusion of information in the directory. The board has been advised to seek your signed consent to agree to electronic communication and to electronic voting when it is implemented. This will save time and provide quicker and wider feedback to board actions that require your input. It would seem logical to ask you to respond electronically but since we do not have the permission from

individuals to do so, the board will have to poll you by mail as it did for the Revised Articles of Incorporation. If this issue of Micro News contains a return envelope, please mark the proper boxes below and sign to express your vote and grant the society permission. If the society does not receive a response from you, a second effort will be made to solicit your support for these requested permissions but that will place a strain on the officers who are all unrewarded volunteers. For their sake, please take this small task seriously.

- By marking this box, I consent to having my name, address, phone number, e-mail, and membership included in the Directory.
- By marking this box, I consent to receipt of electronic transmission by the corporation for purposes of notice, written ballots, proxies, general information, and all other communications. This may include email, electronic forum such as a Yahoo Group, or other electronic methods.

*Notwithstanding your consent, you shall have a right, upon written request, to have an electronic communication provided to you on paper or in non-electronic form. You may withdraw your consent at any time by written notice to the Recording Secretary at the following address: SFMS Secretary, 435 Melrose Ave., San Francisco, CA 94127-2217*

Print Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

**Return this page or a copy of the above,**

*(Continued from page 4) C. elegans*

study medicine and earned an M. D. there in 1667. He only practiced medicine occasionally to earn enough to continue his research in anatomy of insects and used his observations to bolster his case for epigenesis described in his *Historia Insectorum Generalis*. In 1658, he was the first to observe and describe red blood cells and an early user of the microscope.

While his observations and experiments were of great

significance and provided some fundamental insight in neuroanatomy and the lymphatic system, there were other areas where he totally failed to find reasonable solutions. He did not believe that the male bee copulated with the queen bee despite spending five years in beekeeping. He deduced that she was impregnated by the *aura seminalis*, the smell that he detected in the hive. It was not until the mid 1900s that the

drone swarms were discovered by naturalists. It is a few of these virgin males that will mate with the queen and immediately fall to the ground dead, sometimes leaving their semen sacks attached to the female.

Malaria, one of the great scourges of mankind, killed Jan Swammerdam at age 43.

HS



Stamp



FROM:

## Micro News

San Francisco Microscopical Society  
20 Drake Lane  
Oakland, CA 94611-2613

TO:

### MEMBERSHIP INFORMATION

To join the Society, fill in the form available at [www.sfmicrosoc.org](http://www.sfmicrosoc.org). Mail it to

SFMS Treasurer  
435 Melrose Ave  
San Francisco, CA 94127

Make check out to SFMS. Dues are \$12.- /calendar year. Life membership is \$144.00

## Old Postal Microscopical Society

The SF Microscopical Society has its roots in 1872 so our logo tells us. The following year, in England, someone had the good idea to share microscope slides by sending them through the postal service. So, *Netflix* was born. Ah! If only they had been able to have a permanent patent on **that** idea.

Try to picture the 1885 living room of a middle class British home. There were no TV sets or radios, few modes of communication, and lots of books to read. Perhaps they had a stereoscopic viewer and eventually a gramophone with which to entertain the kids. And they might have had a microscope. But what was there to see under the microscope? Slides were not available at the corner market so getting a regular supply through a lending library was an ideal way to explore that hidden world. What is equally amazing is that the PMS (Postal Microscopical Society) still exists.

Its primary aim is the circulation of boxes of microscope slides and notes to the 350 members who contribute to a lively and friendly society. Members are organized into '*Circuits*'. Boxes of micro slides are circu-

lated, accompanied by notebooks in which each recipient records his comments, criticism, and perhaps additional notes on the mounts themselves, before passing the box on to the next member of his 'circuit'. The Society has 15 circuits and membership is open of anyone interested in the Microscope. Note that there is no longer a USA circuit.

The essence of the Society is the friendly and helpful interchange of information. Help is offered to beginners and experts alike by the maintenance of a panel of experts with experience or specialized knowledge in particular fields. Thus, help is only a postage stamp/phone call/email away and the beginner has access to a mine of information.

<http://www.manchestermicroscopical.org.uk/> is your source for more information. It is possible to get slides from them on a loan basis if I correctly interpreted their web site. You will get a friendly response if you identify yourself as a SFMS member from: [Secretary@postal-microscopical-society.org.uk](mailto:Secretary@postal-microscopical-society.org.uk)