

Rochester Academy of Science
P.O. Box 92642
Rochester, NY 14692-0642
Change Service Requested

NON-PROFIT ORG.
U.S. POSTAGE
PAID
ROCHESTER, N.Y.
PERMIT NO. 220

Rochester Academy of Science
BULLETIN

“An organization of people in the Natural Sciences”

November, 2010 - Vol. 64, #9

November, 2010 - Vol. 64, #9, Page 4

ABOUT THE **ACADEMY** - The Rochester Academy Of Science, Inc. is an organization which has been promoting interest in the natural sciences since 1881, with special focus on the western New York state region. Membership is open to anyone with an interest in science. Dues are minimal for the Academy, and are listed in the membership application. Each Section also sets dues to cover Section-related publications and mailings.



For applications and/or more information contact Jutta Dudley, 140 Railroad Mills Road, Pittsford, NY 14534; by telephone 385-2368; or by e-mail <JuttaSD@aol.com>.

The *Academy* Internet web page is <http://www.rasny.org>

The *Astronomy Section* Information phone number is (585) 987-5330. The *Astronomy Section* Internet web page is <http://rochesterastronomy.org>

This “**BULLETIN**” is produced monthly, *except July and September*, by the *Astronomy Section, Rochester Academy of Science*. The editor is Bob Crumrine, 3 Timway Court, Fairport, NY 14450 Phone (585) 265-5292 (days) and (585) 425-7448 (evenings), e-mail <editor@rasny.org>

ROCHESTER ACADEMY OF SCIENCE OFFICERS

		Phone	
		(585)	home work
Jutta Dudley	President	385-2368	
John Handley	Vice President	802-8567	265-8900
Open	Secretary		
William Hallahan	Treasurer	624-1628	389-2552
Open	Membership	350-8526	
Stan Spector	Past President	461-1272	
Karen Wolf	Anthropology	670-9709	273-4500
Lori Englund	Astronomy	334-5744	242-3226
Karen Wolf	Life Sciences	670-9709	273-4500
John Handley	Fossil	802-8567	265-8900
William W. Pinch	Mineral	248-3333	
Elizabeth Pixley	Herbarium	334-0977	
Jutta Dudley	Publications	385-2368	
Bob Crumrine	Bulletin	425-7448	265-5292
William Hallahan	Student Grants	624-1628	389-2552
Paul Dudley	Web Site Coordinator	385-2368	
Reginald Smith	Director '13		
Jeff Gutterman	Director '13	392-8299	359-6054
Frank Bov	Director '12	385-1518	422-9910
Open	Director '12		
Eric Drum	Director '11	671-5954	
Helen D. Haller	Director '11	387-9570	

The Academy Postal address is P.O. Box 92642, Rochester, NY 14692

Rochester Academy of Science Herbarium Update

The Life Sciences Section has held eight herbarium workshops since January 2010, some during the week and some on Saturdays. The Saturday workshops have allowed several people to attend who are not available during the week. Our group of volunteers is slowly increasing, as more people find out what fun it is to come and learn about the plant specimens. One of the workshops was a plant mounting workshop, which was very much enjoyed by those present. Most of our work has been focused on replacing old, brittle plant folders with acid-free folders – and enjoying looking at many striking plants, some of which were collected as far back as the late 1800’s.

On June 19, 2010 members of the Canandaigua Botanical Society came on a field trip to visit the RAS Herbarium. Their organization is more than 100 years old. Those present were very interested in learning about what we are doing, especially since they do not have an herbarium. I have been invited to speak about the RAS Herbarium at their annual meeting in April 2011.

I have also been invited to be the speaker at the upcoming Bergen Swamp Preservation Society

annual dinner on October 23, 2010. Again, I will be talking about the RAS Herbarium, especially with reference to the many specimens collected from Bergen Swamp and Zurich Bog.

Several plant specimens from the RAS Herbarium collection were included in the recent RAS display at the Rochester Central Library.

You may not be aware that Peter Debes and I are working on a Natural Science Foundation (NSF) grant through the NSF program “Improvements to Biological Research Collections (BRC)”. Although we had hoped to submit the grant application by the July 2010 deadline, various events conspired against us, so we will now work toward the July 2011 deadline. The grant application will focus on requesting funds to facilitate the digitizing of information for the entire 60,000 pressed plant specimens in the RAS Herbarium collection, including taking digital photographs of each specimen. This will be a labor-intensive project and will require many hours of work by a number of people. If we are successful in this effort, our valuable plant specimens and the history they capture will be accessible to people around the world via computer.

Elizabeth Pixley, Curator

* * *

Shallow marine assemblages show resistance to change across the Paleocene-Eocene boundary in the U.S. Gulf Coastal Plain

The early Paleogene was a time of major global environmental change and, in many habitats, significant evolutionary turnover. A long term rise in temperature is interrupted by several geologically brief global warming events, the best known of which is the Paleocene Eocene Thermal Maximum (PETM, ~55.5Ma). At this time, warming of 5-8°C resulted in massive extinction of benthic foraminifera, increased turnover and morphologic change in planktonic taxa, and wholesale reorganization of terrestrial floras and faunas. Relatively little is known, however, about the response of shallow marine macrofaunas to either the long term Paleogene temperature rise or to the PETM. We have attempted the first comprehensive analysis of one of the world's best-preserved fossil sequences for this interval: the mollusc fauna of the U.S. Gulf Coastal Plain (GCP).

Surprisingly, the PETM appears to have caused few notable changes in the richness, ecology,

and morphology of GCP faunas. At the species level, data show a slight, but significant, decrease in species richness than began in the late Paleocene and continued into the earliest Eocene. Origination rate of new species dropped below the extinction rate across the P-E boundary, the only time in the early Paleogene to do so after the end Cretaceous mass extinction. The ecological composition of faunas shows no significant variation throughout the entire early Paleogene, including the P-E boundary. Although body size of some important gastropod clades declined across the boundary, this does not appear to be a general pattern, as analyses of an abundant and diverse clade of bivalves fails to find significant differences.

The early Paleogene was time of global warmth. GCP molluscs were apparently able to keep pace with rising background temperatures such that a spike to even more extreme conditions during the PETM had little effect on taxa already adapted to them.

The results of this research were presented at the Geological Society of America Annual Meeting, Oct. 31 – Nov 3 in Denver.

Jocelyn A. Sessa and Linda C. Ivany/Syracuse University, John C. Handley/Rochester Academy of Science, Warren D. Allmon/Paleontological Research Institution, Rowan Lockwood/William and Mary College

* * *

Invasive Species-What is all the Fuss About?

Invasive species are those organisms, native or non-native, that thrive to the detriment of other organisms and dominate entire areas or ecosystems. There are lots of possibilities for why they are so successful. An organism may be able to extract nutrients from its environment better than others; it may actually poison or alter the environment to discourage others; and so on.

Often invasive species are organisms that were brought to new environments intentionally, but invasive organisms can also arise accidentally. What is happening now, however, most scientists agree goes far beyond most past events. Humans have altered environments in radically shorter periods of time than what the earth witnessed in the millions of years before we came into the picture. With stunning swiftness, humans have introduced myriad new chemicals and toxins into environments all over the planet, transported organisms far and wide, and converted vast areas of land from their native state to human use. These changes have fostered the proliferation of invasive organisms resulting in a decline in the overall number of species present.

So what should be done? Some would say nothing, but there are a variety of reasons to think action is needed. One is aesthetic. Many people want to continue to enjoy the native species that live in their area, because they love them and want to preserve them for future generations. In the upcoming FORUM on Invasive Species, you

will learn about a variety of invasive plants, insects, and aquatic life and some efforts that are having success in controlling them.

Peter Debes, Rochester Sierra Club.

Federation of Monroe County Environmentalists presents
The Battle Against Invasive Species

How Much Do You Know?

Tuesday, November 16th 2010, 7:00 PM. to 9:00 PM., Brighton Town Hall Auditorium

Learn to identify threats to our local environment. Learn how these organisms damage our ecosystem

Speakers will include, Peter Debes, Rochester Sierra Club, Steven Daniel, Nature Discoveries, Gregg Sargis, The Nature Conservancy, Charles Knauf, Monroe County Health Department

The forum is being held in memory of Christine Sevilla.

Archaeological Institute of America presents:

"Searching for the First Farmers in the Adriatic: New Excavations at Danilo and Pokravnid in Croatia"

Thursday, November 18, 2010, 7:30 PM, Memorial Art Gallery, 500 University Ave. Rochester. Free with Gallery admission.

Speaker: Dr. Andrew M. Moore, archaeologist and Dean of Graduate Studies, RIT

EVENTS for November, 2010
(For updates to events, check the Academy web site, <http://www.rasny.org>, or appropriate Section web site.)

NOVEMBER EVENTS

Fri 05 ASTRONOMY GENERAL MEETING
7:30 PM, RIT Gosnell Hall A-300 Lecture Hall. Main talk by Rondolfo Montez, who recently earned the first PhD in Astrophysics from RIT. His topic will be related to X-ray observations of planetary nebulae. Plus a short talk TBA. Come early, starting at 7 for conversation and snacks. Our meetings are always free and open to the public. For more information contact Lori Englund at 334-5744.

Sat 06 RAS FALL PAPER SESSION
For more information see the October, 2010 *Bulletin* or visit <<http://www.rasny.org/>>

Mon 08 FOSSIL GENERAL MEETING
7:30 PM Downstairs Meeting Room, Brighton Town Hall. 2300 Elmwood Ave., Marcellus Shale: The Science Beneath the Surface, Dr. Rob Ross/Paleontological Research Institution. Visitors welcome. Please email John Handley <fossil@rasny.org> or call John at 585-802-8567 for more information.

Fri 12 ASTRONOMY STAR PARTY
8:00 PM – 9:30 PM Mendon Ponds Park, Hopkins Point Road near Scout Camping Area. Our ninth star party of the year moves back to the east side of town,

Mendon Ponds Park. Jupiter and deep sky objects will be featured. Come take a peek at star clusters, gaseous nebulae where stars are being formed, and faint galaxies hundreds of light years away. This is a free public event, held explicitly for the public to come see the sights in telescopes provided by members. Experienced guides will explain what you're seeing. For information, contact Jim Seidewand at 723-6225

Sat 13 HERBARIUM
10:00 AM Rochester Museum and Science Center. Life Sciences section will hold a workshop at the RAS Herbarium, located in the basement of the Rochester Museum and Science Center (RMSC). No experience needed! Plan to come and help with this valuable plant collection. Lunch is served in the RMSC Cafe until 2 pm. If you plan to attend the workshop, please send an RSVP to Elizabeth Pixley. At the Museum, go to the front desk and ask staff person there to call ext. 368, the phone in the Herbarium. For more information, contact Elizabeth Pixley, herbarium curator (334-0977 or epixley@rochester.rr.com).

Mon 15 DEADLINE FOR DECEMBER BULLETIN
Deadline for December, 2010 issue. Please mail input to editor@rasny.org

Tues 16 MINERAL GENERAL MEETING

7:30 PM Downstairs Meeting Room, Brighton Town Hall, 2300 Elmwood Ave. Dr. Robert Jacobi, University at Buffalo, Dept. of Geology, will be speaking on “Faults in the Appalachian Basin of NYS”. Door prizes & refreshments. Visitors welcome. Check <http://www.rasny.org/mineral> for updates or contact Nancy McCann at mineralvp@rasny.org or 585-395-1713.

Wed 17 RAS BOARD MEETING
7:00 PM Brighton Town Hall, Stage Conference Meeting Room.

Thurs 18 ANTHROPOLOGY GENERAL MEETING
7:30 PM Memorial Art Gallery. For more information, see announcement on page 2, bottom right.

DECEMBER EVENTS

Fri 03 ASTRONOMY GENERAL MEETING
7:00 PM at the PLANETARIUM. For more information contact Lori Englund at 334-5744

Sat 04 MINERAL SECTION HOLIDAY DINNER MEETING
6:30 PM St. Louis Church, 64 S. Main St., Pittsford 14534. Set-up at 6:00 PM. Speaker will be Alfredo Petrov "Anorthite and Native Brass." For more information please contact Nancy McCann at mineralvp@rasny.org or 585-395-1713.