



MicroNews

San Francisco Microscopical Society

Volume 7, #3 September 2012

GENERAL MEETING

WEDNESDAY

September 12

Randall Museum

7:30 to 9:30

As we go to press we do not have confirmation of the proposed program.

It would be fun to look a some of your most interesting slides. Bring your two or three slides with an explanation on a card to put next to the microscope for each one in LARGE computer print.

A NEW ERA 2012-2013 PRESIDENT'S MESSAGE: by Peter Werner

The end of summer marks a new year of activity for the San Francisco Microscopical Society. The big news is that we have finally been granted 501(c)(3) status by the IRS, and our nonprofit status has also been recognized by the State of California. As you may remember, it was just over a year ago that our society was the beneficiary of a generous bequest of over \$85,000 from the estate of Robert D. Hancock, a life member of SFMS. We are now in the position to do a great deal of good, contributing to science education in schools and colleges, and to the public at large.

Of course, stepping into this new role is not an easy one. We have long been a low-key society, with modest assets and even more modest visibility. We now find ourselves with assets that need to be used, yet finding ways to use those assets in a way that actually makes a difference presents a challenge.

The board feels that one area in which we can clearly make a difference is through grants and scholarships for science education. We could perhaps provide grant awards for Northern California high school teachers toward the purchase of imaging equipment, such as a good-quality microscope, camera, or other piece of equipment. These grants would be given annually, on the basis of competitive applications. There are already innovative programs such as the Bay Area Biotechnology Education Consortium (BABEC) that could put us in touch with creative educators who could use funding.

We might also provide a similar annual scholarship to college students who are studying imaging. Scholarships could go to university undergraduates or graduate students, but perhaps the most "bang" for a scholarship buck might be for promising community college students who are interested in studying microscopy. We

now have two outstanding microscopy education programs in northern California community colleges, the optical microscopy program at Merritt College, (from which I graduated), and the long-established electron microscopy program at San Joaquin Delta College. Ohlone College, (where I currently work), also has a state of the art scanning electron microscope (SEM) and an atomic force microscope. Though only a few classes in SEM are offered, Ohlone's science program is growing and perhaps at some point, there also will be students specializing in imaging.

We are looking for help in deciding how to spend the money, and to that end, we would like to form a **Scholarships and Grants Committee** to oversee the disbursement of a portion of our funds in a way that does the most good. We would like this committee to not just include the current members

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Farm to Fermentation Festival September 16

SFMS goes where microscopes are needed to help the public become aware of the micro world. Come to the **Tara Firma Farms** on Sunday, September 16, 2012 from 11 to 5 PM. It will be a learning experience. SFMS will have two six-foot tables to help people understand the fermentation process and see the responsible organisms. We need you to help man/woman the tables and recruit new members.

FERMENTATION FESTIVAL

is located at

3796 I (eye) Street, Petaluma
To get a gate pass, e-mail Peter Werner (pgwerner@sonic.net)

Come join us for a fun-filled day of learning, tasting, and celebrating the tradition of fermented foods!

The Festival will feature an amazing lineup of experts from the local foodie and fermenting worlds; how-to workshops so

you can learn how to DIY at home; vendors selling their tasty fermented products, and more!

Keynote Speakers

Sandor Katz, Fermentation revivalist and author of several books on fermentation including Wild Fermentation and The Art of Fermentation
Hannah Crum (aka The Kombucha Mamma), owner of Kombucha Kamp

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PRESIDENT'S MESSAGE
(Concluded)

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of our board, but perhaps representatives from education and industry, and most of all, members of our society. If you are interested in participating, I'd love to hear from you. Drop me a line at pgwerner@sonic.net.

I hope to involve the society in other public natural history events sponsored by a variety of groups over the next year. We already are scheduled to take part in the **Farm to Fermentation Festival** in Petaluma on Sunday, September 16th (see details in this newsletter). Events such as the *Bay Area Science Festival*, the *MSSF Fungus Fair*, and *Bug Day* at the Randall Museum each provide opportunities for public outreach and education of which we should take advantage. Here too, we need your participation at these events to help with our booth. Support your Society by contacting me. If you would like more details, drop me a line.

pgwerner@sonic.net.



Friday Harbor Administrative building with faculty laboratories on the ground floor.

FRIDAY HARBOR MARINE

Ask any commercial fisherman if his catch is as good as it was twenty years ago and the answer will be: "Not at all, no, there are fewer fish in the net and they are not as large as they were when I first started fishing." We know the reason. The ocean is 'the commons' where nations can take without putting back. In England, before all the land was claimed by the nobility or the king, the land not plowed by farmers was held in common by a village and individuals could graze their animals on the native grasses that grew there. As the population grew, more animals were put out to graze as the unfenced lands shrank in size. Soon, there was not enough grass for the animals and the plants were eaten to the point that the roots were damaged causing weeds to invade what had been healthy pasture. No one individual was to blame but the collective action of all caused the loss of plant life and land use. So now it is the same with the oceans. No one nation is responsible for the decline in fishing but our constant demand for sea



The Scanning Electron Microscope (SEM) used for imaging marine life at Friday Harbor.

food is depleting the stocks that not only fed humans but also the large predators in the oceans and in our rivers and lakes. The changing climate contributes to this depletion in a significant way as does our tendency to pollute all bodies of water.

If you grow up and live near the west coast, interest in the marine environment is a natural extension of your curiosity about life and the environment. At San Francisco State University, where I was pursuing a masters degree in biology, Dr. Hensil taught a course in marine invertebrates. It was under his tutelage that I first began to appreciate the complexity of the marine food web. While we did harvest some specimens, we also learned to replace the boulders we had turned over to see the underside as closely to their original position as possible. He helped his students gain a wider knowledge of life and our environment while encouraging us to complete manageable research projects.

Whenever the opportunity arose, I visited marine stations and aquariums. The west coast has its share of important marine stations

including: *Bodega Marine Laboratory*, *Friday Harbor Laboratories*, *Hatfield Marine Science Center*, *Newport Oregon*, *Hopkins Marine Station - Stanford University*, *Long Marine Lab of UC Santa Cruz*, *Marine Science Institute (USCB)*, *Moss Landing Marine Labs*, *Monterey Bay Aquarium Research Institute (MBARI)*, *Romberg Tiburon Lab of SF State University*, *Scripps Institution of Oceanography*, *Shannon Point Marine Center*, *W. Washington State*. I have visited a few of these facilities but it was my recent opportunity to visit the Friday Harbor Laboratories of the University of Washington that prompts me to write this report. Sara Dickerman, in a *New York Times* article, describes the conservation spirit of the San Juan Island people in the following: "Last year, the San Juan Island National Historic Park grew by 312 acres with the purchase of densely forested Mitchell Hill. On Lopez Island, a 50-year lease signed by the state Department of Natural Resources in 2009 now protects the Lopez Hill area from logging; a web of public trails winds past mossy conifers and madrona trees with peeling cinnamon-red bark. And

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CORRESPONDENCE

(Rob, past vice president and life member, would love to hear from any member who cares to contact him. He now lives on the Oregon coast.)

Hi, Henry. Keeping it short...

My daughter, Brookeanne, would like to get her 4 children (all delightful) a 2nd microscope. They have a toy now, but I thought I'd like to get them a stereo zoom with a ring light and stand. I've had such a great time with mine. And, half the fun is carting it around in the very cool case you built. Twice a year I run all day events at our local small elementary school where all the different grades look at small stuff in both the Labophot and Olympus stereo. The students all love it, and truly ask for more events. So, the time folks at SFMS spent to teach me rudimentary microscopy is paying off in a small way. I miss participating with everyone at SFMS a bunch.

I've looked on Ebay and see a variety of used, \$325 for the scope, stand not included at that price. Would you or anyone in the Society have a recommendation? There are a number for sale that

appear to come from China and have all kinds of bells and whistles. But I recall you and Helmut some years ago relating to the scopes available then as junk.

Your guidance?

Best wishes to you and Marilyn.

Robert Hoover
rhoover@hooverandassociates.com

I have not been to the Bay Area for some years. Yes, the company (www.electratherm.com) is gaining traction.

I will look forward to attending a SFMS meeting and availing myself of the downstairs room at your place if it remains open. Another good dinner out should attach to the event. I'll be more aggressive about getting down your way.

My cell is the same 510-507-8366. Home phone is 503-392-4516 for about 5 years. Shows we're not in touch, doesn't it?

Yes, fondly. Rob
 (He was the Vice President of



In the well-equipped graduate student laboratory



The Nikon Confocal Microscope

(Continued from page 2)

some smaller parcels have the air of a secret about them, like the spectacular Watmough Bay Preserve on Lopez, with a trail that leads to a strip of beach on a wooded inlet, its moody water as magically lighted as a Bierstadt painting." My wife and I joined other hikers to explore the trails on these islands located in the Puget Sound of Washington State. We were housed in Friday Harbor, a small community on San Juan Island just a mile and a half from the world famous laboratories. Having just missed their open house by a few days, I was determined to find someone as a guide after gaining permission to see the

facilities during one afternoon when the group was visiting the Whale Museum. I arrived on campus just as the entire faculty was gathering for a faculty meeting but was kindly directed to a building where their confocal microscope was housed and where graduate students were working. It was a start.

The largest building is the administration building but scattered along the wooded shore are a series of buildings, each the size of a large laboratory class, arranged internally to accommodate marine tanks and troughs as well as laboratory benches where instruments can be placed. There were plenty of student microscopes where

they were needed. My interest was in what use was being made of more advanced instruments. I met two graduate students, Gabrielle Winters and Emily Dabe who briefly discussed their research with me. (See upper photo). Gabrielle took me downstairs into the basement to the confocal microscope that I photographed. She then took me to a nearby building where all the tables had microscopes. Gabriella and Emily were looking at ways to study the development of neurons in Ctenophores. I returned to the administration building and discovered that much of the lower floor was composed of small individual laboratories where faculty could

conduct research. One professor was photographing something though his microscope but I did not want to disturb him since he seemed intent on his work. I spent the rest of the time before dinner taking pictures of the buildings and small harbor where the research vessel was moored. Two days later, having returned early from a not-to-strenuous hike, I returned to the Marine Station and met Dr. Charles O'Kelly who showed me the scanning electron microscope. I may continue this article in the November edition if space is available, H. Schott, Editor

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Mary Karlin, Sonoma-based author and curator of [Elements of Taste](#), a website dedicated to seasonally inspired cooking

Jill Nussinow (aka the Veggie Queen), author of [several books](#) on pressure cooking and vegetarian cooking

Lunch: There will be several food options available at the Festival (including vegan). Or feel free to bring your own lunch and picnic at the Festival.

Farm Tours: [Tara Firma Farms](#) is the pastoral setting of the Festival. There will be 15-minute guided farm tours every half-hour throughout the day. Tara Firma Farms started in 2009 with a vision to serve the local community.

Situated on 300 acres of rolling hillside in southwestern Petaluma, the farm and its dedicated staff feed over 600 families a month, while maintaining responsible, sustainable farming practices. By doing so, the result is healthy soil, happy animals, and the highest quality food!

For those not wanting to work, Farm to Fermentation Festival admission is \$32.64 before labor day and 37.92 after.

Souvenir Sampling Glasses: With your ticket, you'll get a souvenir sampling glass to taste all the wonderful fermented goodies offered at the Festival.

<http://www.farmtofermentation.com/tickets/> for more information.

A Nonprofit Odyssey

President Peter Werner announced at the board meeting in mid March 2011, that he had received a phone call from a law firm in Nevada announcing that S.F.M.S. was receiving a bequest from the Robert D. Hancock Trust. Robert had been a life member but since he ran his business in Nevada we had never seen him at a meeting. He died in 2000 and his wife died in 2006. The amount was around \$80K, which, you will agree, was a lot for our Society. With just a year as treasure under my belt, we now had to get serious!

I could see that the organization was spending more than it could generate from membership dues but with the reserves we had in the bank, we could last a long time before we would be bankrupt. Helmut Will, treasurer during much of the 1990's and into the start of this century, had accumulated the reserve. When Henry Schott was treasurer back in 2008, he was going to apply for a 501(c)(3), the non-profit designation from the IRS, but the fees alone were

\$800.00 then, and that was quite a sum of money for our Society since the average income was around \$300.00 a year. We were spending more than that each year to run our Society. The State of California had granted us the non-profit status back in 1954 when we incorporated. The Federal Government was not interested in an organization that was dealing in such small amounts of cash. Now, with \$80,000 in income, there was going to be renewed interest and we wisely preferred to stand on the right side of the law. What we did not realize was that a lot had changed since 1954. The Feds were now leery of nonprofits that might channel money to who-knows-what subversive organization.

We could have paid taxes on this windfall but we did not want to give a lot of this bequest to the IRS. We decided to file for the Federal nonprofit status but first we had to rejuvenate our status with the State of California since the state bureaucracy had, without informing us, changed our status to "inactive". This

made us unqualified for California's nonprofit status. With the help of a NOLO Press law book on filing for 501(c)(3) status we got the application process started and sent it to the California Tax Franchise Board on April 23, 2011. It seemed that neither the State nor the Federal governments were satisfied with the wording of our 1954 Articles of Incorporation. We received an IRS letter requesting us to add language that met Federal guidelines and they needed a response in two weeks. New and simpler wording was required spelling out clearly what was to occur if and when the Society was dissolved. We had to spell out that any remaining assets had to go to a governmental body or another nonprofit organization and the membership had to vote in favor of the revised Articles before they were sent to the State Attorney General for approval.

We could not possibly get our membership to vote in two weeks or get the State of California to respond in that time frame so the treasurer

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started using the telephone to get the east coast bureau to give us an extension. Calling them was not easy, as they would not answer the phone during the day and not return messages left on their voice mail. What worked best was to call them at the start of their shift, i.e., 6:00AM for me on the west coast. After receiving three extensions I was sent a letter stating that our case was suspended for a 90 day period, and if no action was taken, we would have to file all over again, and pay for another filing fee of \$850.00 too.

Meanwhile the State was giving us the run around, having to deal with three different agencies, The State Attorney General, The Secretary of State, and the Franchise Tax Board. It was fun fun fun! These folks do not communicate with each other. We learned that we were suspended as a nonprofit for not filing certain forms but only someone who was constantly aware of the changing requirements by the state would have known that.

At this point, our Secretary Debbi Brusco told

us we need an attorney, otherwise, we are just wasting time and a lot of effort for nothing. This got us going in the right direction. The board considered it a good investment to find an attorney who was familiar with the process of forming a nonprofit organization. Her leadership was a vital contribution. To ward off the re-filing fees I had sent a notice that we had asked the membership for their vote to change the wording amending our Articles of Incorporation to agree with the IRS guidelines. They responded with another form letter, like the first one, which gave us again 2 weeks. I had to call them up again to get an extension. The attorney helped us draft the demanded amendments to fit the new 1980's rules that were different than those filed by the Society in 1954. You voted and supported the action of the SFMS board moving the process forward.

I kept calling our case handler on the east coast early in the mornings, giving her excuses to get our extensions for the delays of getting the State of California Franchise Tax exemption to the IRS. By now, we were on our

third handler who often seemed to be trainees. Then we received a letter stating that we had run out of extensions and that our case had gone into suspension again. The case would sit there for 90 days again, unless we pulled a rabbit out of the hat. Just 2 weeks short of the IRS deadline, the State finally gave us the O.K. for the amended Articles we had submitted so I fired that approval off to the east coast.

About four weeks later a letter came from the IRS claiming that we did not file in May 2011, the 990 forms to report our annual income for last seven years and that they could not deal with our case anymore. I called up the case handler but getting hold of her was impossible as she was on vacation for four weeks. When I finally contacted her, I told her we never filed because as far as we were concerned we never had the 501(c)(3) status therefore were not required to submit 990 forms. I told her this was "a catch 22" scenario. Meanwhile I had filed a 2011 990 EZ form, after filing an extension, as we had to find a person who knew what

EXPLORATORIUM

A choice excursion is a trip down to the Embarcadero in San Francisco before September 30th. The Exploratorium construction is moving along nicely at Pier 15 and worth a walk past.

At the Hyatt Regency you can check out the exhibits that are on display in the lobby. It is an amazing space that everyone should see and the Exploratorium exhibits make it even better. Make this trek to see the changes taking place. Be aware that the exhibit closes on September 30th.

polarizing filters

While using some polarizing filters to look at birefringent properties of microscopic mushroom features, I came up with a good impromptu variable neutral density filter for a compound microscope. I found that by having two pol filters over my illuminator, I can progressively diminish the amount of incident light. This is a very cheap solution. I'm using pol filters cut out from a pair of 3D movie glasses and they work great. (Thanks, Myron!)

Peter G. Werner

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Odyssey — concluded

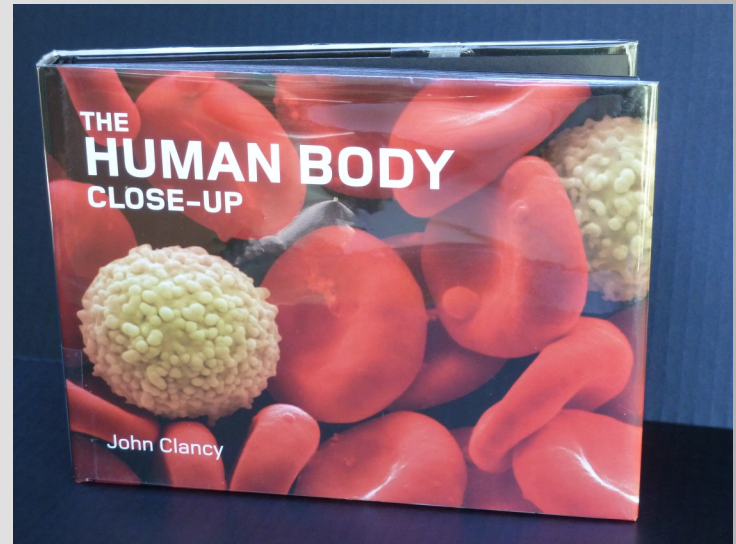
(Continued from page 5)

they were doing, the attorney who guided us through the final steps of this complex process.

The handler was trying to figure out what day we would start our 501(c)(3) date, since our old Articles of Incorporation were written in 1954, so I told her our April 23, 2011 filing date would be fine. She told me that we should qualify with what I told her but that it was out of her hands now and was going to a different department. I then received a letter stating that we were no longer a non-profit organization, as we did not file any 990 forms within the last 3 years, a new twist added to their law books, that has put a lot of small *no-profit* groups out of 501(c)(3) status. I got on the phone again and started to argue with them that I was told that we had filed and that we were told verbally on the phone as well. She then told me this is was a standard letter sent out anyway. I asked her to check our status and she confirmed we were O.K., and that we should get a letter in two weeks. Should we not get the letter in two weeks then call again. For good measure I waited four weeks and then called wondering if the letter was sent at all, or was lost by the US postal service. I told her I was still waiting for the letter, so could they please send me another one to confirm our status? She agreed. The next day, Aug 9, 2012, the baby popped out of the mailbox, the letter had arrived! *Let's pop the champagne!*

I would like to thank our past Recording Secretary, Debbi Brusco, for guiding our ship out from crushing rocks and Peter, Henry, and Bill as well as our membership for their voting on the amendments to the Articles of Incorporation and their support.

Myron Chan, Treasurer, SFMS



Trillions of Tiny Cells

There is an art to presenting complex information and in recent years, scientists have learned a good deal about that process so that the untrained and inexperienced viewer does not feel lost when first shown the data. In viewing pictures taken with microscopes, it is helpful when red blood cells are indeed red, even if the color is a false color applied with Photoshop. Color is not enough, scale is equally important. Placing two images on adjacent pages of similar material, one at low and the other at a much higher magnification helps the viewer see the relationship of the detailed image to the more familiar picture of what in anatomy is called the gross structure.

John Clancy, Senior Lecturer in Physiology Applied to

Health at the school of Nursing and Midwifery at the University of East Anglia, Norwich has gathered a comprehensive book of images of the human body, devoting some fifty five pages to Body Problems including parasites and serious illnesses such as HIV. Printed on black backgrounds, the pictures often occupy the entire page, 7.25 h x 9.5 w inches in size. While it is easy to dismiss this picture book as not containing a comprehensive collection of images of each of the organs of the body, a closer study of what is available will give advanced students and interested anatomists and microscopists a better understanding of most of the body's systems. This is not intended to be a textbook and does not provide significant information about the physiology that underlies

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Join The San Francisco Microscopical Society

We welcome all interested individuals of any age

Please enclose \$12.00 dues for the current calendar year. OR \$144;00 for Life Membership. Make checks out to SFMS/

Mail to: SFMS Treasurer: M. Chan, 435 Melrose Ave., San Francisco, CA 94127-2217

Join if you are an amateur to:

- Participate in exploration and discovery at our meetings and fieldtrips.
- Develop a new and fascinating hobby.
- Borrow a microscope to take home before buying your own.
- Learn how to buy a good microscope.
- Discover your micro-world at home.
- Help children understand science.
- Receive information, science articles, reports of meetings and activities of interest to members and microscopists.

. = required information.

*Print your name: First, Middle, Last, (Enclose a business card if available.)

*Print street address

*Print mailing PO Box if applicable

*City *State Zip 5 + 4

*Print your e-mail

URL

By marking this box, I give permission to use contact and membership information in the *Directory of Members* distributed only to members.

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Join if you are a professional to:

- Enjoy the company of professionals attending Society meetings.
- Share in the tradition of scientific objectivity and serious endeavor with other members.
- Improve the public's understanding of microscopy and scientific endeavors.
- Use our research grade Zeiss Ultraphot III microscope available to members who have participated in a training session.
- Add the SF Microscopical Society to your resume.

Title, prefix or suffix (Dr. PhD, MS, director.... etc)

*Home phone

Cell phone

Business Phone

Occupation

() () ()
Are you on Facebook? Twitter? LinkedIn?

Birth date or age Other info?

FROM:

Micro News

San Francisco Microscopical Society
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Stamp

To:

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WWW.SFMICROSOC.ORG

WE HAVE OUR FAILURES AND OUR SUCCESSES

A board meeting called for Saturday, August 18, 2012 was, sad to say, a failure. It was advertised to the membership but there were slip-ups. The notice did not include the date. Then, two of the four board members, for different reasons, were unable to attend. This ruined the quorum required to hold a meeting and vote. Unwilling to waste the opportunity to do some essential planning, President Peter Werner, Corresponding Secretary Henry Schott and long time member Helmut Will sat down for a quick lunch and a more protracted planning session.

The good news was shared by Henry who had learned from Treasurer Myron Chan, that SFMS had received the official IRS *Non-Profit Organization status*. Your donations or legacy to SFMS can now be deducted from your income tax. To get this all-important document required a lot of effort on the part of former Secretary Debbi Brusco and Myron.

We need a member to step forward and take up the post of Recording Secretary. Debbi has volunteered to oversee the restructuring of our web site. As Webmaster, she will have plenty to do. Her resignation left a post vacant for anyone who can come to the occasional board meetings, take notes and distribute the minutes. This is not an overwhelming task and is completed in a

short time since board minutes are distributed electronically.

The Board organizes five varied membership meetings each year that attract members. Meeting dates are the second Wednesday of January, March, May, September and November. One such event features an interesting speaker, whose work connects to microscopy. Locating such a speaker is not easy but we try. You can help. Give us a lead by suggesting people you know or about whom you have heard good reports.

Especially interesting could be an evening of viewing microscopic samples brought by members, if we know **who** will bring **what** samples so that the event is properly organized. Equipment members no longer could be offered at a Swap-Meet. SFMS can facilitate such transfers even though it may not actively sell items from its inventory. Do you have items to swap? Would such a meeting interest you?

We have had a very successful field trip to the SF Airport to view the many cases containing part of the large Golub Microscope Collection. Suggest to Bill Hill, program chair, (aropoika@earthlink.net) other such excursions so the board could approve such a program. You know what is interesting.

HS

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these images but as a more intimate view of the body it does accomplish its goal.

My initial reaction based on the histology that I have done and the images that I have seen in textbooks makes me critical of some of the magnifications reported. A cross section of the skin is reported as 20X on page 163 with a Pacinian Corpuscle on the opposite page as 150x even though it covers most of the page. I would have preferred to see a scale-bar used so that magnification due to photographic enlargement would have been more apparent.

Some of the images are truly astonishing. How

was the image of the cochlea produced? Buried in bone, these tissues can only be seen externally if much of the bone is dissolved away, a difficult task. The capillary system of the pituitary as well as the nerve synapses on pages 167-168 are also intriguingly revealing. For those who can never get enough of excellent microscopic human anatomy, this book will be great for the coffee table or the shelf where you keep treasured texts.

(Reviewed by HS)

The Human Body Close-Up, by John Clancy. 2011. Firefly Books, Buffalo, NY,

320 pages
ISBN 13:978-1-55407-918-6