

Rochester Academy of Science
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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 Frank Bov, 16 Gladbrook Rd., Pittsford, NY 14534 Phone (585) 422-9910 (days) and (585) 385-1518 (evenings), e-mail <frankbov@rochester.rr.com>

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BULLETIN

“An organization of people in the Natural Sciences”



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Fossil Scorpion over 450 million years old, now in the Yale Peabody Museum.

EDITOR’S NOTE

You, our members, are one good source of interesting information in newsletter such as this. If you have an area of interest consistent with the Academy’s mission or have toured somewhere that other Academy member might enjoy, tell us about it by writing an article.

Here is an excellent example of the kind of article that would be heartily welcomed.

Frank Bov, Editor

SILURIAN SCORPION COLLECTION

Scorpions are among the rarer arthropods found in the Late Silurian eurypterid beds of New York. Nevertheless, over a period of many years, I managed to put together quite a collection of specimens.

Most of the specimens came from Passage Gulf in eastern New York, a well-known eurypterid locality. The rate of collection was about one per year. The accompanying photo shows one of the specimens and it is worth noting that most specimens found at Passage Gulf are essentially complete in contrast to the abundant fragmentary remains of eurypterids found at the site.

Very few specimens are known in museum collections, so I have repositied most of the scorpions in the Yale Peabody Museum in New Haven, Connecticut. Here they will be available to researchers around the world. Many of the scorpion specimens have been studied previously and are described in: KJELLESVIG-WAERING, EN 1986. A Restudy of the. Fossil Scorpionida of the World.

Samuel J. Cieurca, Jr.
Rochester, New York

**ATTENTION:
ALL BOTANY SECTION
MEMBERS**

We have a new focus group to plan the future of our Section. Liz Pixley and others from MCC, are going to help me and other regular Section attendees plan our next year at 2 meetings in January.

Our plans will include the potential name change to Life Sciences (and so include plants, animals, geology, environmental effect on life, etc), setting up monthly workshops in the herbarium, finding places for various Study Workshops that were popular in the past and places to do field studies, how to start a program, mini-symposium, pr mini paper session for undergraduates specializing in Life Sciences, and to set up committees for these various new exciting programs.

Please come and be a part of our new future. We will meet January 31st at 2:00 PM and 7:30 PM (Yes, 2 meetings on the same day.) at Liz Pixley's home, 131 Parkmeadow Drive, Pittsford, to discuss the future and how best to reorganize the Section. For information, call Liz at 334-0977.

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ABSTRACTS OF SOME PAPERS GIVEN AT THE 2004 PAPER SESSION

CHARACTERIZATION OF VSV INDIANA HR GENES FROM INTERFERON-SUPPRESSING AND INTERFERON-INDUCING STRAINS OF VSV.

Lisa Golebiewski, Evan Santo, Maureen Ferran, Department of Biological Sciences, Rochester Institute of Technology, Rochester, New York

Interferon is considered one of the primary and most powerful host defenses triggered upon viral infection of mammalian cells. This interferon response involves production of the cytokines IFN α and β , whose cellular effects collectively result in the formation of an “antiviral state.” In this antiviral state, host cells limit macromolecular synthesis thereby inhibiting virus infection and replication. To counter this resistance viruses have evolved mechanisms that block the IFN system. For example Vesicular Stomatitis Virus (VSV) bypasses this antiviral defense by suppressing transcription of the IFN gene, allowing a successful infection to occur. Experiments in our laboratory indicate that VSV may do so by blocking activation of NF- κ B, a transcription factor that is essential for transcription of the IFN gene.

VSV contains an 11 kilobase RNA genome that encodes five viral proteins: nucleocapsid (N), phosphoprotein (P), glycoprotein

(G), polymerase (L) and the matrix protein (M). Preliminary evidence suggests that two viral components are involved, the M protein and a second, unidentified viral protein. The goal of this study is to identify the viral components responsible for regulation of NF- κ B activation by comparing the genomic sequences of two IFN suppressing (wild type and 22-25) and IFN inducing (T1026R1 and 22-20) strains of VSV, producing novel DNA sequence information. The sequences of the IFN-suppressing strains (wild type and 22-25) were compared with the IFN-inducing strains (T1026R1 and 22-20) and several mutations were found between the strains. Preliminary data indicate there is a previously unrecorded mutation in the M protein of 22-20, as well as several mutations upstream from the protein encoding regions. The implications of these mutations will be discussed further at the presentation.

* * *

EXAMINATION OF SNAIL AND SIP-1 INVOLVEMENT IN THE REGULATION OF E-CADHERIN EXPRESSION BY DEXAMETHASONE.

Miriam N. Hamouche and Jani E. Lewis. Dept. of Biology, SUNY Geneseo, Geneseo, NY 14454.

Epithelial cells express epithelial or E-cadherin, a molecule important in holding cells together and maintaining proper tissue architecture. They also

have the highest mitotic rate of any cell in the body making them prone to the damaging effects of mutagens. Epithelial cells that have become cancerous often experience a down-regulation (loss) of E-cadherin. The vulvar carcinoma cell line, A431, down-regulates E-cadherin in the presence of the glucocorticoid analog, dexamethasone (DEX) at the level of transcription. The transcription factors Snail and Sip-1 have already been published as playing a role in E-cadherin down-regulation in some carcinomas. The purpose of this work is to determine if Snail and Sip-1 transcription factors are involved in the down-regulation of E-cadherin in A431 cells as a result of treatment with DEX. The expression levels of these transcription factors in DEX treated versus untreated A431 will be compared using Real Time (RT) PCR and primers for Snail and Sip-1. Presently we are working out the parameters for this technique using E-cadherin primers.

* * *

POSITIONAL CLONING OF THE TT9 MUTATION IN ARABIDOPSIS THALIANA.

Indriati Hood, Derek DeBoer, Marisa Roach, and Matthew Pelletier, Department of Biology, Houghton College, Houghton, NY.

This project was initiated with the purpose of identifying the gene defective in the *transparent testa nine* (*tt9*) mutant of *Arabidopsis thaliana*. The *tt9* mutant produces

yellow, small seeds that fail to germinate as efficiently as wild-type seeds. The seed color phenotype results from a lack of tannins (a type of flavonoid) within the testa that causes it to be transparent. The seeds appear yellow due to the color of the underlying yellow cotyledons. Plants from the Landsberg *erecta* (*Ler*) ecotype background having the *tt9* mutation were crossed with wild type plants from the Columbia (*Col*) ecotype and allowed to self-fertilize. The F₂ generation resulting from the above cross was used as a mapping population. Plants homozygous recessive for the *tt9* mutation were identified based on seed color, and DNA isolated from these plants was used for positional cloning.

Several markers for use in the polymerase chain reaction were developed to take advantage of polymorphic loci between *Ler* and *Col*. SSLP markers at 8.62Mbp and 11.1 Mbp on chromosome 3 were initially shown to flank the region containing the *TT9* locus. Derived cleaved amplified polymorphic sequence (dCAPS) markers were also recently developed within this region and used to further analyze those lines identified as being heterozygous for either flanking marker. The *TT9* locus has been narrowed to a region containing approximately 150,000bp of DNA on chromosome 3. Candidate genes within this interval are currently being assessed as to their involvement in flavonoid biosynthesis.

EVENTS For JANUARY 2006

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

Fri 06 ASTRONOMY GENERAL MEETING

7:30 PM at RIT, Gosnell Science Bldg; 1st floor room A-300. Our featured speaker will be Bill Gilman speaking on "Chariots On Fire – Debunking Astronomical Pseudoscience" plus short talks by other members. Visitors are always welcome. For information, call Carol Latta at 230-9548

Tue 17 MINERAL MEETING

7:30 to 9:30 at the Brighton Town Hall 2300 Elmwood Ave. in the Downstairs Meeting Room. Program will be RAS Member short talks-"Mineral Chemistry" by Al Mura and "Crystal Growth" by Bob Morgan. Refreshments. For information call Chuck Hiler at 924-7496 or check the Academy web site <http://www.rasny.org> for possible updates.

Sun 22 ASTRONOMY WINTERFEST

Noon to 4:00 PM, at Mendon Ponds Park. For the third year in a row, the Section will have an information table and display at the Winterfest. If you're interested in chatting with the public about equipment, observing, and the science of astronomy, come join us. If it's clear, we'll be doing some solar observing in specialized equipment. For information, call Carol Latta at 230-9548

Tue 31 BOTANY-ENTOMOLOGY MEETING

2:00 PM and 7:30 PM (Yes, 2 meetings on the same day.) We will discuss the future and reorganization of the Section. For details, see article elsewhere in this issue. Liz Pixley's home 131 Parkmeadow Drive, Pittsford, 334-0977.

EVENTS IN EARLY FEBRUARY

Fri Feb 03 ASTRONOMY GENERAL MEETING

7:30 PM at RIT, Gosnell Science Bldg; 1st floor room A-300. Our featured speaker will be Dr. Judy Pipher, Professor Emeritus at the U of R, speaking on the Spitzer Space Telescope, a project in which she played a key role. Short talks by other members will add to the evening. Visitors are always welcome. For information, call Carol Latta at 230-9548

Tue Feb 07 FOSSIL MEETING

7:30 p.m. in the Community Meeting Room, Brighton Town Hall, 2300 Elmwood Avenue, Rochester, NY. John Handley will speak on "Nova Scotia: A Tour of the Carboniferous." Visitors welcome. Contact Linda Heffron 461-4179 for more information or check the RAS Web site for the latest updates.