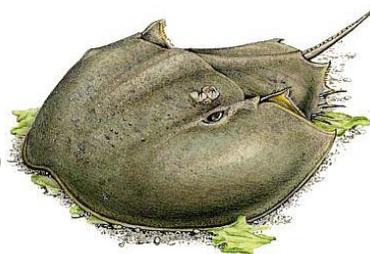


Limulus



NEWSLETTER

Department of Biological Sciences, Wagner College, Staten Island, NY

Volume 2008, Issue Fall-02

October, 2008

LETTER FROM THE EDITOR

THE OCTOBER LIMULUS

This issue is short. Evidently everybody is very busy in the middle of the semester. Nevertheless, I would like to remind all of you that the quality of our newsletter depends on your contributions.

We have a report about an invited lecture, an invitation to a community service activity, a little something about 125 years of Wagner College, and an experience in environmental Biology.

I very much hope you enjoy the review of spring 2008,

Dr. Horst Onken, The Editor

LETTERS TO THE EDITOR

No letters received.

BIOLOGY STAFF AND FACULTY NEWS

The Adjunct Professor Series will be continued in the next issue.

BIOLOGY STUDENT NEWS

Everybody seems to be too busy to send a contribution.

BIOLOGY CLUB NEWS

The Biology Club will be meeting for the first community service event this semester on November 09. This event will take place at Blazing Star Cemetery for a clean-up of the cemetery and the grassland at Arthur Kill shore line. Everyone can join the event. If you want to participate, please, contact Sejmir Izeirovski (President of Biology Club) at sejmir.izeirovski@wagner.edu.

TRI BETA NEWS

REPORT ABOUT A TRI BETA EVENT

Here at Wagner we offer a course dealing with the Ethical, Legal and Social Issues associated with genetic technology, "Genes to Genomics." It is a semester long course that delves into these issues while allowing students to share their voice regarding their personal beliefs on issues such as genetic screening and eugenics. On Monday October 27 Wagner was fortunate enough to have Dr. Miryam Wahrman come and

Dr. Wahrman recently put out a book, [Brave New Judaism - When Science and Scripture Collide](#). She did not merely promote her book, rather she opened our eyes to see that science and religion do not always conflict, but rather they can agree to disagree on some topics. The topics discussed not only bring about religious controversy, but also cause debate regarding ethical issues surrounding life status of a zygote. She touched upon the possibility of a return to eugenics while also promoting the positive uses of genetic technology as well. Dr. Wahrman was able to captivate the audience and leave many students, as well as faculty, with a number of new questions regarding their position on genetic technology.

OPPORTUNITIES

RESEARCH WITH MOSQUITOES AND CRABS

Dr. Onken offers research opportunities for students in the frame of a project in which he collaborates with scientists from Washington



State University, the University of Idaho, and the University of Alberta (Edmonton, CA). The project is funded by the National Institute of Health and studies the physiology of the midgut of larval yellow fever mosquitoes (*Aedes aegypti*). Mosquitoes are vectors of a number of parasites, transmit devastating diseases like malaria, yellow fever and dengue, and are a major threat to the health of billions of people on our planet. The principal investigators of this project address larval mosquitoes, because it appears more straightforward to fight these vectors as long as they are confined in an aquatic habitat.

In collaboration with colleagues from the U.S. (Mt. Desert Island Biological Laboratories, Maine), Brazil (University of São Paulo in Ribeirão Preto, University of Paraná in Curitiba) and Canada (University of Manitoba in Winnipeg) Dr. Onken pur-





sues research with Crustacea related to the osmoregulatory capacities and mechanisms of crabs. Together with Dr. Alauddin



(Chemistry) and Professor Beecher (Biology), an ecophysiological study is in an early stage of planning.

Dr. Onken can offer research opportunities for two to three students. If

interested contact Dr. Onken in his office (Megerle Science Hall Room 411), lab (Megerle Science Hall Room 406) or via e-mail (horst.onken@wagner.edu) or phone 420-4211.

Contributed by Dr. Onken

EXPERIENCES

125 YEARS OF BIOLOGY AT WAGNER COLLEGE?

Wagner College celebrates its 125th anniversary. However, our college was originally founded as a “Proseminary” to educate future ministers for the Lutheran Church and Biology was very likely not a part of the curriculum. However, “Genesis” was certainly an important teaching topic, and 24 years after the publication of Darwin’s *On the Origin of Species* and a year after the author’s death it may be that the strange idea of evolution was “discussed.”

I do not know when Biology became a topic of the curriculum, or when the college began a Department of Biological Sciences. However, this year we were given a day when we can celebrate the birthday of our college: the 15th of October is “Founders Day.” This first Founders Day was celebrated in the theatre in Main Hall with the choir, greetings from the founders’ successors and descendants, and reflections about the history of the college by John Daggan (Archivist of the Metropolitan New York Synod), Dr. Walter Kaelber (Professor of Religious Studies at Wagner College), and Dr. Richard Guarasci (President of Wagner College).

Although Biology played evidently a minor role (if a role at all) when the college was founded, it played a significant role after the celebration of this “Founders Day.” An apple tree was planted in the rose garden. In the Bible, an apple tree has a “challenging” role. In symbolism, apples relate to good health, relationship and love. In Biology, an apple tree is *Malus domestica*, a member of the rose family (Rosacea). Nevertheless, there is no doubt that it is Biology that lets it grow.

GROW, APPLE TREE, GROW!

ADVENTURES IN ENVIRONMENTAL BIOLOGY

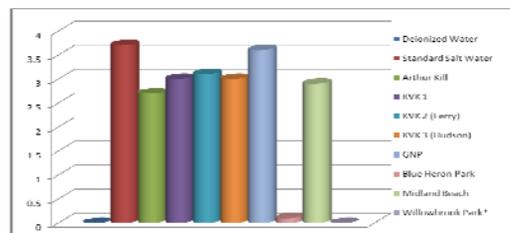
What is an Estuary? Brittany Frazza, an Environmental Biology student, answered this question eloquently as follows:

“Estuaries are places where freshwater and seawater mix together to form a body of water. Estuaries come in all shapes and sizes and are called many different names: bays, lagoons, harbors, inlets, or sounds to name a few. The secluded waters of estuaries are home to numerous plants and animals that are able to live in water that is comprised of both fresh and salt water. Estuaries provide important habitat for species that are

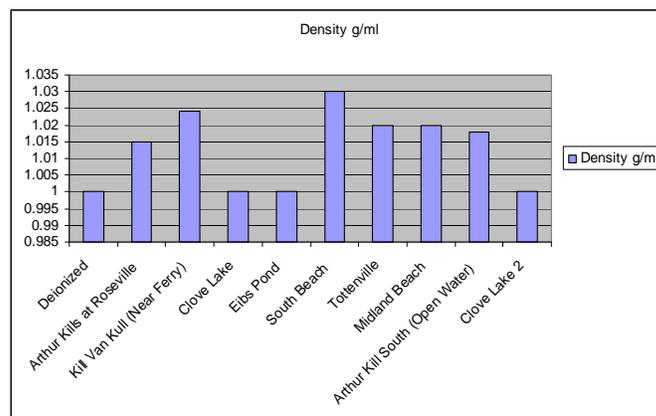
valued commercially, recreationally, and culturally. Birds, fish, amphibians, insects, and other wildlife depend on estuaries to live, feed, nest, and reproduce. Some organisms, like oysters, make estuaries their permanent home; others, like horseshoe crabs, use them to complete only part of their life cycle. Estuaries provide stopovers for migratory bird species such as the mallard. Estuaries and the land surrounding them are also places where people live, sail, fish, and swim. As a result of these things, estuaries are often the centers of our coastal communities”. - B. Frazza, BI 110

So, basically, estuaries are a great asset for any community. And Staten Island still has some functional estuarine wetlands, although industrialization has had impacts. We decided to visit them, as well as some freshwater sites, and collected water samples. We used public transportation or walked to minimize the environmental impact of our lab activity and to assess Staten Island’s public transportation resources. We expected estuarine water to have intermediate levels of salt and intermediate densities, and found this to be the case when we measured these parameters in the lab.

Solute Concentration %



Solute concentrations of various Staten Island water samples. KVK means Kill Van Kull. GNP means Gateway National Park. Contributed by Patrick Powers



Density measurements of various Staten Island water samples. Contributed by Timothy Grady

Some of the places we visited aroused concern among students. For example, one group found much garbage including a switchblade among the tall reeds and grasses. Learning about natural ecosystems is vital for their protection. Understanding the valuable services they provide brings to light their importance. Brian Bugbee had this to say in conclusion of our research and his personal experiences as a member of NY/NJ Baykeepers:





“Estuaries are important because they are the nursery for marine and aquatic plants, animals, and fish. It is important that they be protected; otherwise the species which depend on the estuaries will experience population loss and possibly extinction in the future.

Many times governments are not concerned with the state of natural environments in the surrounding area until the sites are so terribly polluted or destroyed that it becomes an issue for the EPA. In New York City, the government does not consider the natural environment a high priority, and as a result, private organizations have to take care of the local estuaries and rivers. One such organization is the NY/NJ Baykeepers. The organization coordinates clean ocean action projects and environmental projects to help clean up the rivers”. - *B. Bugbee, BI 110* (You can visit this organization at www.nynjbaykeeper.org)

Our public transportation experiences were variable. Some students found their sampling sites to be conveniently accessible by public transportation, while others found them time-consuming. All of the students who used the Wagner ferry shuttle service to the Kill Van Kull found this service to be extremely clean, efficient, and positive.



Gateway National Park. Contributed by Alexandra Ricciardi

Photo by Alexandra Ricciardi



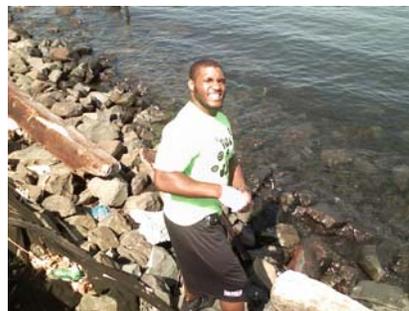
Michael Giangrande collecting a water sample from Blue Heron Park.



Marsh/Mudflat near the Outer Bridge. Contributed by Gregory Trenti



Garbage found on the beach at GNP by Vincent Deluca and Alexandra Ricciardi.

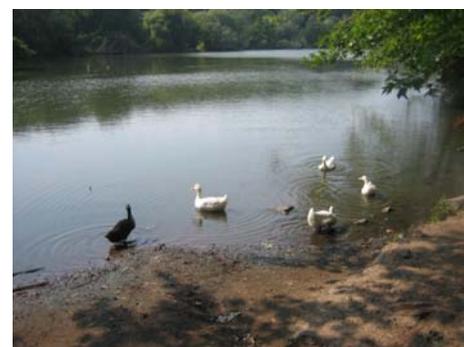


Jereme Spinks collecting a water sample from the Kill Van Kull.

Vincent Deluca Collecting a water sample from GNP.



Clove Lakes Park photo. Contributed by Brittany Frazza





Switchblade found near the Outer Bridge by Gregory Trenti, Anjelica Cunningham and Jim Okun.

Contributed by Professor Beecher and students from her Environmental Biology class.

PUBLICATIONS

Onken, H., Patel, M., Javoroncov, M., Izeirovski, S., Moffett, S.B. & Moffett, D.F. (in press). Strong alkalization in the anterior midgut of larval yellow fever mosquitoes (*Aedes aegypti*): Involvement of luminal Na⁺/K⁺-ATPase. *Journal of Experimental Zoology*. Accepted for publication in October 2008.

PROFESSIONAL MEETINGS

CONTRIBUTIONS

In the November issue we will have the contributions from the 41st annual fall meeting of the Metropolitan Association of College and University Biologists (MACUB) will be held at Montclair State University (Montclair, NJ) on Saturday, November 1, 2008.

FUTURE MEETINGS

DO NOT FORGET TO PREPARE FOR THE FOLLOWING CONFERENCE:

The next **Eastern Colleges Science Conference** will be held at Wagner College (Staten Island, NY) on Saturday, April 24, 2009.

ALUMNI

Dear Alumni,

If you are interested in contributing to our newsletter, you are very welcome to do so. Contact Dr. Onken by e-mail (horst.onken@wagner.edu) with your submission, comment, ideas or questions! We are excited to hear about where you are, how and what you do!

MISCELLANEOUS

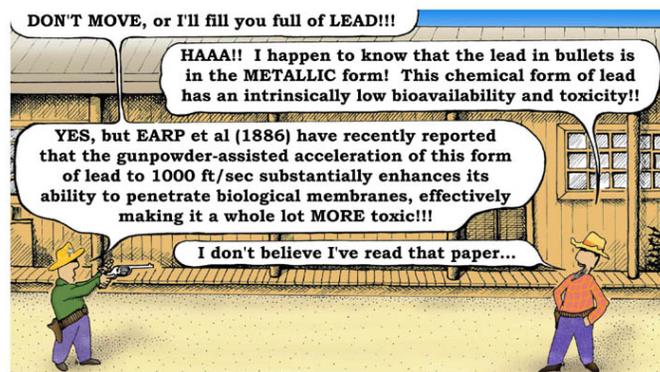
If your contribution does not fit in any of the sections above, you can post it here.

DO YOU MISS A SECTION? LET ME KNOW WHICH AND MAKE A CONTRIBUTION!



PUZZLES, JOKES, QUOTES, CARTOONS

CARTOON:



ENVIRONMENTAL SCIENTISTS IN THE WILD WEST

(from www.lab-initio.com)

GUIDELINES FOR CONTRIBUTORS

Authors in all sections should keep in mind that not all readers are specialized in their area of interest. Keep your contribution on a level that everybody can understand.

Contributions may vary in length between about 50 and 500 words and must be submitted by e-mail to horst.onken@wagner.edu.

Photographs or other images that accompany an article are very welcome, but must be submitted as separate files (high quality jpg is the preferred file format) attached to the e-mail. Be aware that photographs/images may be minimized in size.

Indicate the section of the newsletter where you want your contribution to appear.

The editor reserves his right to edit your contribution or post an immediate response.

Editing may involve publishing contributions in other sections as indicated by the author.

All contributions will clearly indicate the author's identity.

All contributions are reviewed and publication may be refused by the editor.

DEADLINE FOR THE NEXT NEWSLETTER:

MONDAY, November 24

The Editorial Board:

Editor: Dr. Horst Onken

Assistant Editor: Stephanie Rollizo, Department Secretary

Student Assistant Editor: N.N.

Student Assistant Editor: N.N.