



BIO NEWS



NEWSLETTER OF THE CCSU DEPARTMENT OF BIOLOGY

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STUDENT NATURE PHOTOGRAPHY

Biology Major, Rebecca Flugrad, is an amateur photographer. She likes to hike and always takes her camera with her. Her favorite subjects are mushrooms and plants. The photographs below were all taken by Rebecca around the CCSU campus, except the two photos on the right, which were taken in other Connecticut locations.



Bio Factoid of the Month:

New World's Record. A mutation rate of 1 change per 400 bases per round of replication in an RNA viroid parasitic on chloroplasts was reported a month ago in the journal *Science* by Selma Gago and her colleagues in València, Spain. This rate is about one hundred million times higher than the mutation rates typical of eukaryotes, such as humans.

April Biology Announcements

Biology Seminars Mondays at 2:00 pm NC 236

Dr. Doug Carter, CCSU Department of Biology. Endosymbiotic Gene Transfer. **6 April.**

Dr. Andrew Stoehr, Yale University. Butterfly Wing Patterns: A Look From the Outside In, and Back Again. **13 April.**

Dr. Elizabeth Jakob, University of Massachusetts Amherst, Department of Psychology. Tiny Brains and Big Eyes: Learning and Perception in Spiders. **20 April.**

Recent Biology Department Accomplishments

Student/Faculty Publication

Blair, C., and T. M. Doan. 2009. Patterns of community structure and microhabitat usage in Peruvian *Pristimantis* (Anura: Strabomantidae). *Copeia* 2009:303–312.

Publication by Professors from Peru, CCSU, and SCSU

Mione T., S. Leiva G., L. Yacher. 2008. Transfer of *Saracha weberbaueri* Dammer subspecies *pallascana* Bitter, also known as *Saracha pallascana* (Bitter) Macbride, to *Jaltomata* as *J. pallascana* (Bitter) Mione (Solanaceae). *Arnaldoa* 15(2):285 – 288.

Dr. David Spector published "Birders, Burroughs, Birdwatchers, and Ornithologists" in volume 41, number 3 of *Wake Robin*, the newsletter of the John Burroughs Association at the American Museum of Natural History.

The Subnivean World Revealed. Where I live, about 50 miles north of campus, this past winter has been a classic New England winter, with about three months of continuous snow cover. As I write, at the end of March, the last bit of snow has yet to melt on my lawn. While the snow melted over the past couple of weeks, tracks made weeks or months earlier gradually reappeared and then melted away. Especially notable was the marbling of squiggly tunnels that marked the retreating snow line, sign that voles, small mammals in *Microtus* and related genera, had thrived beneath the snow.

With the snow now gone from most of the lawn and the grass still matted down, the vole runways, trampled paths in the grass, are as visible as they ever are. Even more remarkable are a few balls of dead grass, a bit larger than softballs, that are showing along the runways. These are vole nests, structures usually hidden under vegetation, that were constructed beneath the protective layer of snow. Now that the snow is melted the nests are exposed to the weather and vulnerable to foxes, squirrels, crows, and other predators who would welcome a meal of vole pups. These nests are probably abandoned as they are exposed and replaced with better sheltered abodes.

The combination of a period of extended snow cover followed by a melt has given me a view of the usually hidden subnivean (i.e., under snow) world. While the snow lasts, only occasional holes on the surface or glimpses of small mammals briefly surfacing and then diving back down hint at the life beneath the protective cover of snow. Now, late winter and early spring, with that cover removed, food depleted, and new growth not yet providing much food or shelter, is a perilous time to be a small mammal.--David Spector

Punnett Square Sudoku

- [1] The paternal genotype is $AabbX^CY$ and the maternal genotype is $AaBbX^{CX^C}$
- [2] Aa is lethal for a male
- [3] B is lethal if maternally inherited
- [4] aa in a male removes the Y chromosome and replaces with a replicated X in the zygote.
- [5] C is X -linked and codes for the purple phenotype. Y lacks the C gene and is non-coding for color.
- [5] Assume simple inheritance otherwise and a mammalian system.

What are the F1 phenotypes and genders?

And do this within only the 4x4 Punnett Square.
