WHY FRUIT FLIES DO IT!
by - M. Rocheford, CSB Senior Biology Major

As you sit listening attentively to that Biology lecture, you suddenly become distracted by a tiny fly. This isn’t just any fly however, it is probably a fruit fly. This beast, better known to geneticists as *Drosophila melanogaster*, has been used for years to help unlock the mysteries of genes and the code describing life. Not only is this tool being used by students in Genetics, but it is also being used in the research being conducted by senior Margy Rocheford and Dr. Charles Redell.

Their project, which was started in October 1988, is composed of two parts. The smaller, which is a basic linkage analysis, is being done to check the recombination percentages among genetic markers on all of *D. melanogaster*’s major chromosomes. The more important part of this research involves the selection for high and low numbers of sternopleural bristles on the thorax. The end result of this long term experiment may confirm the theory of gene “hitch-hiking”, in which recombination rate genes are thought to “hitch-hike” along with neighbor genes during the selection process. Though this may sound rather Ho-Hum, it really relates to the question of why many kinds of organisms reproduce sexually. Now, that should tweak your interest. Eventually, as this project produces useful information, the results are hoped to be published.

So the next time you become distracted in class, just remember that you are getting a first look at what could be another piece in the puzzle of life!

BIOLOGY CLUB NEWS by -Katie Coldren and Belinda Miller

The 1989-90 Biology Club is looking forward to an excellent year. Our first event, the Homecoming Pre-Game Party, was a success and it looks as if it will be back next year. Several members of the Biology Club also worked at the Homecoming Cocktail Party. We got the chance to talk with alumni and make money for the club.

Some of the upcoming events include: a fall pizza party, tentatively planned with both the Chemistry and Physics Clubs; a presentation on the Pacific Northwest on St. Croix National Park Service; “What can I do with a Major in Biology?” sponsored by the Career Resource Center; and a Christmas Party. During J-Term, we hope to go on a cross country ski trip to observe nature in winter.

The year is full of exciting, educational events. If you have ideas for this semester or next semester, just let us know!

ECHO INTERNSHIPS

Leslie Skukic, CSB ’86, writes that the Educational Concerns for Hunger Organization (ECHO) in North Fort Myers, Florida offers possible internships. For more information contact Dr. Saoupe (2782) or Ms. Jill Farry, CSB Internship Director. Leslie, who is currently an assistant squash and cucumber breeder for Northrup King, also invites anyone interested in information about life in southwest Florida to contact her.
MEET DR. MARCUS WEBSTER by - Marsha Byron

Marcus Webster is a new assistant professor in the Biology Department at CSB/SJU. He presently is teaching General Physiology, Comparative Physiology, and Anatomy and Physiology.

Dr. Webster grew up in Hanover, Indiana located in the scenic Ohio River Valley. Dr. Webster attended Lewis and Clark College in Portland, Oregon, and graduated with a B.S. in Biology in 1976. He earned a Ph.D. in zoophysiology from Washington State University. In 1983 he completed his research dissertation on the “Role of Evaporative Water Loss in Pigeon Thermoregulation.”

Dr. Webster taught Physiology and Anatomy at Franklin College, IN from 1983-86. He left in 1986 to do post doctoral research on the energy and water requirements of desert birds at the University of California, Davis.

Dr. Webster’s areas of special interest include, energetics of wild birds, physiological ecology, heat defense and osmoregulation in vertebrates.

Dr. Webster’s life, however, hasn’t been all work and studying. He also enjoys bird-watching, back packing and cross country skiing.

When asked about his long-term goals or dreams, he answered by saying that he wishes to contribute to our understanding of energy and water use by animals, to improve the status of the physiology lab, and to survive this year.

I also asked him what he thought of Minnesota thus far, and he said he thought it was warm! He like the pretty fall leaves, and most of all the friendly and generous people.

Dr. Marcus Webster has just one expectation for this semester, and that is that all of his students will pass.

We wish you the best of luck with this year, Dr. Webster, and hope that you enjoy all Minnesota and St. John’s and St. Ben’s have to offer!

PLANT BIOTECH OPENING

The Pillsbury Company, Minneapolis has an opening for a full-time Lab Technician. Responsibilities include general lab organization, tissue culture and micropropagation. For more information contact Dr. Saupe (2782).

ALUMNI NEWS

John Benson, SJU ’89, writes that he is currently working in the Oncology Research Lab at the Mayo Clinic, Rochester, MN. John really likes his job, but misses "the school scene".

EARTH DAY VOLUNTEERS SOUGHT

April 22, 1990 marks the celebration of the 20th Anniversary of Earth Day. An estimated 20 million people took part in this event which essentially marked the beginning of the modern environmental movement.

The Biology Department is planning activities to commemorate Earth Day. The tentative goal is to sponsor an "event" a month culminating in a major celebration on Earth Day. A committee is now forming to plan these activities. If you are interested in helping, please attend an organizational meeting on Tuesday, 24 October, 1989 in SC 343 at 4:00 P.M. If you can't attend this meeting, please contact Dr. S. Saupe, 2782.

EARTH DAY TIP #1: TRANSPORTATION

With the world's population zooming towards 8 billion, it's hard to believe that one person can make a difference - but you can! There are many things an individual can do to minimize their impact on the environment. In every issue of Bioteedbar, we will share ideas with you.

* Use public transportation. The "Bennie" bus is the best deal on campus! We encourage students and faculty to take advantage of this wonderful service when commuting between campuses.
* Walk, carpool or bike if you can.
* Drive a fuel efficient car.
* Keep your car well tuned.
* Live close to your place of work.
* Call ahead before you shop and consolidate errands.

NEW EQUIPMENT IN THE DEPARTMENT

This summer the Biology department acquired some exciting new equipment that will be available for classes. These items include: Macintosh SE computer, UV-visible scanning spectrophotometer, microplate reader, sequencing apparatus, vertical gel stands, -20 freezer, vacuum pump, Transmission electron microscope, pH meter, slab gel drier, microwave oven and molecular biology videotapes.
HOW I SPENT MY SABBATICAL by Dr. S. G. Saupe

I spent spring semester in the Department of Biochemistry and Biophysics at the University of California, Davis. I was a visitor in the lab of Dr. Eric J. Conn, a biochemist and expert in cyanogenesis (production of hydrogen cyanide) in plants. My official title at the university was "Visiting Associate Plant Biochemist in the Agricultural Experiment Station in the Department of Biochemistry and Biophysics, College of Agriculture and Environmental Sciences", which essentially meant that I could use the library.

My main goal was to prepare papers from data that I’ve accumulated during the past several years. I wrote five manuscripts on such topics as ‘The production of HCN by cultures of the fairy ring mushroom, Marasmius oreades’, ‘The taxonomic significance of cyanogenesis in fungi’, ‘Using analogies in biology teaching’, ‘Light and cyanide production in flax’, and ‘The effect of drying on fungal cyanogenesis’.

In addition to the writing, I sat in on several classes, attended numerous seminars, presented a seminar to the Mycology group on my research in fungal cyanogenesis and caught up on the literature of cyanogenesis and anhydrobiosis. I also visited the herbaria at UC-Berkeley and San Francisco State.

My family accompanied me on the trip and we had a wonderful time together. We met many nice people, got to visit some wonderful places (Lake Tahoe, San Francisco, Disneyland, San Diego) and lived an idyllic, stress-free life in comparative warmth. Now, I’m all rejuvenated and ready for another seven years of teaching before my next sabbatical.

FALL COLORS

Well, it’s that time of the year when chlorophyll pigments decompose to expose the carotene and xanthophylls that go unnoticed during the remainder of the year. These yellow to orange to brown pigments are terpenes (types of lipid) and occur in plastids. In other plants such as the sugar maple, decreasing daylength and cool temperatures signal the synthesis of another group of pigments, the flavonoids. These water soluble pigments are found in the vacuole of the cells and are responsible for the bright reds, oranges and purples of many leaves.

TEST YOURSELF: BIRD SILHOUETTES

How many of the following birds can you recognize by their silhouettes? Answers elsewhere in this issue. Quiz courtesy of the Heritage Park Nature Center, St. Cloud.
WEBSTER GIVES PAPER

Dr. Marcus Webster, CSB/SJU Biology Department, presented a paper entitled "Seasonal changes in energy and water requirements of verdins, *Ampiparus flaviceps*," at the annual meeting of Cooper Ornithological Society in Moscow, ID in June.

This research, conducted at the Deep Canyon Desert Research Center in California's Colorado Desert, involved the use of isotope-labeled water to measure the metabolism of free-living verdins (relatives of our Black-capped Chickadees). Dr. Webster found that verdins use more energy, in the form of their insect food, during cold winters. In summer, water use is highest as verdins pant to keep cool in the heat of the day.

Papers describing his research will be published in *The Condor* (Nov. 1989), and *Physiological Zoology* (Jan. 1990).

COUCH POTATO SCIENCE

The following is a partial list of biology orientated programs that will appear on television in the near future. They would be great fillers during study breaks.

Oct. 21 — (PBS) Wild America - "Wild Cats"
Oct. 22 — (PBS) Nature - "Breaking the Continent"
Oct. 23 — (PBS) Newton's Apple - Spiderwebs
Oct. 30 — (PBS) Journey into Sleep
Oct. 31 — (PBS) NOVA - "Decoding the Book of Life"

ANSWERS TO SILHOUETTE QUIZ

1. Chimney swift
2. Goldfinch
3. Barn swallow
4. Purple martin
5. Flicker
6. Mourning dove
7. English (House) sparrow
8. Barn swallow
9. Grackle
10. Starling
11. Song sparrow
12. Blue jay
13. Chickadee
14. Downy
woodepecker
15. Bluebird
16. Common nighthawk
17. Robin

BIOFEEDBACK

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