



FFEM Newsletter

President's Message

Greetings Friends,

This is my last message as President, and I want to take a moment and give you an example of the importance of the Frost Entomological Museum (aside from the obvious and immense impact the Museum has on public outreach and education). This example comes from the family of flies I work with, the long-legged flies (Dolichopodidae). The long-legged flies are a diverse group of small, usually metallic green Diptera that are common around water and in moist woods. I have spent the last few years sorting and identifying these flies in the Frost Museum, and this task was

recently completed. There are at least 170 species of long-legged flies represented in the collection, and this list is now available on the Museum's website (under "Holdings"). At least 120 of these species were

collected in Pennsylvania (the *Catalog of the Dolichopodidae of America North of Mexico* published in 2004 lists only 80 species in Pennsylvania!). In addition, I found at least six new species that have never been described. I am now describing three of these species, and naming one after Stuart Frost. I want to make two points, 1) most of these new species have been in the collection for at least 25 years (two for over 40) and are represented by only one or two specimens. Without their proper curation and preservation they might never be discovered. For example, I have tried many times unsuccessfully to collect additional specimens of a new species that was collected in 1973 on the Penn State campus – should this species now be extinct (a possibility) then the Frost Museum likely holds the only specimen. 2) Taxonomists should be well-served to consider the Frost Museum during their work. The long-legged flies represent only about six of the hundreds of drawers in the Frost Museum. How many more undescribed species await discovery in the Frost Museum? Enjoy the newsletter!
Justin

Butterfly Bob

Congratulations

to Robert "Butterfly Bob" Snetsinger. He recently received his 50-year membership pin from the Entomological Society of America! We all appreciate his years of dedication to the science of entomology!

On August 4, 2007, Robert Snetsinger will lead a Centre County Tour of Butterfly Friendly Habitats. The Tour will start from Tudek Park at 10:00 am and visit various butterfly friendly habitats, including the Rock were the largest butterfly in Pennsylvania may be seen. A later stopover will be the favorite haunt of Monarchs and other species along the Rattlesnake Pike, and eventually we will end-up at the new Penn State Butterfly Garden, which is being developed on the Penn State Campus.

The Friends of the Frost Entomological Museum are supporting the development of the Butterfly Garden by providing butterfly plants and other supplies. Come join the tour!



Inside this issue:

Minutes of Executive Committee Meeting	2
Minutes of Executive Committee Meeting Continued	3
New Threat to Honey bees	4
New Bark Beetle	5
New Employee at Frost Early Pa Entomologist Simon Rathvon	6
Rathvon Continued	7
Officers, Membership Application, Web site Business Address and New Members Upcoming Events	8



Minutes of FFEM Executive Committee Meetings

Several meetings of the Executive Committee have been held since the last newsletter.

Frost Museum,
Penn State University
University Park, PA 16802
Nov. 6, 2006

President Justin Runyon, Beth and Don Brobst, Jordan, Maryann Frazier, Hannah Stout and Robert Byers were present. The minutes of the Oct. 16, 2006 were approved as read. The treasurer's report was accepted. Net assets were \$13,708.25. We gained two new members.

Pres Runyon called for Old Business. Twenty visitors came to the Open House held on Oct. 21. The Entomology Fresh Water course participants enjoyed a recent tour of the museum. Artist Jerry Jackson and hopes he will come up with something for us to sell at the next Great Insect Fair. M. Frazier presented a plan to design panels to advertise the Frost Museum that would be fixed to the outside of the building.

Pres. Runyon called for New Business. The President of the Graduate student association said they will provide the membership fee to Friends of the Frost for the 14 new graduate students who started this fall. There was a discussion of an open house at the museum to attract new members. President Runyon tabled the discussion until the next meeting. Plans were made to update of the WEB page. J. Frazier is still planning to make bookcases for the museum to store books from the Beatty estate. A discussion of a potential Natural History Museum at Penn State was held. No action was taken. Meeting adjourned at 11:15 AM.

Respectfully submitted,
R. A. Byers, Secretary-Treasurer

Frost Entomological Museum,
Penn State University
University Park, PA 16802
Dec. 3, 2006

Present were President Justin Runyon, James Frazier, Maryann Frazier, K. C. Kim, Hannah Stout and Robert Byers. Minutes of Nov. 6, 2006 were read, corrected and approved. Treasurer's report was approved. Net assets were \$13,790.53. We gained two new members. Membership report was accepted. (There are the following memberships: Corporate – 1; Family – 16; Individual – 17; Lifetime – 10; and Student – 8).

Pres Runyon called for Old Business. K. C. Kim said he talked with Amy Brunner about getting graduate students in the department to use the nanotechnology display and put specimens up for a test before we have an open house. K. C. Kim gave a report of his meeting with Dean Steele concerning the future of the Frost museum and other issues. The Dean said he has plans for the Head house III property but didn't elaborate. K. C. said the Frost Museum should be used as a deposit of forensic materials. There are some taxonomic problems in forensic entomology and the Frost Museum could be a part of solving the problems.

Pres. Runyon called for New Business. J. Frazier gave a report of Penn State plans to block the driveways by the USDA pasture lab and the Frost Museum and replace the entryways with landscape material. This was mainly to hide the air conditioning tower of the Pasture Lab and solve the mud problem on the sidewalk by the Frost Museum. J. Frazier objected to closing the driveway because students bring carts from ASI building and they would have to go around the block to get to the green-

houses if the driveway was closed. J. Frazier proposed to Penn State that they put a marked crosswalk on Curtin Road as part of their landscape plan. He also suggested that the Frost Museum be able to suggest what types of landscape plants are used in the plan so that some would serve as food for the Insect Zoo. K. C. Kim suggested that a formalized letter with a proposal be drawn up and submitted to OPP.

M. Frazier gave report for improving the entrance to the museum. She said the University would not allow a sign of mosaic tile. However, cast aluminum signs with three-dimensional insects are permitted. She also proposed we fly a banner outside during special events at the museum. After some discussion, no action was taken.

Pres. Runyon called for a discussion of the Frost Museum web page. Pres. Runyon proposed we ask Roxie Smith to update the web page after permission from her supervisor.

K. C. Kim reported a post-doctorate position at the Frost Museum supported by the National Park Service may assume some of the duties of the vacant assistant curator position. Two applicants have been interviewed.

H. Stout reported on the insect zoo. Jill left before the cages were cleaned so the project is on hold. She has two tours scheduled for this week. This concluded New Business. Meeting adjourned at 11:05 AM.

Respectfully submitted,
R. A. Byers, Secretary-Treasurer

Minutes of FFEM Executive Committee Meetings Continued

Frost Entomological Museum,
Penn State University
University Park, PA 16802
Jan. 8, 2007

Present were President Justin Runyon, Beth and Don Brobst, Beth and Don Brobst, Amy Brunner, James Frazier, Robert Snetsinger, James Frazier, Maryann Frazier, Ralph Mumma, Raul Ruiz, Bob Snetsinger, Hannah Stout and Robert Byers.
Minutes of the meeting held on Dec. 3, 2006 were accepted. The treasurer's report was accepted. Total assets were \$ 13,820.53.

Pres. Runyon called for Old Business. J. Runyon reported on the changes he submitted to Roxie Smith for the web page. J. Frazier said he will start building the book cases for our library collection this weekend.

Pres Runyon called for New Business. H. Stout said on Feb. 3, 2007 she will be giving tours for youth groups from the sustainable agriculture group. She plans to get all the tanks for the displays cleaned up before the open house. R. Ruiz reported that the Entomology Graduate Student Association will pay for one year's membership in the Friends of the Frost Museum for all 14 new graduate students in the department.

Pres Runyon called for a discussion of the open house. After discussion it was decided to have an Open House on the Blue and White Game weekend. M. Frazier said we really are talking about three open houses. 1. For graduate students; 2. for the public on a Blue and White weekend; and 3. for former students coming to the Great Insect Fair. President Runyon tabled the discussion until the next meeting.
There was a discussion of what private collectors had an interest in the museum? R. Mumma met with members of the Duke family whose son died in a

car crash. They sponsor a scholarship. They asked to see the Duke butterfly collection. R. Mumma said it is probably incorporated into the main collection. There was some discussion about the Duke family and their donations to Penn State and N. C. State. R. Byers will send the family a membership application to the Friends.
There was a discussion about voucher specimens in the museum collection. R. Ruiz will ask B. McPherson if he has voucher specimens of the fruit flies he works with? J. Runyon said that K. C. had many vouchers for the Sphaerocerids he collected. R. Snetsinger said there were voucher specimens for mites.
R. Snetsinger said there is a move to develop land in the Spring Creek corridor that the Gov. Rendell intends to release from Rock View Prison. R. Snetsinger said we should collect insects from the area before it is divided into parcels of land and developed for various uses. He said Benner Twp. Supervisors are not environmentally educated and they need to be informed that there are rare butterflies in the area that need to be preserved. This concluded New Business. Meeting adjourned at 11:20 AM.

Respectfully submitted,
R. A. Byers, Secretary-Treasurer

Frost Entomological Museum,
Penn State University
University Park, PA 16802
Feb. 28, 2007

Present were President Justin Runyon, Ralph Mumma, Maya Nehme, Bob Snetsinger, and Robert Byers. Minutes of the meeting held on Jan. 8, 2007 were accepted. Thirteen new student members joined. The Internal Revenue Service sent us two forms to fill out to comply with non-taxable status. Also, the Pennsylvania Department of State sent a renewal

form for the right to solicit funds. R. Byers will have the forms sent in before the next meeting. The treasurer's report was accepted. Total assets were \$13,783.67.

Pres. Runyon called for Old Business. Since there was none he called for New Business. H. Stout has a tour request for Friday, March 9 at 11:00. PA Virtual Charter School is coming from Norristown. She said the graduate students would like to help conduct tours and record the number hours worked for either credit or some other form of recognition. There was some discussion of the proposal. No action was taken. M. Nehme reported that the teaching collection of insects was in bad shape especially the Diptera. She asked if any Friends of the Frost Members had extra specimens on pins that they could donate to the collection? They need them as soon as possible. R. Mumma suggested we schedule a field trip to collect insects this spring.

R. Snetsinger reported that there is now a Murata collection of photographs and butterfly books in the museum. He also reported he will be making two field tours of Butterfly Gardens-in May and August.
R. Byers asked when is the open house scheduled? Pres. Runyon said it was the Blue White Weekend in April. He said we would postpone discussion until the next meeting.
This concluded the New Business. Meeting adjourned at 11:10 AM.

Respectfully submitted,
R. A. Byers, Secretary-Treasurer

New Threat to Honeybees- Colony Collapse Disorder

Colony Collapse Disorder

(CCD) is the name that has been given to the latest, and what seems to be the most serious, die-off of honey bee colonies across the country. It is characterized by, sudden colony death with a lack of adult bees in/in front of the dead-outs. Honey and bee bread are usually present and there is often evidence of recent brood rearing. In some cases, the queen and a small number of survivor bees may be present in the brood nest. CCD threatens the pollination industry and production of commercial honey in the United States. Initial studies on bee colonies experiencing the die offs

has revealed a large number of disease organisms present in the dying colonies, with most being “stress related” diseases and without any one disease being supported as the “culprit” underlying the deaths. The magnitude of detected infectious agents in the adult bees suggests some type of immunosuppression. Case studies and questionnaires related to management practices and environmental factors have identified a few common factors shared by those beekeepers experiencing the CCD; but no common environmental agents or chemicals were easily identified by these surveys. The search for underlying causes has been narrowed by the preliminary studies, but several questions remain to be answered. To better understand the cause(s) of this disease and



and with the hope of eventually identifying strategies to prevent further losses, a group of researchers, extension agents, and regulatory officials was formed. This group represents a diverse number of institutions including Bee Alert Technology, Inc. (a bee technology transfer company affiliated with the University of Montana), The Pennsylvania State University, the USDA/ARS, the Florida Department of Agriculture, North Carolina State University, the University of Illinois, the University of Delaware, and the Pennsylvania Department of Agriculture.

Diana Cox-Foster, Penn State Entomology Professor and member of this group, testified before the U.S. House of Representatives Committee on Agriculture Subcommittee on Horticulture and Organic Agriculture on March 29, 2007.

Brief Summary of CCD symptoms

In CCD, the bee colony proceeds rapidly from a strong colony with many individuals to a colony with few or no surviving bees. Queens are found in collapsing colonies with a few young adult bees, lots of brood, and more than adequate food resources. No dead adult bees are found in the colony or outside in proximity to the colony. A unique aspect of CCD is that there is a significant delay in robbing of the dead colony by bees from other colonies or invasion by pest insects such as waxworm moths or small hive beetles;

this suggests the presence of a deterrent chemical or toxin in the hive. Of particular note, we have found all adult bees in CCD colonies are infected with fungal infections. These findings may indicate that the bees are being immunosuppressed, but none of the organisms found in these bees can be attributed as the primary culprits in CCD. Researchers have focused upon three hypotheses underlying CCD, as follows:

- 1) Are new or reemerging pathogens responsible for CCD?
- 2) Are environmental chemicals causing the immunosuppression of bees and triggering CCD?
- 3) Is a combination of stressors (e.g., varroa mites, diseases, nutritional stress) interacting to weaken bee colonies and allowing stress-related pathogens such as fungi to cause final collapse?

Source Diana Cox-Foster. Penn State Dept. of Entomology. For more information see the Penn State web site www.ento.psu.edu.

The economic worth of the honey bee is valued at more than \$14.6 billion in the U.S. In Pennsylvania alone, honey bees and pollination are worth \$65 million annually through fruit crops, forage, and bee products (most notably honey). In addition to agricultural crops, honey bees also pollinate many native plants in the ecosystem.

New State Record for Banded elm bark beetle

By Faith Campbell -
- September 2004 -

The banded elm bark beetle *Scolytus schevyrewi* Semenov is a bark beetle native to Asia, ranging from the Caspian Sea (Kazakhstan, Turkmenistan, and Uzbekistan) to Korea (Anonymous, 2004). The "chevy" beetle was first collected in insect traps set in Aurora, CO (a suburb of Denver), and Ogden, UT, in April 2003 as part of the USDA Forest Service-APHIS Rapid Detection and Response project (Duerr, August 2004, pers. comm.). However, it was quickly determined that the beetle is established from California to the Midwest (Anonymous, 2004), as far east as Michigan (Haack, 2004). State records demonstrate that *S. schevyrewi* was present in Clovis, New Mexico, as far back as 1998 (Anonymous, 2004).

The banded elm bark beetle was probably introduced as a hitchhiker in wood packaging with bark attached (Anonymous, 2004).

In the United States, the beetle has been observed to attack and kill drought-stressed Siberian elms (*Ulmus pumila*) (Anonymous, 2004). So far, the beetle has attacked only American (*U. americana*), English (*U. procera*), rock (*U. thomasi*), and Siberian elms in the United States; but in Asia it has a broader host range, including willows (*Salix* spp.), fruit trees such as apricot, cherry, and peach (*Prunus* spp.), and Russian olive (*Elaeagnus angustifolia*) (Anonymous, 2004).



The biology of *S. schevyrewi* is similar to that of *S. multistriatus*, another exotic bark beetle native to Europe introduced decades ago, which has been the principle vector of Dutch elm disease in the United States (Anonymous, 2004). However, the the banded elm bark beetle appears to be more aggressive; in areas where it has become well established, it is much more abundant in dying elms than is *S. multistriatus* (Anonymous, 2004).

At this time, the banded elm bark beetle appears to pose a moderate risk to elms planted as shade trees or as windbreaks throughout the inland West, particularly during periods of drought (Anonymous, 2004).

Sources

Anonymous. 2004. *Scolytus schevyrewi* Semenov - An Asian bark beetle new to the United States. http://www.fs.fed.us/r2/fhm/reports/pest_update_s-

[schevyrewi.pdf](#). Accessed August 2004

Duerr, Donald. August, 2004. dduerr@fs.fed.us, personal communication.

Haack, R. 2004. Forest Diversity and resistance to native exotic pest insects. International Union of Forest Research Organizations D7/D8, August 10 - 13, 2004, Hanmer Springs, New Zealand.

This beetle has recently been detected in Pennsylvania by the Pennsylvania Bureau of Forestry. (Sven Spichiger, Personal communication)

Denise Piechnik joins Frost Museum



DENISE PIECHNIK began to work at the Frost museum April 7, 2007. Denise, a PhD candidate at UC Davis is completing her thesis in Conservation Ecology . Her thesis concerns Community assembly of food webs, and how habitat size and quality influence food-web structure. Her major Professor is S. Lawler Department Entomology, UC Davis. Denise is working on the Gettysburg Biodiversity Project to develop an arthropod management plan for the park using indicator taxa. Also, she and Jason Rohr will use the Gettysburg Lepidoptera to analyze taxonomic associations with landscape features using GIS data.
E-mail: dap26@psu .edu.

An Early Pennsylvania Entomologist

SIMON SNYDER RATHVON, Ph. D., one of Lancaster's most eminent and respected citizens, was born April 24, 1812, in the borough of Marietta, where, with the exception of three short intervals, he resided until 1848, when he removed to Lancaster. He died in 1891. His people were remotely of Swiss descent, settling in Lancaster county many years ago. Between the seventh and tenth years of his age he attended four or five terms, of three months each, at three different common schools, where he learned to read, write and cipher, as far as compound division; which completed his education. In 1832, Mr. Rathvon became a member of a literary society which numbered among its members Prof. S. S. Haldeman, Judge J. J. Libhart and others who became prominent in their chosen fields; it was soon merged into a Lyceum of Natural History with Mr. Rathvon as secretary. It was while affiliating with this society that he first felt the need of proper literary train-

ing; and to understand and realize the want was a sufficient cause for action. At this time he devoted his spare time to the study of mineralogy, herpetology and ornithology, collecting and preparing specimens

of all that the county produced.

In 1869 Mr. Rathvon assumed editorial charge of the Lancaster Farmer, continuing in the position until its suspension in 1884. In the columns of this periodical Mr. Rathvon is seen at his best as a scientific writer. Since 1861 Mr. Rathvon



had been Professor of Entomology to the State Horticultural Society, and also to the Philadelphia Horticultural Society since 1864, succeeding Prof. Haldeman. Since 1862 he had been curator and treasurer of the Lancaster Linnaean society, and its Entomologist, and had averaged about four papers annually to its transactions.



Rathvon Continued

By request he contributed two papers to the United States Agricultural Reports for 1861 and 1862, which were properly illustrated, treating of the several orders of insects in a popular manner, in this way filling the position of United States entomologist. Since 1869 he had been entomologist to the Lancaster County Agricultural Society and had frequently read papers before that body. In June, 1878, Franklin and Marshall College conferred upon him the honorary degree of Doctor of Philosophy.

The Doctor was a corresponding member of the following: Academy of Natural Sciences of Philadelphia, American Entomological Society, Davenport (Ia.) Academy of Sciences, and various local and State horticultural and agricultural societies; and in the transactions and reports of the above, in the Pennsylvania Farm Journal, Lancaster Farmer, American Entomologist, and the various local, daily and weekly newspapers are to be found some of his published articles, which number among the thousands.

Rathvon filled the vacant position United States Entomologist for the years 1861 and 1862

Dr. Rathvon was married May 27, 1834, to Catherine Freyberger, at Marietta, Pa. They had 11 children. If Dr. Rathvon's studies and merits did not bring him wealth, they at least brought him honors. He was an honorary member of many societies, at home and abroad. He was a member of Lodge No. 43, A. Y. M.; of Chapter 43, R. A. M., and of Goodwin Council, and also of Lancaster Cornmandery, No. 13, Knights Templar. He was for many years chairman of the Library Committee of the Mechanics Library. In early life he was known as a musician and took a pride in our volunteer soldiery. He became a member of a military company in early life and was its captain for a period of four years, holding his commission from Governor Ritner. His first literary efforts were made in 1844.

His remote ancestor in this country, John George Rathvon, was a lieutenant in the Pennsylvania militia during the Revolutionary war. (Source: Biographical Annals of Lancaster County, Pa., Beers, 1903, pp. 139-40.)

The only payment Rathvon ever received for his entomological work was for the two articles in the U.S. Agricultural Reports for 1861 and 1862 for which he was paid \$5/page (Wheeler and Miller, 2006).

Dr. Rathvon was a tailor by day and naturalist by night. He won the respect of eminent American entomologists including LeConte, who named three beetle species after, him-that is, species bearing the name *rathvoni*. (Wheeler and Miller, 2006). Wheeler and Miller advocated adding a 15th name to Sorensen's 14 early entomologists of the era 1840-1880. Sorensen as well as other historians had overlooked this famous Pennsylvania Entomologist. Wheeler and Miller in their extensive article emphasized that Rathvon greatest skill was as a field observer and an economic entomologist who advised farmers to take advantage of natural enemies. They consider Rathvon as one of the greatest early promoters of agricultural entomology in North America and advocate of a broad approach to pest suppression. One wonders how this man was overlooked by major historians?

References Cited:

Sorensen, W. C. 1995. Brethren of the net: American entomology, 1840-1880. University of Alabama Press, Tuscaloosa.

Wheeler, A. G. Jr. and G. L. Miller. 2006. Simon Snyder Rathvon: Popularizer of Agricultural Entomology in Mid-19th Century America. American Entomologist 52: 36-46.



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We are on the web
<http://www.ento.psu.edu/Frost/index.html>

Officers of FFEM 2007

Pres. : Justin Runyon
Vice Pres. : Hannah Stout
Past Pres. : Maryann Frazier
Sec.-Treasurer: Robert Byers
Members-at-Large:
Beth Brobst
Don Brobst
James Frazier
Ralph Mumma
Robert Snetsinger
Newsletter Editor:
Robert Byers

MEMBERSHIP APPLICATION
Please enroll me as a member of the
Friends of the Frost Entomological Museum

Name _____
Address _____

Phone _____ (home)
_____ (work)
_____ (FAX)
_____ (e-mail)

Membership Category

Yearly
Student (Ladybug) \$10.00
Individual (Firefly) \$20.00
Family (Honeybees) \$25.00

Sponsorship Category

Lifetime (over five years)
Silver Skippers \$500
Golden Scarabs \$1000
Monarchs (Corporate) (\$ variable)

Please send completed application and check payable to: **Friends of the Frost Entomological Museum**
c/o Dept. Entomology, 501 ASI Bldg., Penn State Univ., Univ. Park, PA 16802

Welcome New Members !

Amanda Bachman
Tracy Conklin
Sean Halloran
Christy Harris
Jinwon Kim
Kerry Mauck
Helene Quaghebeur
Erica Shoemaker
Rajwinder Singh
Donglan Tian
Owen Thompson
Raul Ruiz

Upcoming Events

Ent Soc Pa Collecting Trip, June 22-24, 2007 French Creek State Park

Butterfly Bob's Centre County tour of Butterfly Friendly Habitats Aug. 4, 2007

Great Insect Fair Sept. 29, 2007