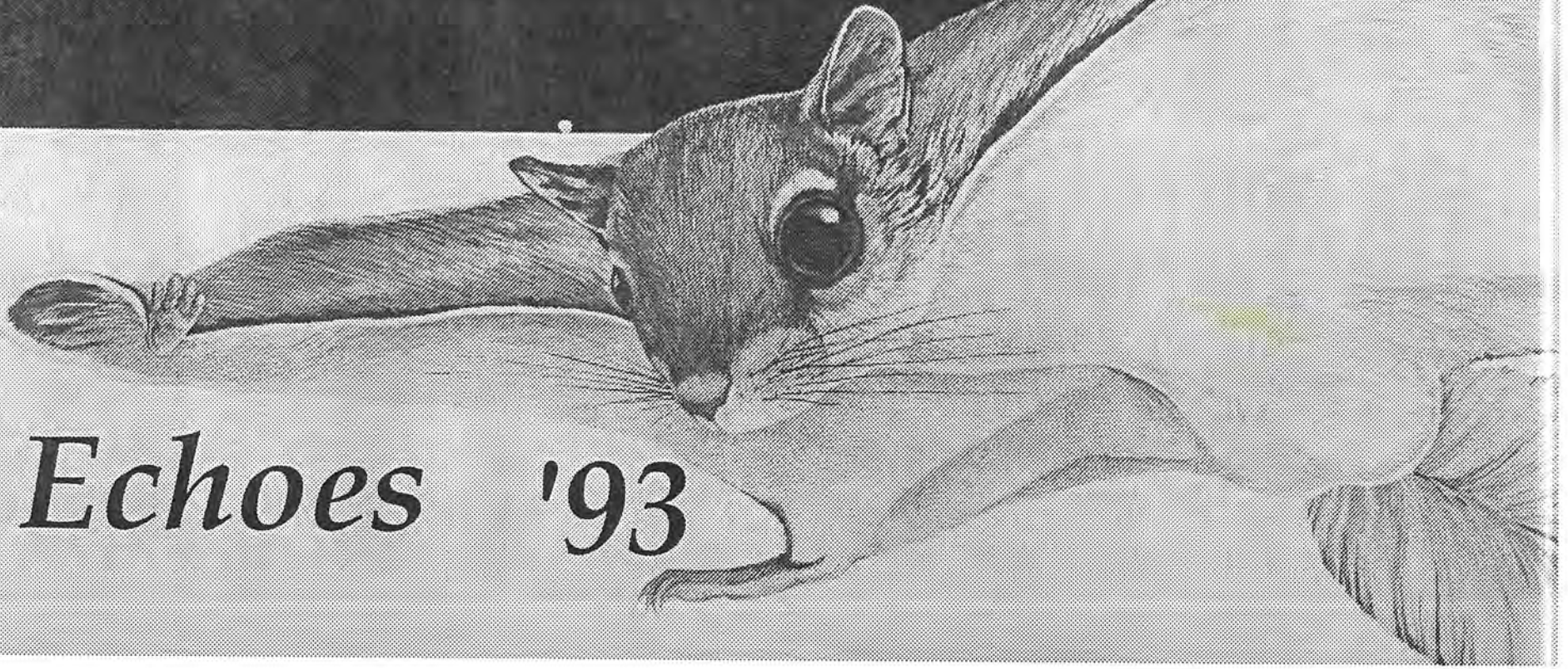


*Mountain Lake  
Biological Station*



*Echoes '93*



## MOUNTAIN LAKE BIOLOGICAL STATION

UNIVERSITY OF VIRGINIA

24 September 1993

Dear Mountain Laker:

The year of the Flying Squirrel was a memorable one. Not so much for small mammals as for the larger, bipedal ones. All six classes went very well. We have captured Peter Karieva and he will return for an encore in Conservation Biology next summer. We will have a new combination of two old friends with a duet in Ecological Genetics by Jim Murray and Dave West. We intend to raise the porch roof on the dining hall to accommodate them. To balance the old we will have a brand new pair, Anne Houtman and Alistair Innman, teaching Behavioral Ecology. Ray Chandler, an old Mountain Laker in a new role, will be offering Ornithology. The laboratory end of things will be faithfully maintained by Charlie Werth (Isozymes) and the Mike Timko - Dan Burke double helix.

The great success of 1993 was the REU program. We had twenty really excellent people working very hard on a wide range of projects. My moment of greatest pride this summer was when the REU students gave their talks. (I will get those papers read before another month passes, I promise). The check is in the mail for next year's program so please tell your friends. We can stand a few repeaters and I hope to see many of you back in one role or another.

The station continues to change its looks. New porches will be obvious on all the cottages. Holbrook will be a little less interesting in the middle of the night. The Lewis Lab will get a new fume hood, more new lights, more grounded outlets, and improved bathrooms. The big mess will be the aftermath of a new water and sewer system. Don't expect any more geysers. I met with the architects for the new aquatic laboratory last Wednesday. Construction will be well underway by next summer.

I hope all of you have a good winter. We will get out new brochure and posters later this fall. Tell your friends about us and keep those Bitnets coming.

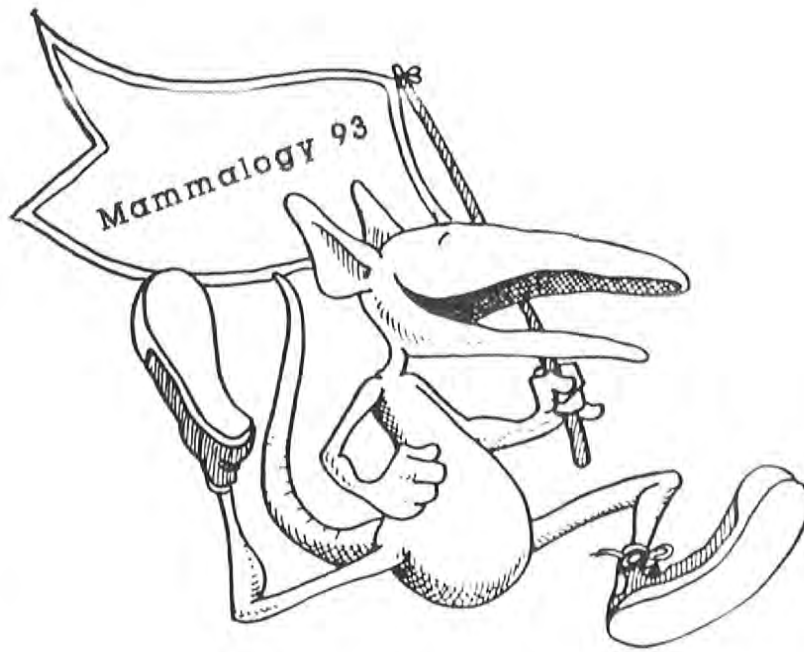
Best wishes,

Henry M. Wilbur  
Director

*To botanize or*



*not to botanize*



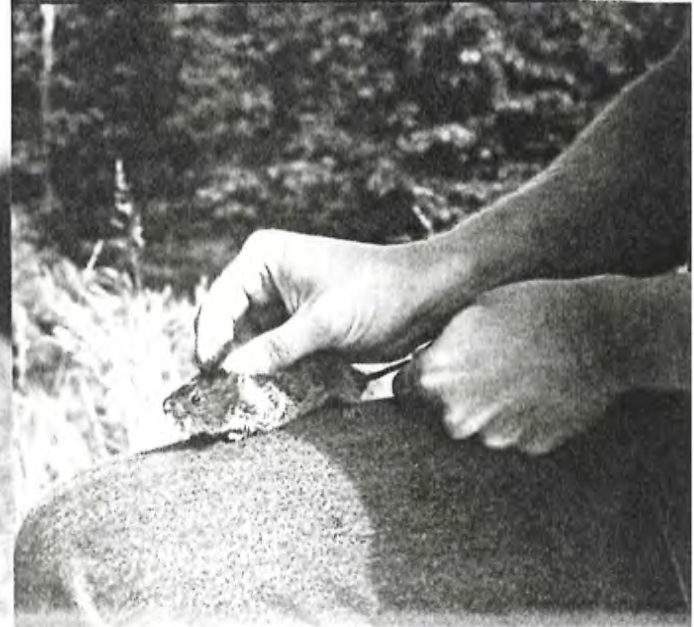
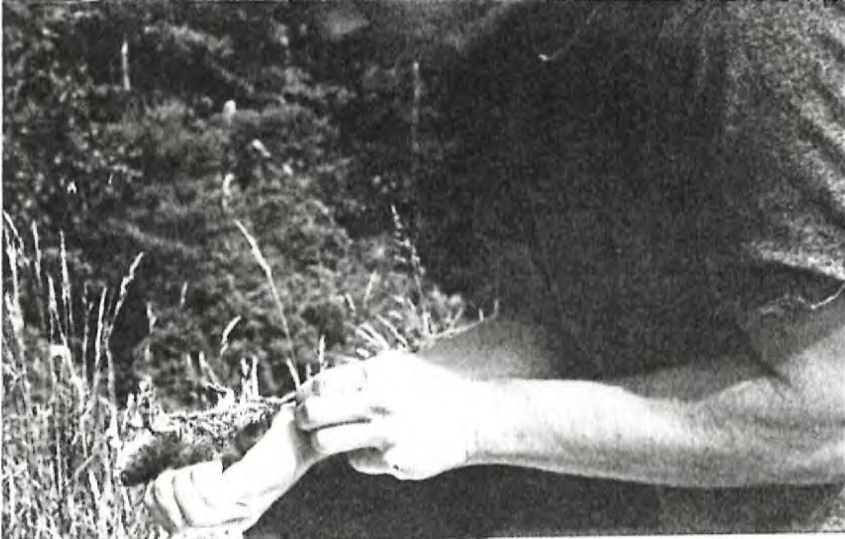
There was a group at the lake this year  
 With files and folders of notes to peer  
 The group was often known to say  
 "Lecture again on a beautiful day!"  
 But trap and bag and tag and weigh  
 The group was always ready for the day  
 With mice and voles and munks to trap  
 The fingers of many were often wrapped  
 Bitten and smitten by the smallest prey  
 They quickly learned to handle the fray  
 The class was fun, was often heard  
 And Jack would after a kindly word  
 With traps to run off we would go  
 And a few went down to enjoy a show  
 There was a mammal aide this year  
 She brought us warmth and good cheer  
 She set the traps with hands so true  
 Even when she was a bit blue  
 With her grids to run she had such fun  
 Bag and tag always on the run  
 She made us all enjoy the session  
 Mammalogy thanks you for your lessons!



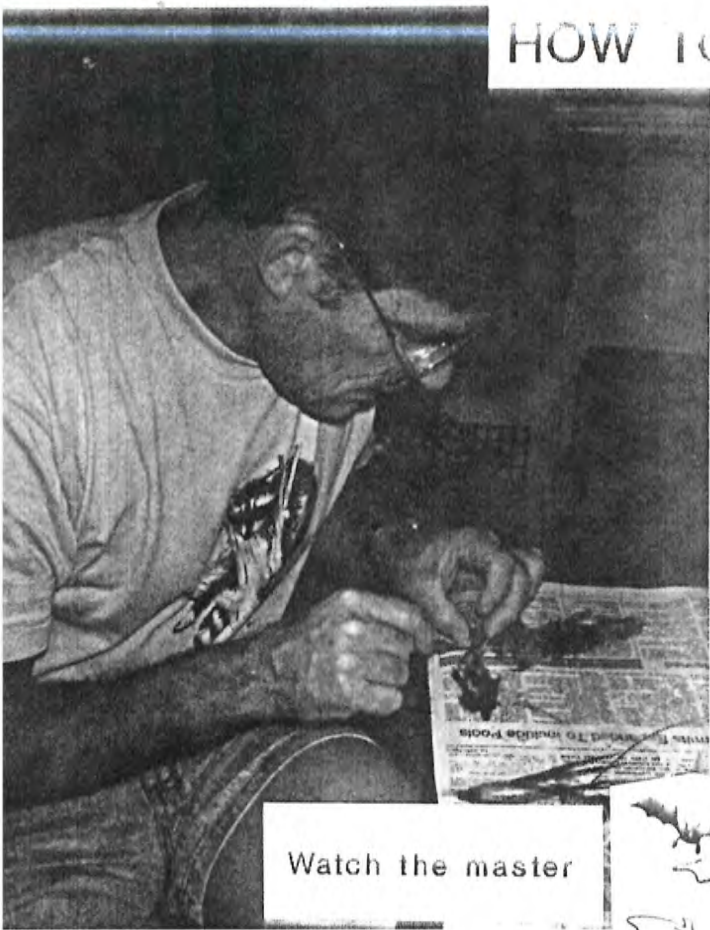
# MAMMAL MOMENTS



AREN'T THEY CUTE!



# HOW TO SKIN A MAMMAL



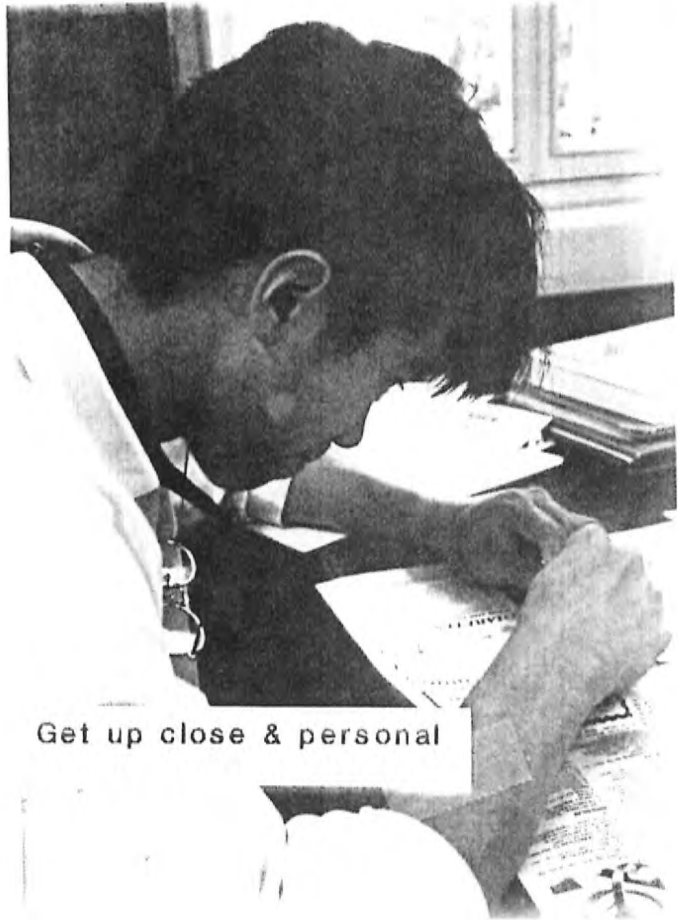
Watch the master



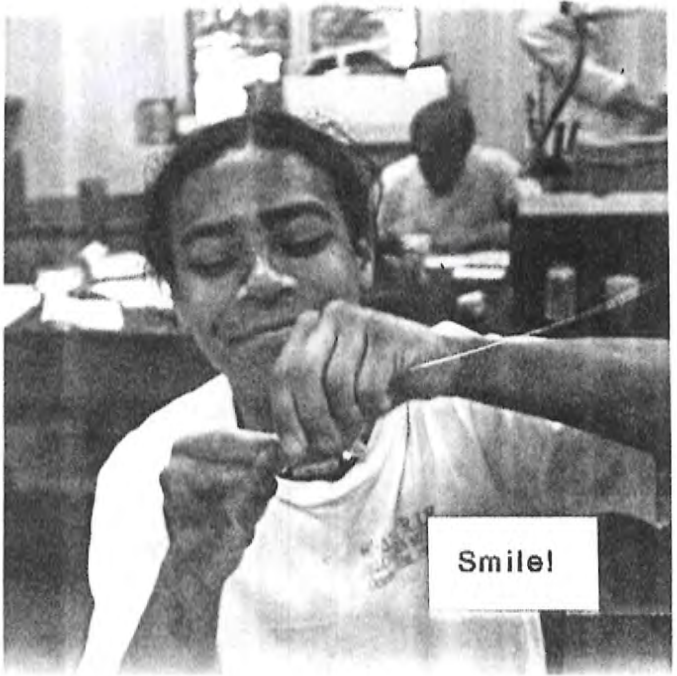
Hold your nose!



Stick out your tongue!



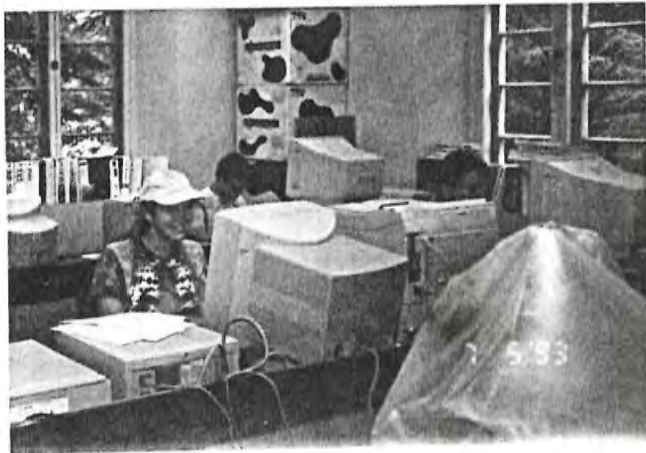
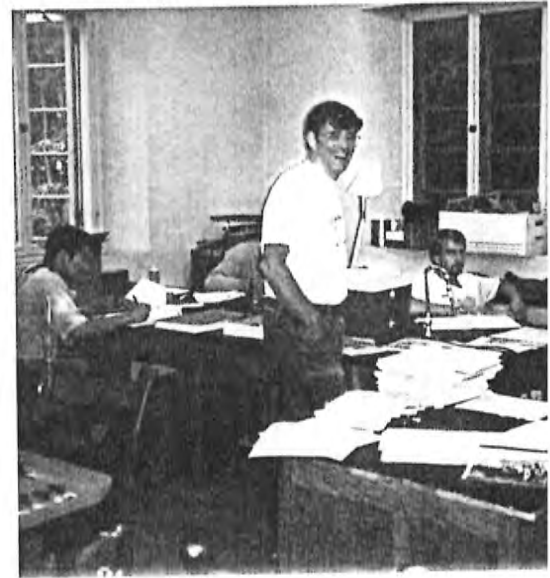
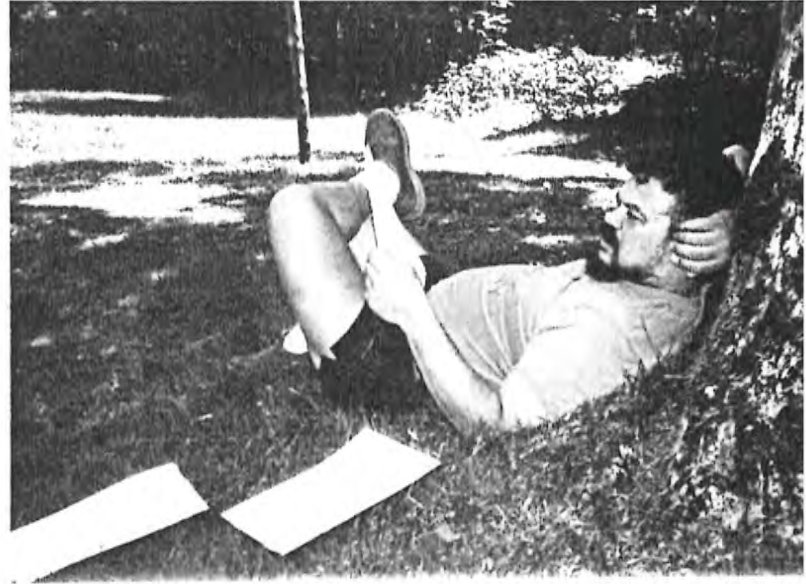
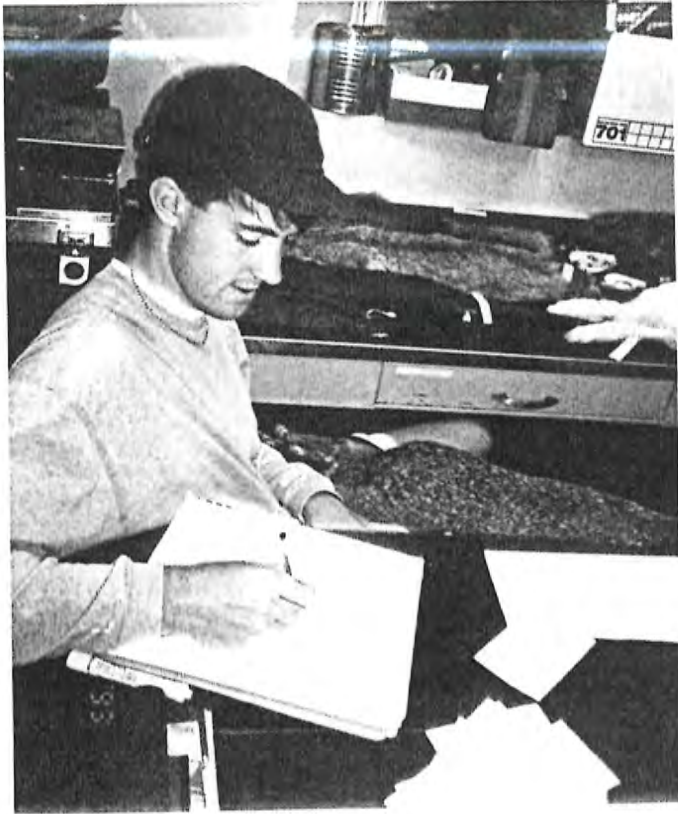
Get up close & personal



Smile!

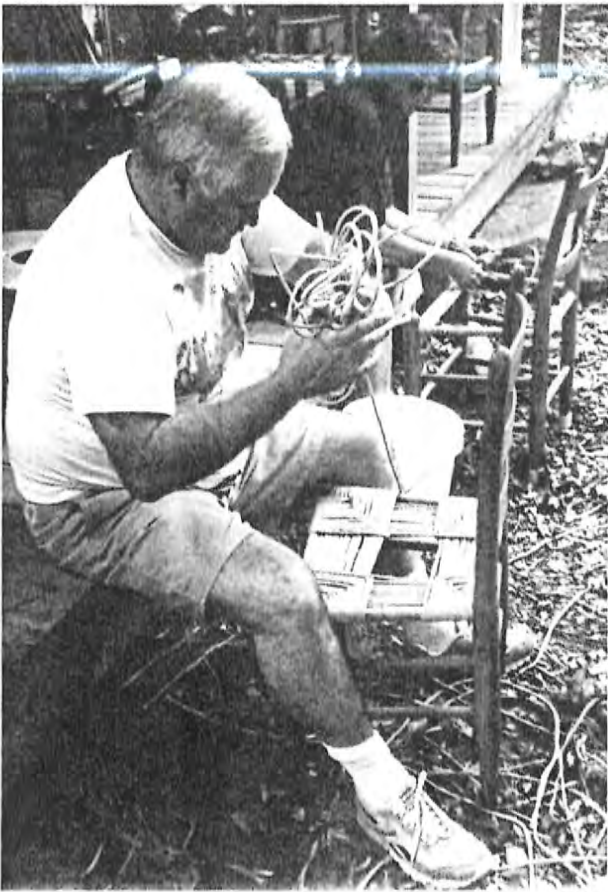


# TIME IN...TIME OUT

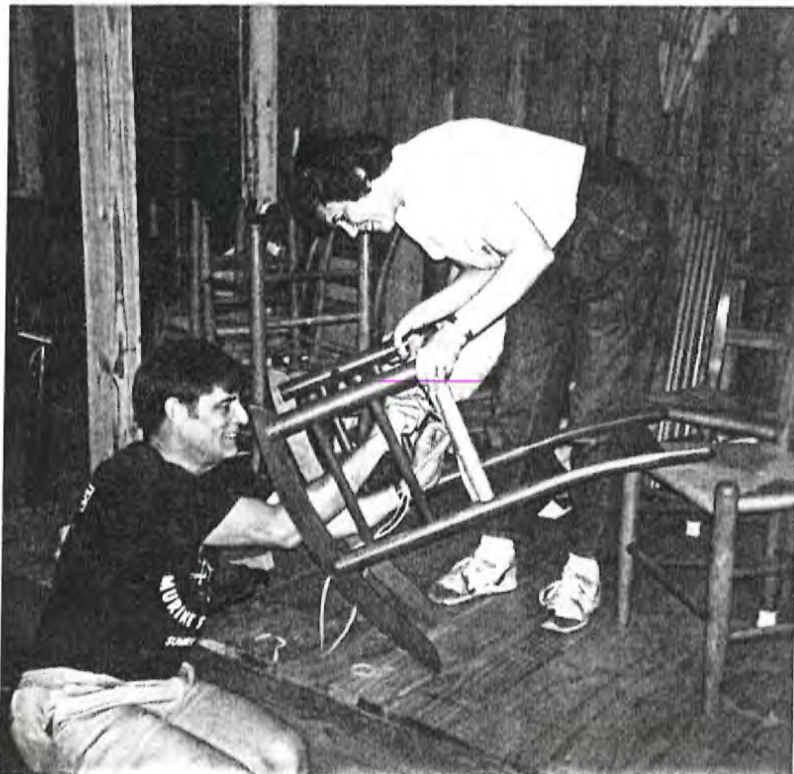




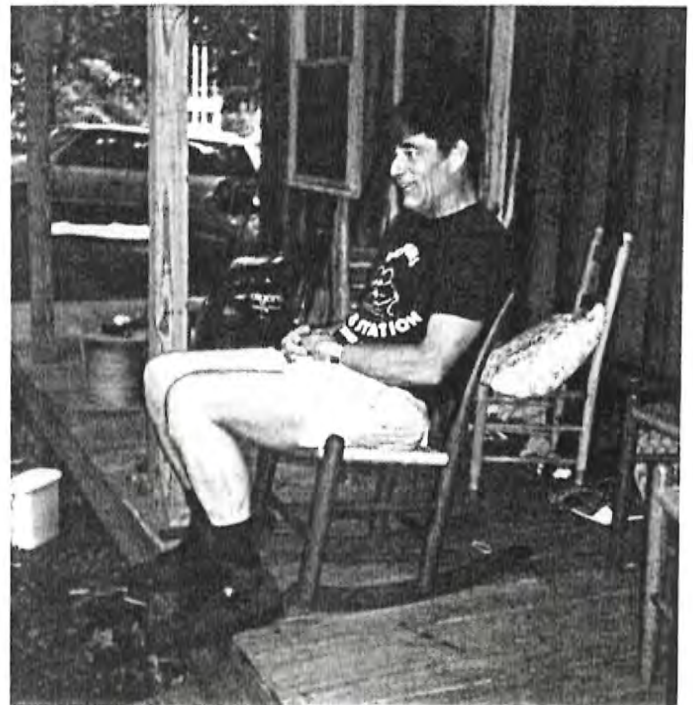
# CHAIR BOTTOMS: 101



Please don't make me take it apart!

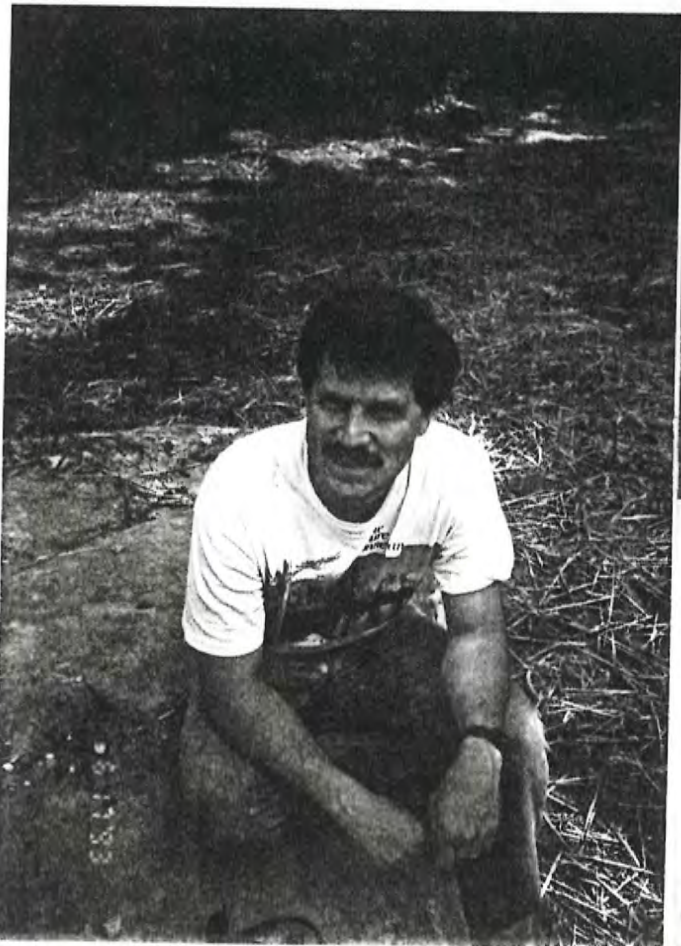


I'm almost done..



Hey, it fits!

# The Junco Bunch





## Psalamander Psalm

Yea, though I walk in the valley of Hunter's Branch

I fear no *Quadramaculatus*

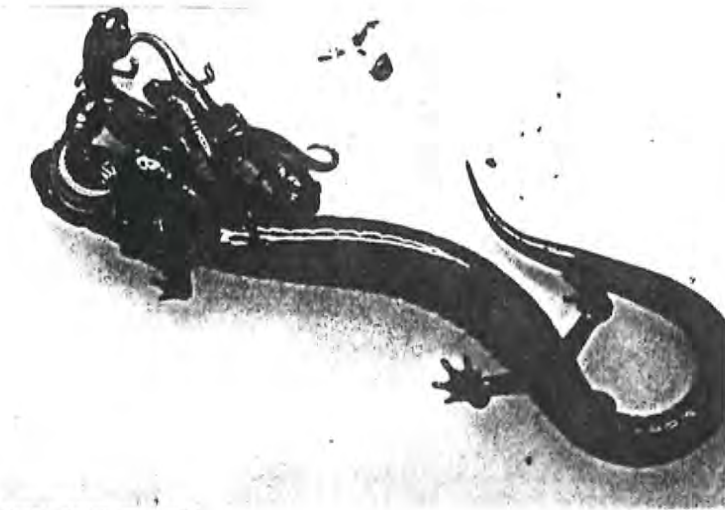
The salamander is my shepherd;

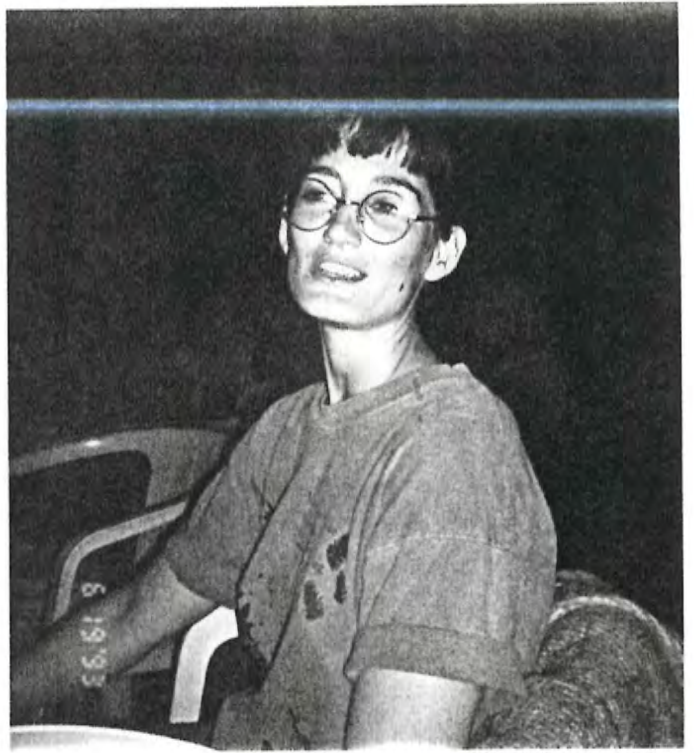
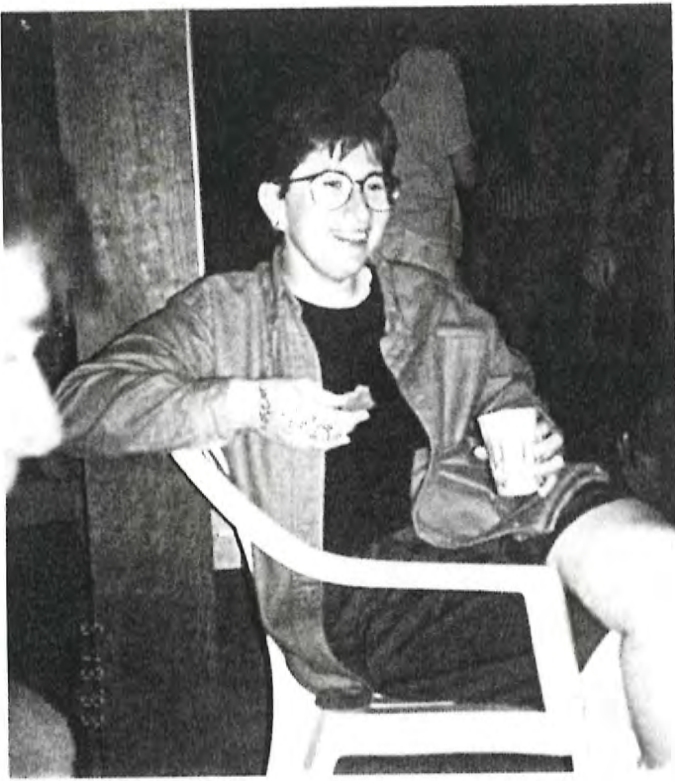
I shall not want

My boxes and nets are beside me;

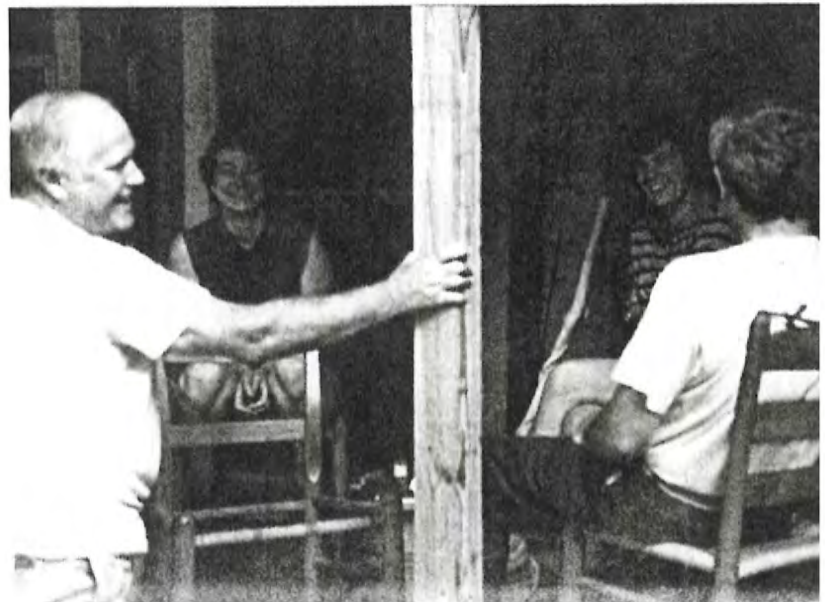
My collecting bag runneth over!

Mark Gustafson





*just sittin'*

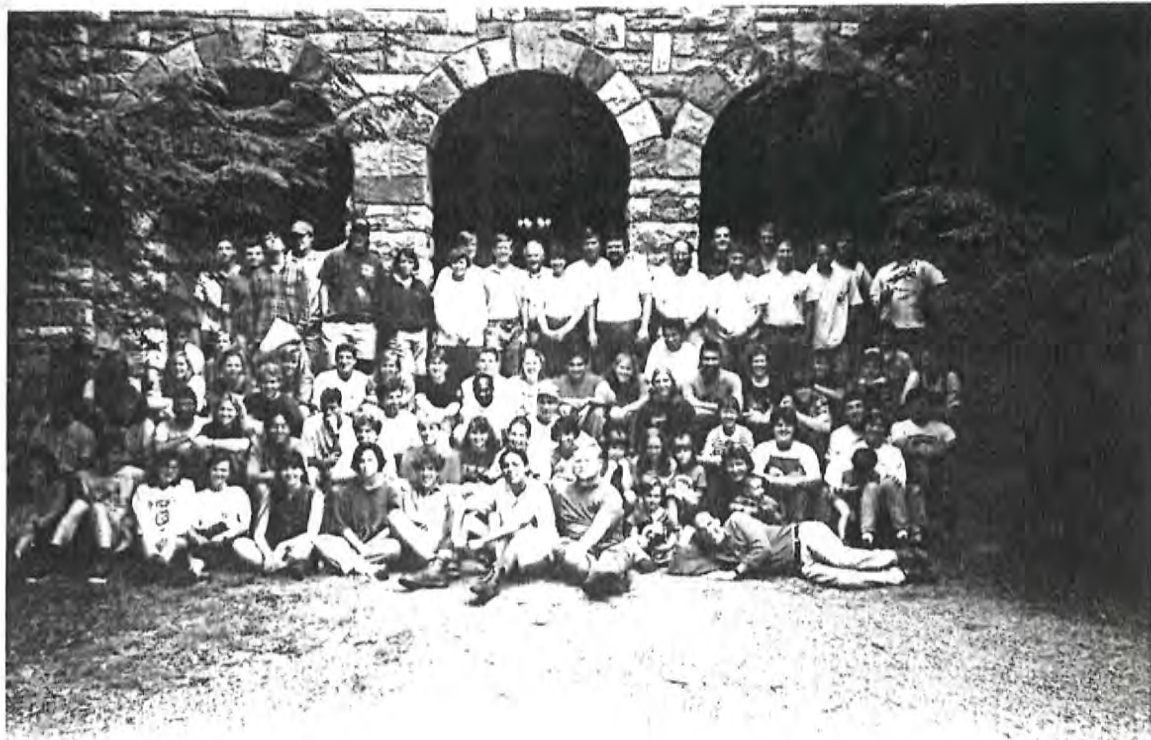


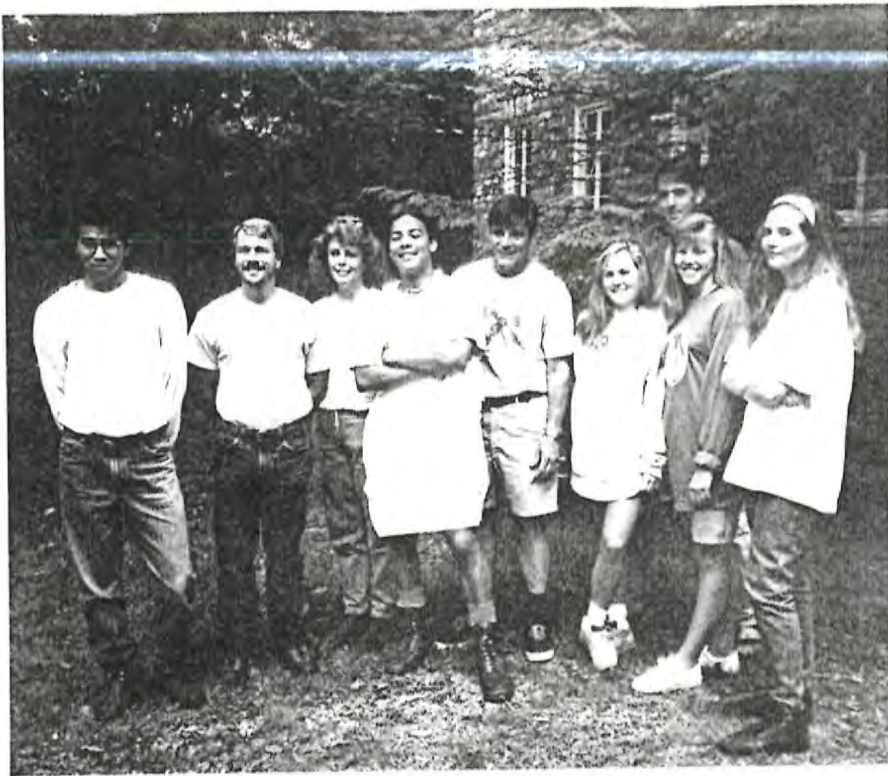


*PICTURE DAY*

*PICTURE DAY*

*PICTURE DAY*





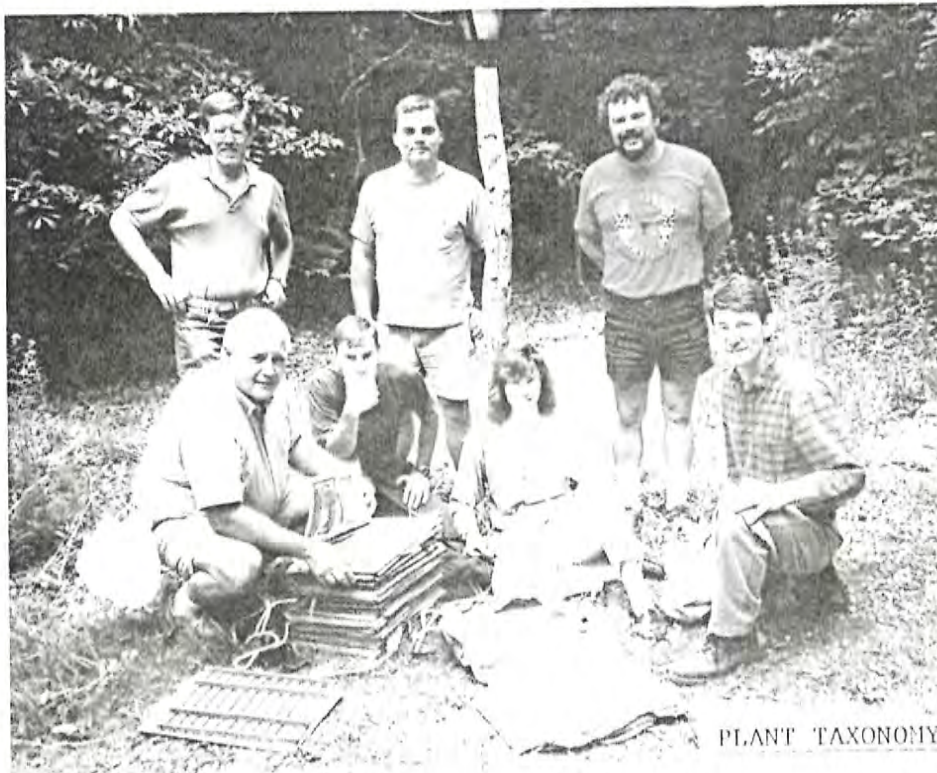
MAMMALOGY CLASS

L to R: Duc Le, Barry Thompson, Debbie Fortune, Sean Watts, Dr. Jack Crauford, Laura Miller, Aaron Meek, Denise Nickels, Melody Counts



DNA WORKSHOP

L to R: Emmanuel Aigbokhan, Dr. Dan Burk, Thelma Tennant, Dan Couture, Ellen Yager, Ben Brooke



PLANT TAXONOMY CLASS ET AL.

Kneeling: Dr. Spencer Tomb, Chris Mars, Janice Wright, Walter Chaney  
 Standing: (Onlookers) Robert Coxe, Jay Raveill, Charlie Werth



THE SALAMANDRIDAE

L to R: John Fauth, Kerry Yurewics, Buck Buchanan, Eve Kaplan, Bob Jaeger, Michelle Thieme, John Owens, Leigh Rosenberg, Caitlin Gabor, Miles Silman, Stepha Welter, Mark Gustafson, Henry Wilbur



SILENE (ALBA & VIRGINICA)

Kneeling L to R: Michelle Dudash, Charlie Fenster, Laura Rose, Sonia Althizer, Emily Lyons  
 Standing L to R: Peter, Jacqui Shykoff, Jay Raveill, Veronique Perrot, Chad Shaw, Erika Bucheli, Elizabeth Crone, George Risher, Steve Burckhalter, Todd Preuninger



JUNCO TEAM

L to R: Ray Chandler, Rus Titus, Dave Enstrom, Tracey St, Suzanne Folke, Dana Morris, Eric Snajdr, Michelle Wthorne & Houston, Jennifer Hill, Lori Christensen



FOREST ECOLOGY

L to R: Margo Wilkinson, David Lawrence, Steve Stephenson, Anurag Agrawal, Richard Shinaman, David Horne, Crispen Jordan, Jason Forman, Jena Hickey



STRIPED MAPLE GROUP

Stuart McDaniel, Sharon Wise, Miles Silman, Jenni Everhart, Tonia Korves, Pat Peroni



REU'S

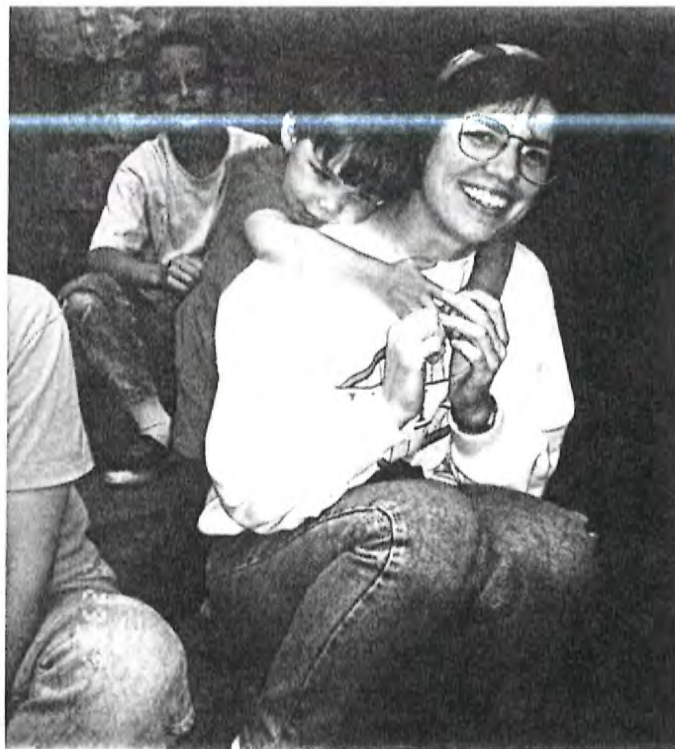
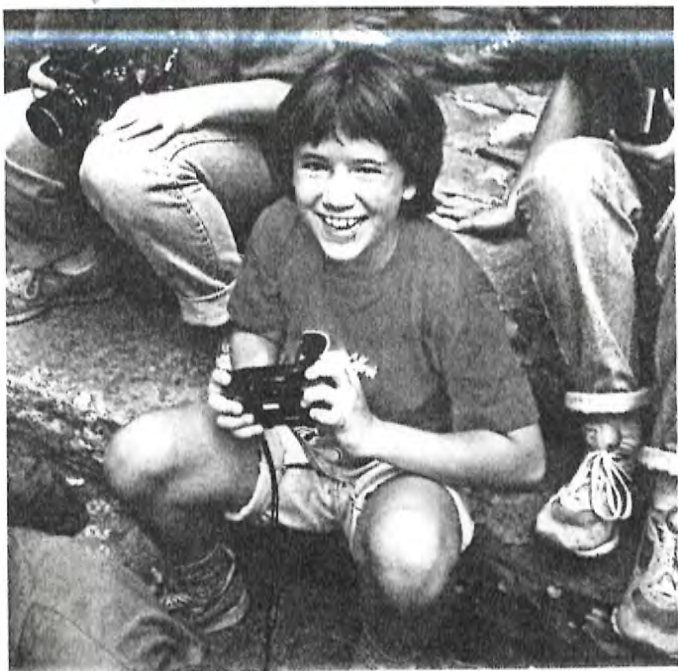




**MORE PICTURE DAY MADNESS**



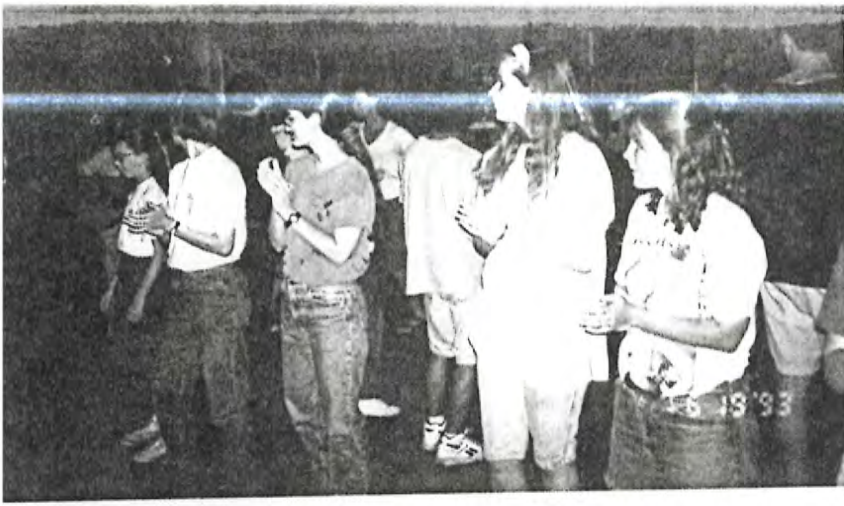
*Mt. Lake...*

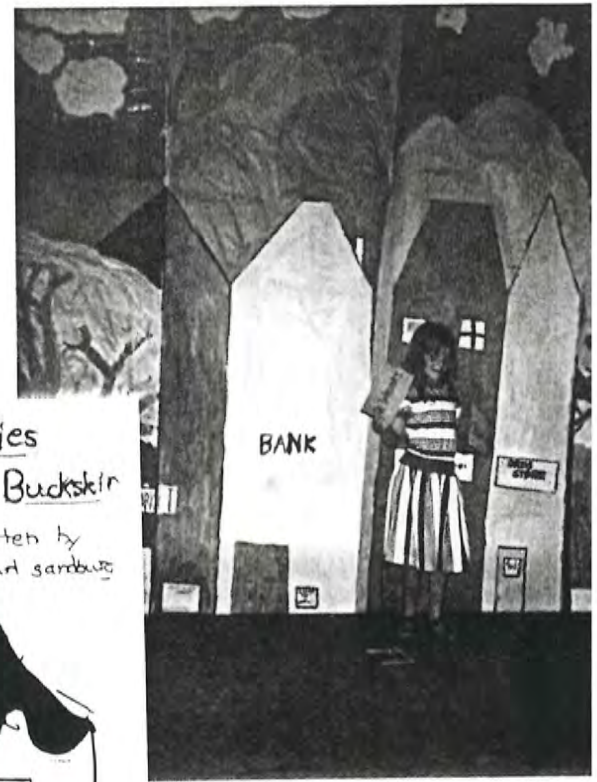


*the Next Generation.*



# Saturday Night Swing

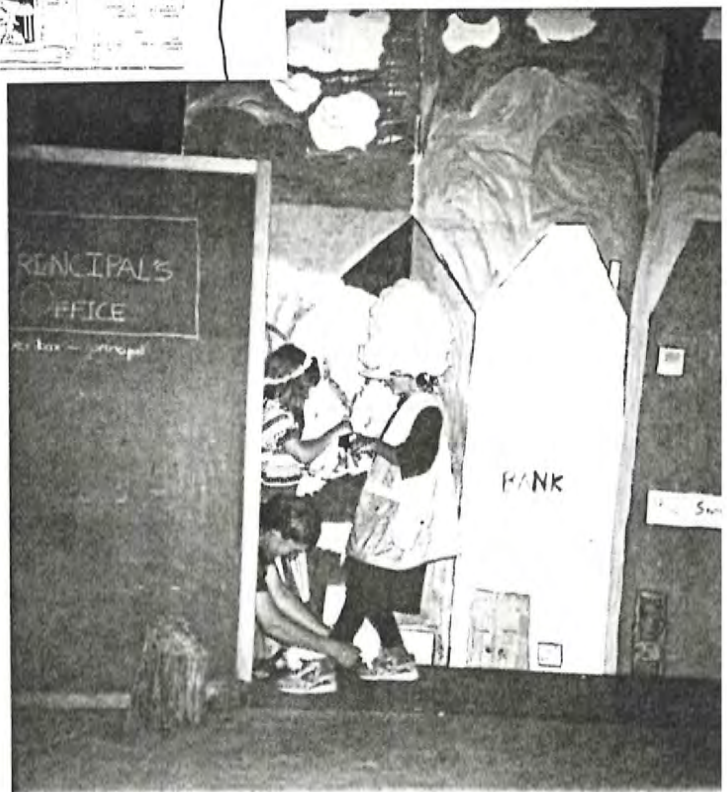




Three  
 About The  
 Winner

Stories  
 Gold Buckskin  
 written by  
 Carl samburo

Performed by  
 The Mountain  
 Lake Kids



THREE STORIES ABOUT THE GOLD BUCKSKIN WHINCHER

written by Carl Sandburg

- 1 - The story of Blixie Gimber + the power of the Gold Buckskin Whincer
- 2 - The story of Jason Scuff and why he had a popcorn hat, popcorn mittens, and popcorn shoes.
- 3 - The story of Rags Habakuk, the + Blue Kats and the Circus man that came with spot cash money.

Special Thanks to Spencer Tomb who donated the popcorn.



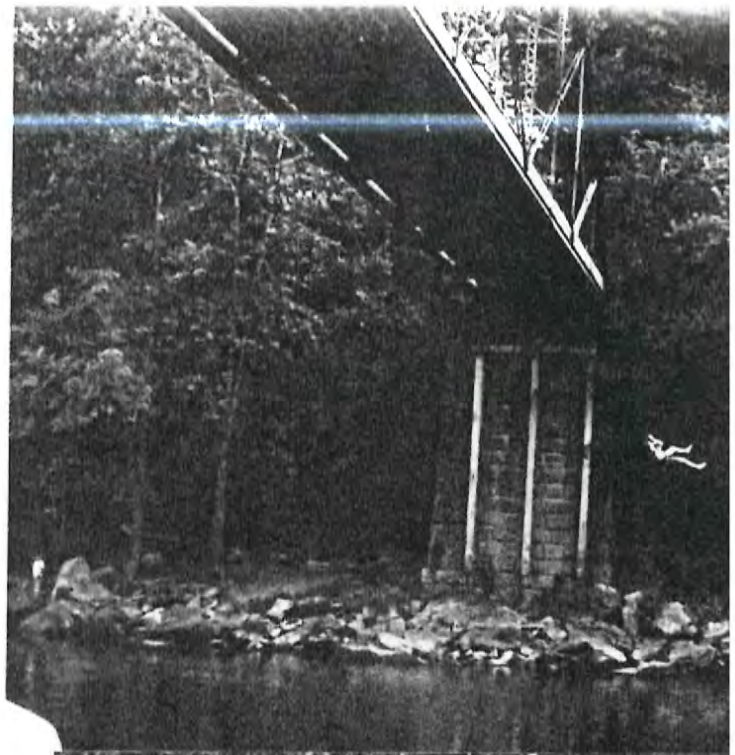
CAST

... in order of appearance

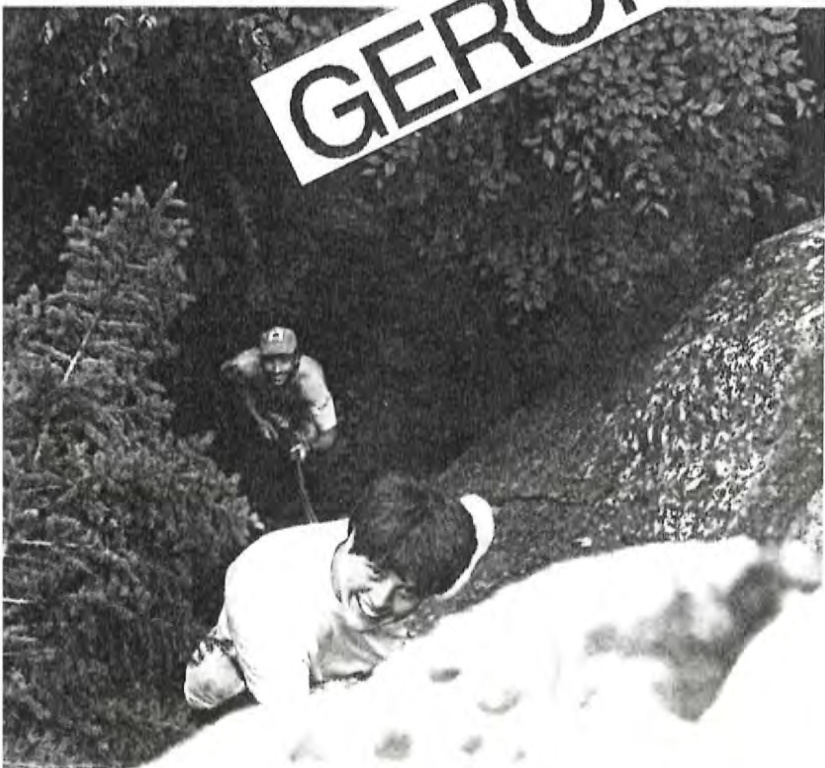
- The Gold Buckskin Whincer - Helen Wilber
- Blixie Gimber - Kendall Boninti
- Fimmie the Flea - Casey Burke
- Silas Baxley - Becky Stephenson
- Fritz Axenbox - Becky Stephenson
- Blixie's Relatives - Lindsay Wilbur + Sarah Burke
- James Sixbirdix - Becky Stephenson
- Jason Scuff - Sarah Burke
- Blixie's Mother - Kendall Boninti
- Popcorn Fairy - Lindsay Wilbur
- Jason's family - Becky Stephenson + Casey Burke
- Two Kids - Tom Redash-Tenster + Amanda Grover
- Rags Habakuk - Casey Burke
- Rags family - Becky Stephenson, Lindsay Wilbur, and Sarah Burke
- Townpeople - Becky Stephenson, Lindsay Wilbur
- The Circus Man - Kendall Boninti
- The Toxicab Driver - Becky Stephenson

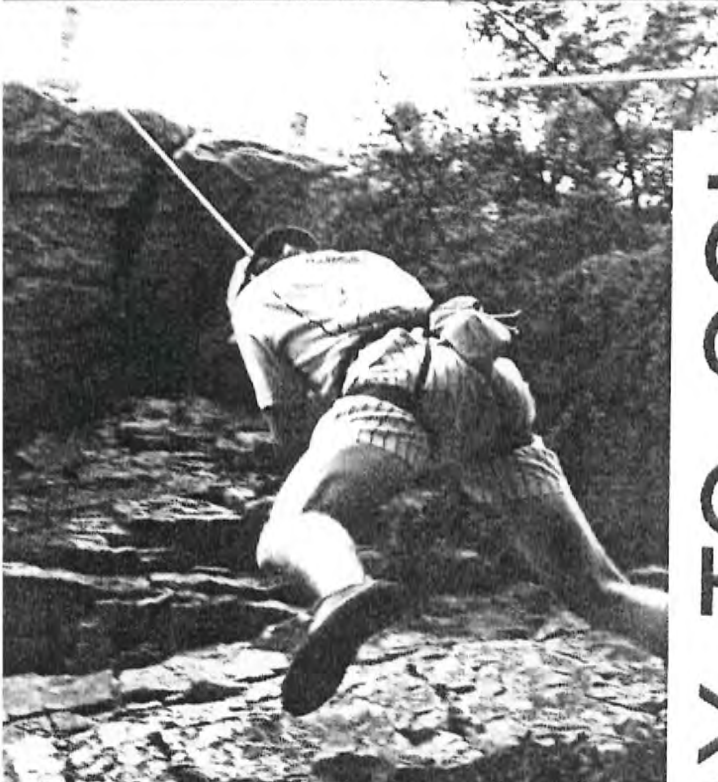
Stagecrew - Everyone  
 Backstage Manager + Sound effects - Becky Wilbur



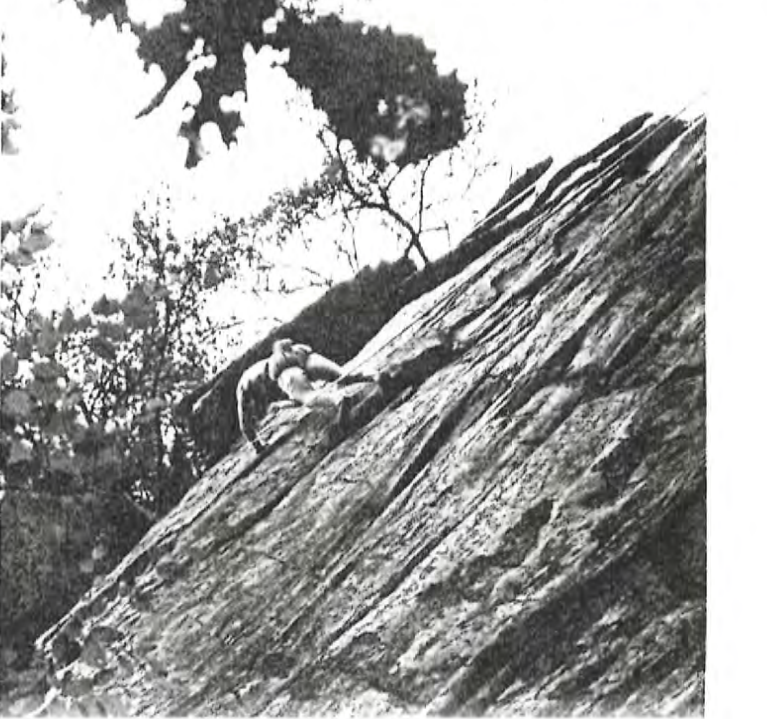
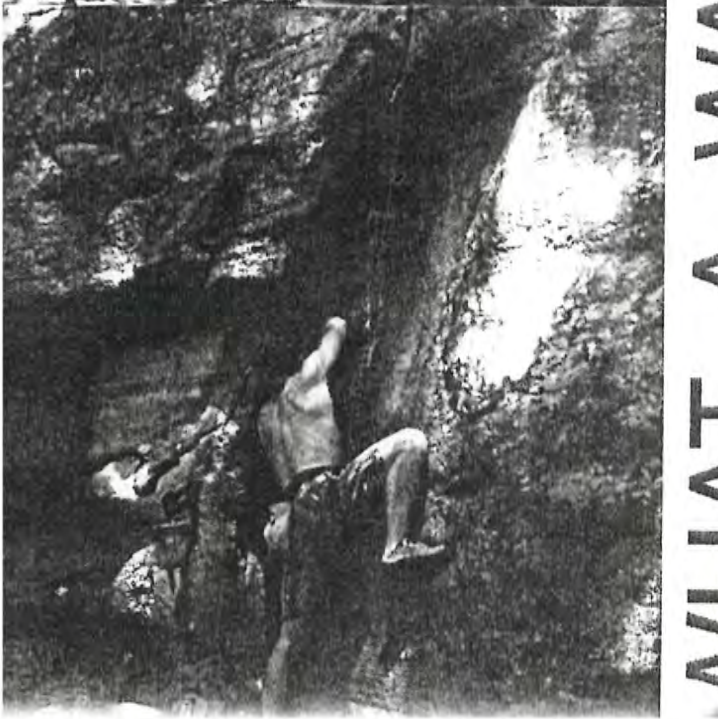
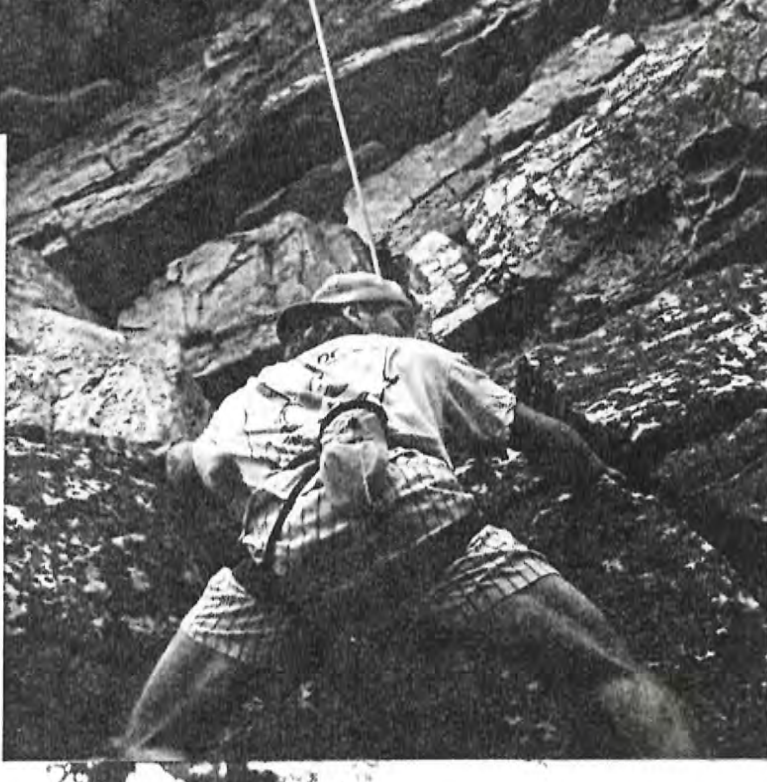


**GERONIMO!!!**





WHAT A WAY TO GO!

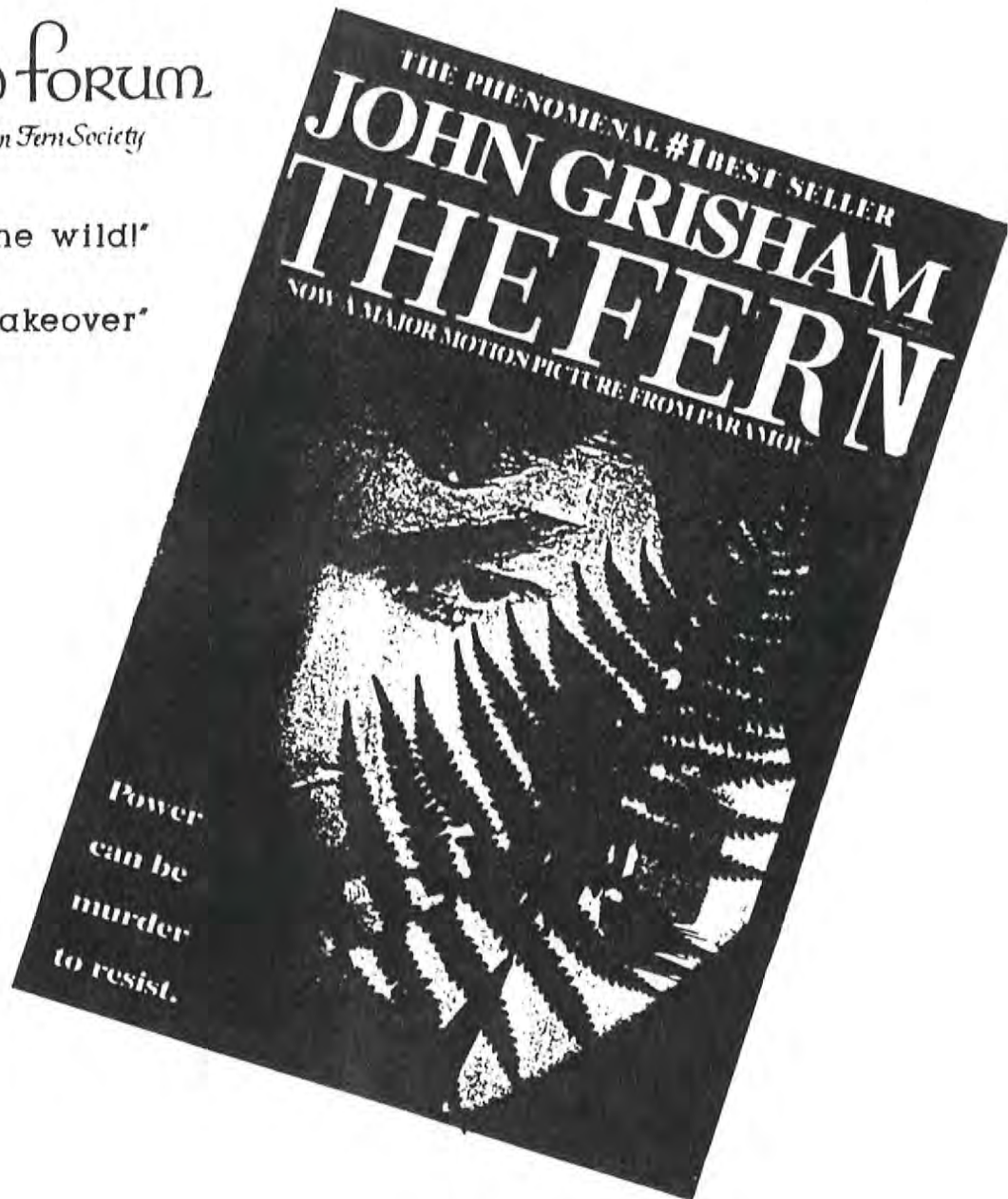


THE BOOK EVERYBODY'S TALKING ABOUT

 **Fiddlehead Forum**  
*Bulletin of The American Fern Society*

"Polyploids gone wild!"

"Pteridophyte takeover"



"Irresistible...seizes the reader in the opening fronds and propels him through 400 pinnae more."--Newsweek

"Keeps the reader hooked...from the creepy, rhizomous first chapters to the vise-gripping end."  
---Dryopteris Digest



ODE TO CHARLIE

"Charlie! No! I can't do this!"  
"Sure you can. It's not hard."  
"Charlie, please, that's at least a 90 foot drop  
straight down! We have no ropes."  
"We don't need them. Here grab my hand.  
I'll show you the way."  
"Charlie, I'm not sure."



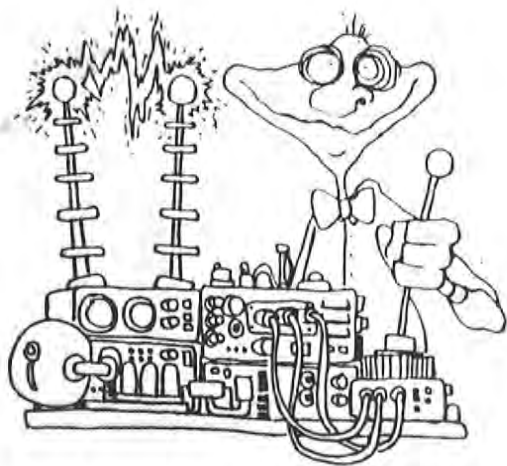
"You can do it. Start right here and take it  
one step at a time."  
And we went down Wind Rock ledge.

But the next day...

"Charlie! this is impossible. The isozyme gels are  
just too thin and fall apart before they even get  
to the pan. We'll never get them stained."  
"That's not true. Remember take it soft, slow, and  
easy--just one step at a time."

And we stained the gels and each day since be it thistles  
to chop, a mountain to climb, a species to save;  
it's soft, slow and easy--just one step at a time.

Thank you, Charlie!



**YOU ARE REQUIRED  
TO LOCK THIS ROOM  
WHEN IT IS  
UNOCCUPIED**



Failure to lock this room when it is unoccupied is a violation of the Nuclear Regulatory Commission regulation 10 CFR 20.207. Licensed radioactive material must be secured from unauthorized removal.

**CAUTION**



**RADIOACTIVE MATERIALS**

NO EATING, DRINKING OR SMOKING IN THIS AREA  
IN CASE OF EMERGENCY NOTIFY \_\_\_\_\_  
TELEPHONE NO. \_\_\_\_\_

AND  
ENVIRONMENTAL HEALTH & SAFETY OFFICE, TELEPHONE: 924-7334

**NO EATING  
DRINKING OR SMOKING  
IN THIS AREA**

**THE DOOR**

My hand was on the knob, but I couldn't quite seem to make the initial turning procedure to open it. My eyes caught sight of the first large sign: Caution Radioactive Materials. My mind knew that was essential. It was an integral part of the process.

Then as my hand turned a fraction further, my peripheral view caught another word: carcinogens. Well, that too must be part of the processing. My hand was ready again for the opening procedure. This time the sensation was abrupt and the stimulus was "neurotoxins." My grip on the knob slipped. My hesitation real. Was this also a part of the process? It must be more than I imagined. I stood back and in that moment caught the last and smallest sign. it read--"this door is to be kept locked when not in use." Immediately, I knew a mind is that way too. I grabbed the knob and went in.

# The Case of the Albino Twin Fawns OR Homozygotes vs. Homozygoats!



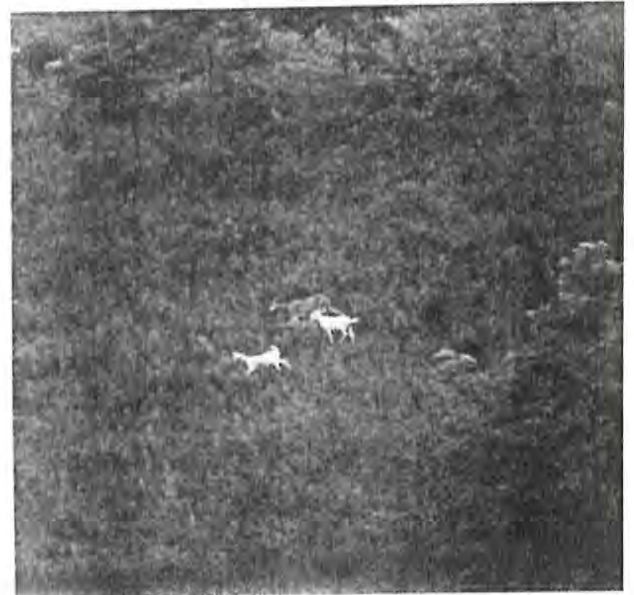
Billy Goat lived on a farm.



This is a goat!



*Three Billy Goats Gruff?*



*"Henry, they're goats!"*

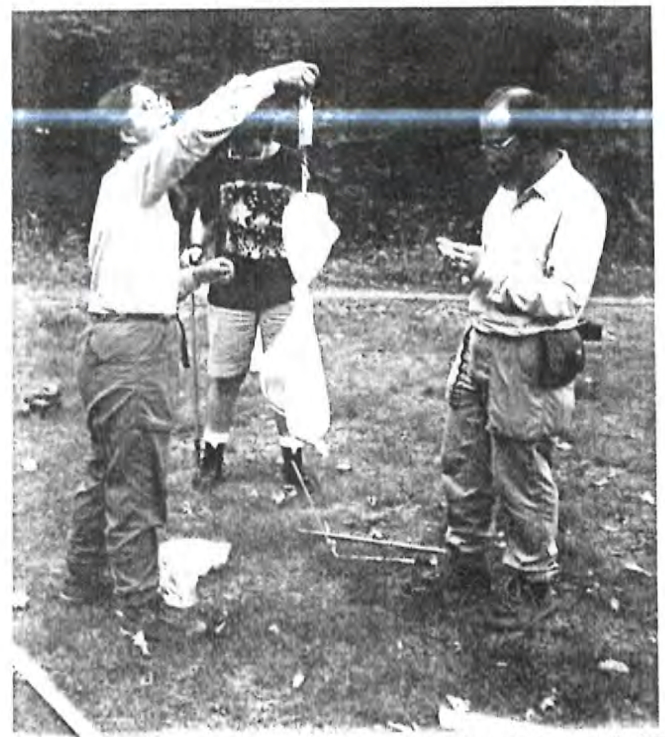
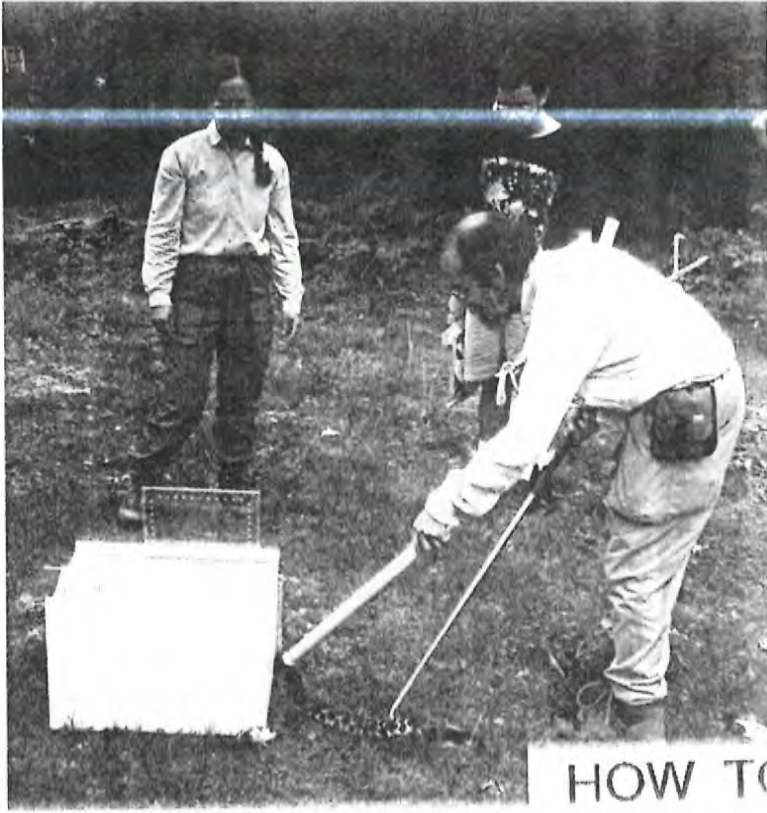
*--Miles Silmar*

"And they come out every evening about 7:30"

HMW

On the job!





# HOW TO HANDLE A RATTLESNAKE

Let someone else do it!

Very carefully!



Put it in a what?!



Measure it

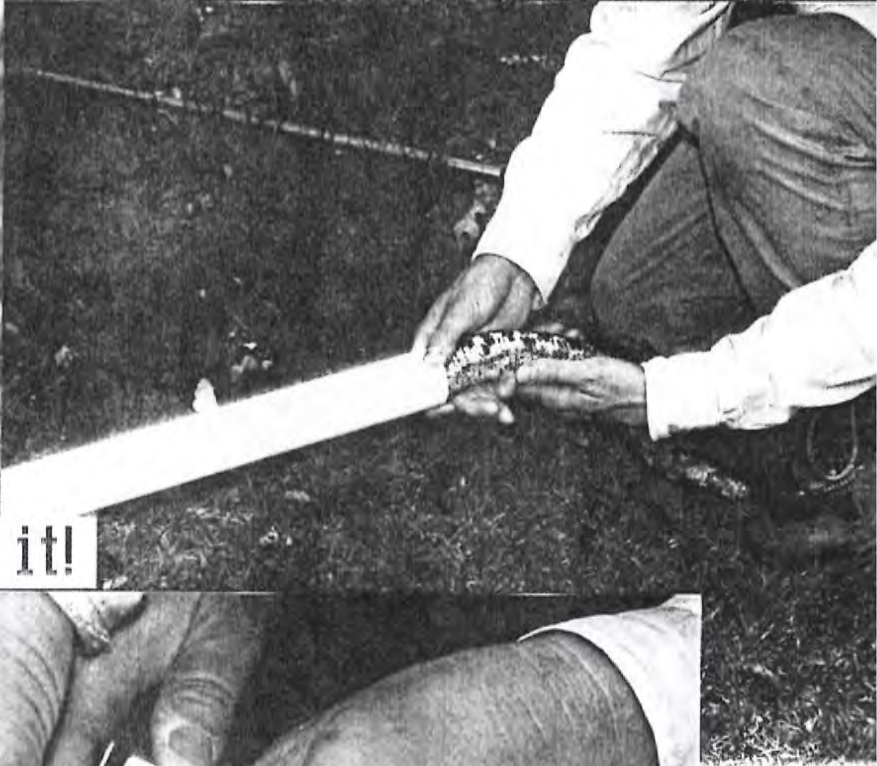




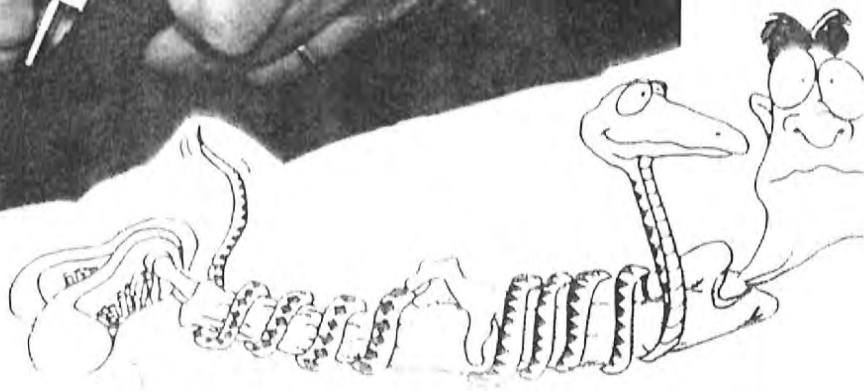
Did it go in?



You better believe it!

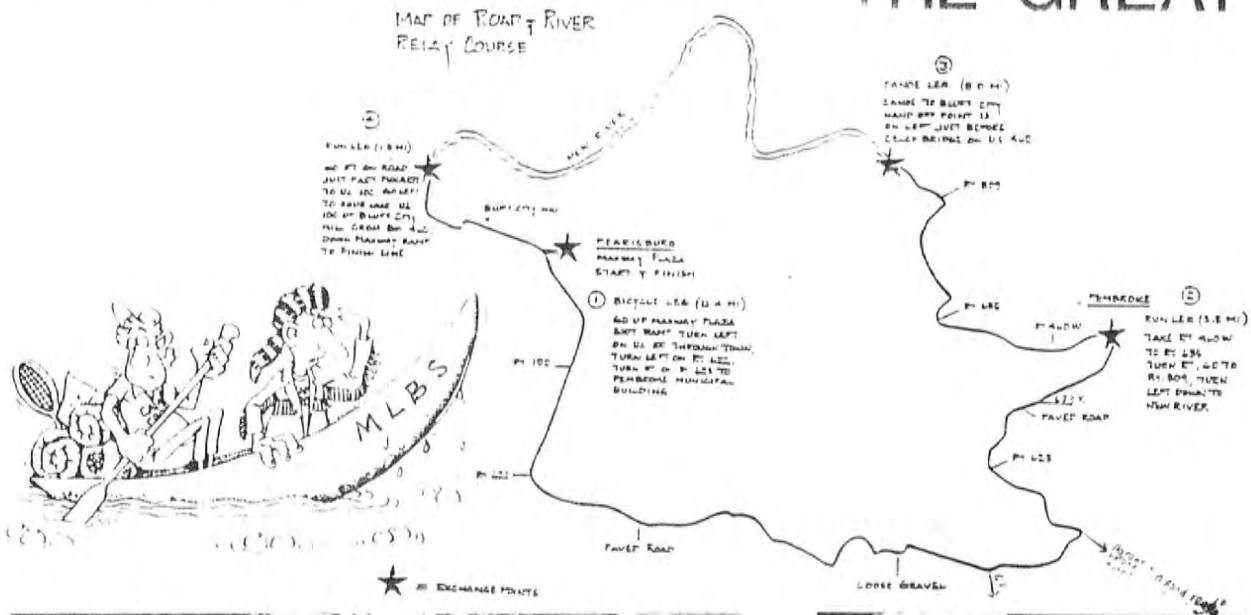


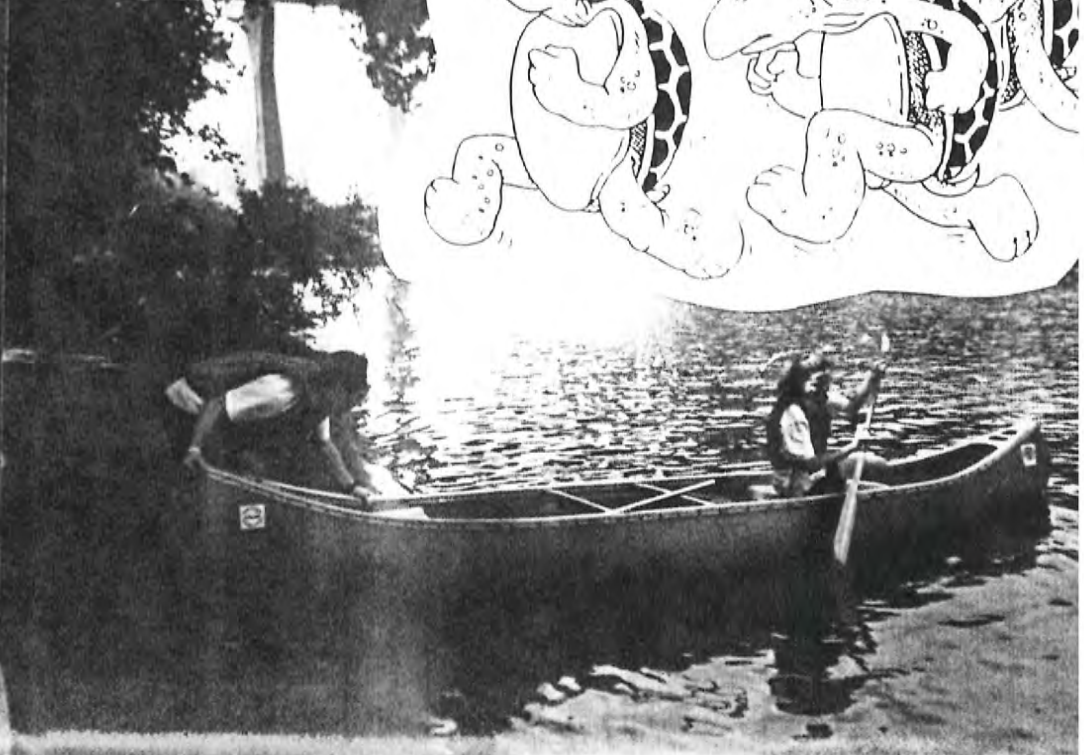
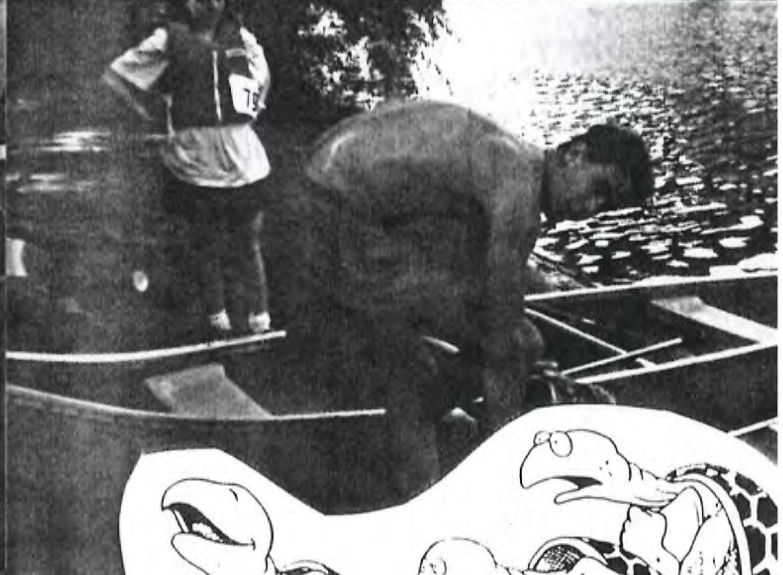
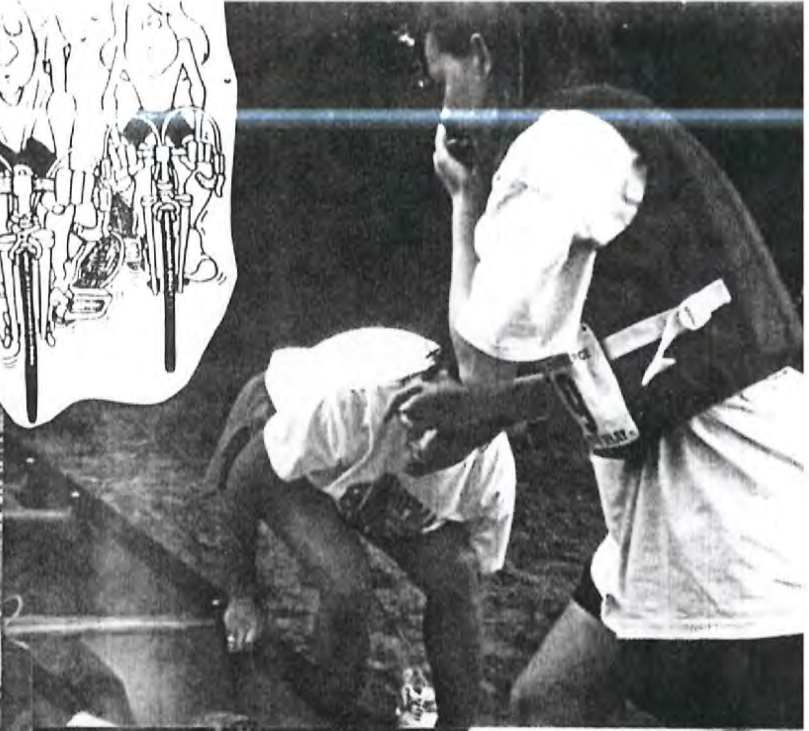
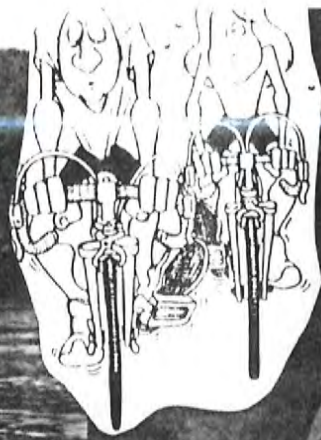
I hate when he does that



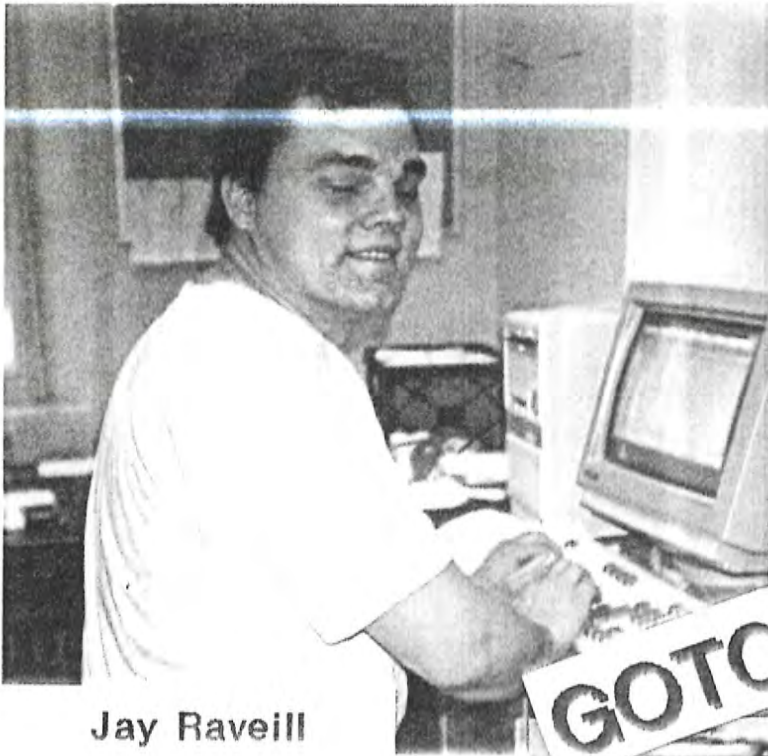


# THE GREAT RACE









Jay Raveill



Randy Davis

**GOTCHA!!**



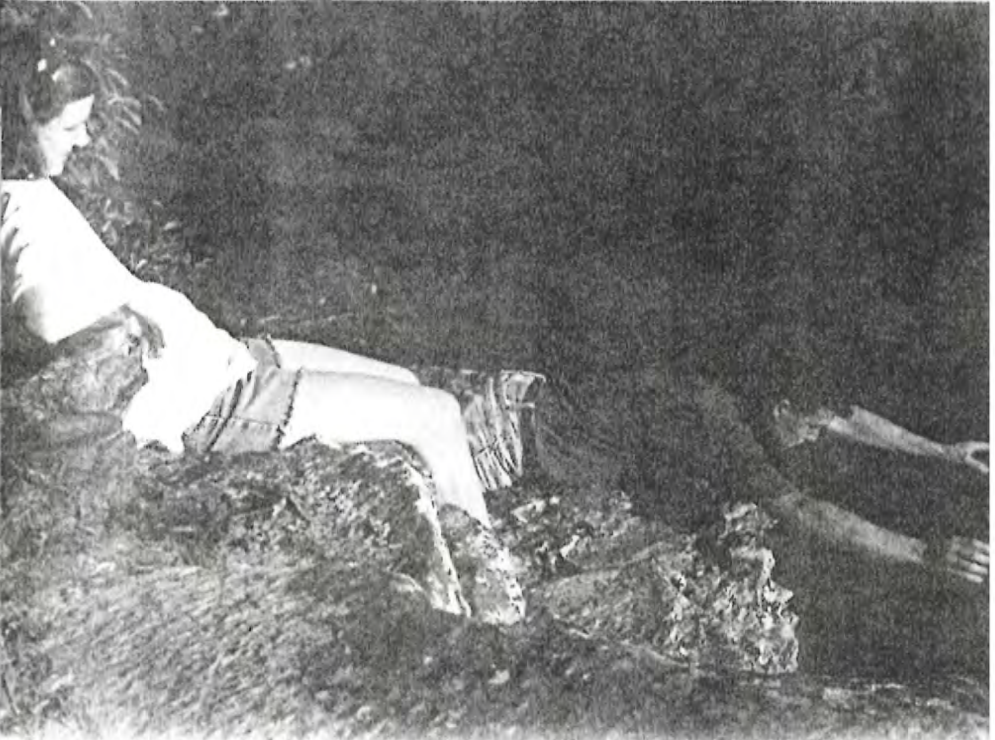
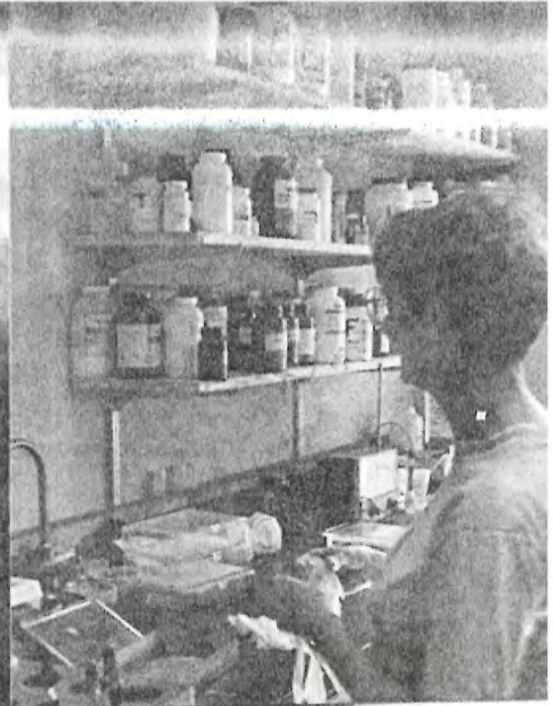
Stephanie Welter



Henry Wilbur



Ed Lowry

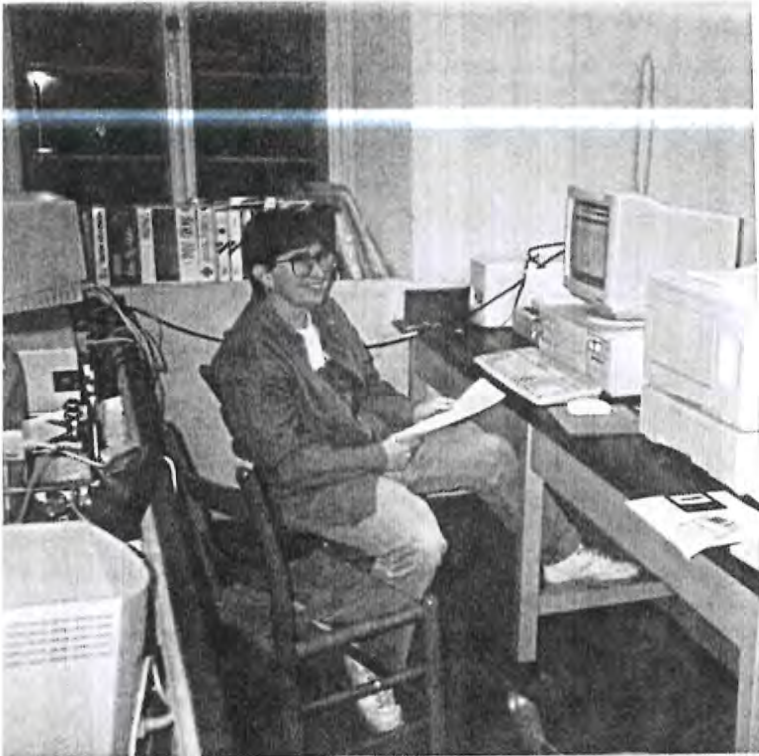


RESEARCH EXPERIENCES FOR UNDERGRADUATES AT  
MOUNTAIN LAKE BIOLOGICAL STATION  
SUMMER 1993

This summer, nineteen undergraduate students from sixteen colleges and universities across the country were part of Mountain Lake Biological Station's first Research Experience for Undergraduates Program. Funding from the National Science Foundation, the Carolina-Ohio Science Education Network, and the Howard Hughes Medical Institute provided each student with ten weeks of room and board and a stipend.

During the ten week stay at Mountain Lake each undergraduate researcher:

- Conducted his or her own research project under the direction of a mentor chosen from the Station's research staff.
- Participated in a seminar series designed to introduce students to the basics of experimental design, statistics, and scientific writing.
- Took part in discussions with researchers and graduate students regarding ethics and selection and application to graduate programs.
- Presented the results of his or her research project to the entire Station in a symposium held at the end of the summer.



*Pat Peroni, REU Co-ordinator*



*David Horne*

*Steve Bushong*



*Stuart McDaniel*



*Jena Hickey*



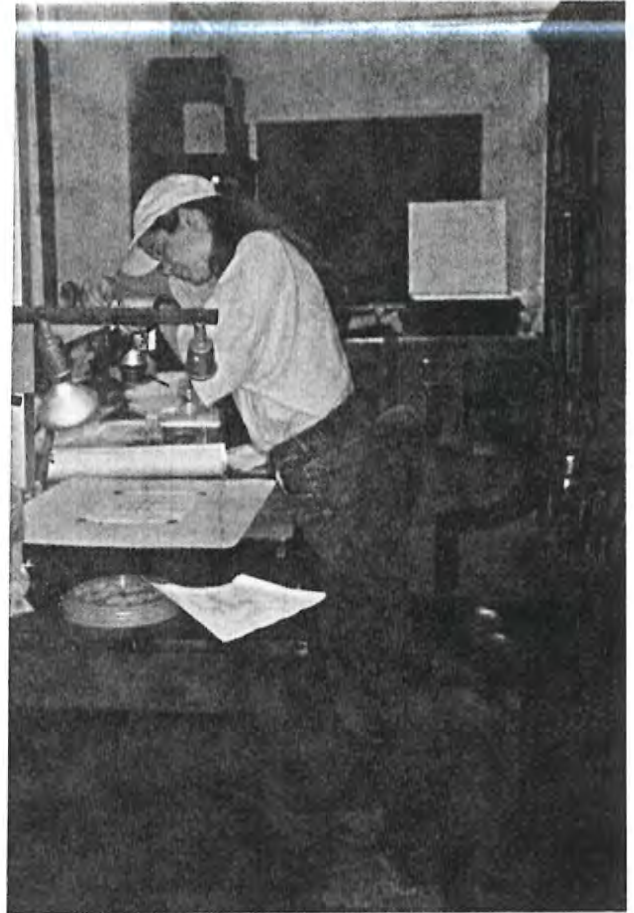
*Stuart, Jena & Eve Kaplan*



*Anurag Agrawal*

UNDERGRADUATE RESEARCH PROJECTS AT MOUNTAIN LAKE  
Summer 1993

- Cost of Tail Loss in Brooding Female Red Backed Salamanders
- Effects of Moisture Gradients on Salamander Colonization
- Size Specific Interactions between Salamanders and Crayfish
- Risk and Territory Establishment in Red Backed Salamanders
- Spatial Patterning of Understory Shrubs
- Correlates with Establishment and Survival of Striped Maple Seedlings
- Spatial Patterns of Age and Size Structure in Striped Maple
- Effects of Fungicide Treatment on Striped Maple Seedlings
- Response of Striped Maple to Canopy Gaps
- Effects of Tail Coloration on Female Mate Choice in Dark Eyed Juncos
- Effects of Testosterone on Nest Defense Behavior of Male Dark Eyed Juncos
- Ecological Genetics of an Egg Color Polymorphism in the False Colorado Potato Beetle
- The Effectiveness of Fluorescent Dye as a Pollen Analog for the Hummingbird Pollinated Fire Pink
- Factors Affecting the Infection of White Campion by the *Ustilago* fungus.
- Successional Status of Bald Knob
- Comparison of Vegetation and Environmental Variables in Nose and Hollow Areas on Big Mountain
- Vegetation and Tree-ring Analysis of a Former Chestnut Dominated Forest
- Effects of Elevation and Exposure on the Composition of Oak Communities on Salt Pond Mountain
- Effects of Light Gaps and Clear Cuts on Growth in American Chestnut Shrubs



*Cynthia Hassler*



*Kerry Yurewics*



*Chad Shaw*

## Natural History of Southern Appalachians



Standing L to R: Denise Nickels, Sophie Johnston,  
Dr. Phil Shelton, Rich Crites, Brad Broskie  
In front: Jennifer Soles, Mike Ellwood

## PICTURE DAY 2ND TERM

### Conservation Biology



Back: Chris Betz, David Marsh  
Front: Ellen yager, Christie McHone, Dr. Peter Kareiva,  
Debbie Fortune

# Conservation Biology

For lunch in the shade by a cool stream after a morning counting bees and dodging bulls among the thistles. Meaningful hot pink T-shirts for everyone. Beer & chips to improve our attitudes as we fought over how to design the next project. For the harassment meted out and humorously dodging the sticks and stones thrown at you with a vengeance. It's no wonder you weren't surprised at the extra "geologic weight" we hid under the ice in the cooler! (but didn't have the heart to make you carry back.) For ice cream on the side of the mountain as we painstakingly worked our way back up. And last, but not least, for the dinner in town one evening ~ our reward for trying so hard?

Dr. "PK" Kareiva -  
We thank you for the wonderful class.

Deborah S. Johnson  
Dustin M. Johnson  
Christie McHone  
Ella P. Johnson  
John W. Bartz Jr.

"It hurts to think"  
-PK

Pink Revolution 1993

# Peter Kareiva the FAX KING

*it is better to send than receive!*

**Faxation without representation!**

**TO FAX OR NOT TO FAX**



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## NATURAL HISTORY OF THE SOUTHERN APPALACHIANS

"...a hugely broad subject." Ernie Dickerman, 1988.

How did all this stuff get here?

You start with a universe with mean density of one hydrogen atom per cubic metre... and end up with all these wrinkled rocks and ferns and oak trees and ferns and rhododendron thickets and ferns and orchids and ferns and salamanders and ferns and hermit thrushes and ferns and ferns and ferns.

There was this star that blew up, or out, and got recycled into another system which had this little heavy warm wet planet with slabs of basalt sliding over and under each other making volcanoes that became granite continents that bumped into each other leaving wrinkles and slabs. On these rains fell, rivers decapitated each other, divides migrated as the wrinkles and slabs disintegrated and washed to the seas.

From the seas a green film of life crept across the stumps of wrinkled rock - first ferns and awkward amphibians, then ferns and gymnosperms and big reptiles, then ferns and trees with blooms and nuts, and bees and birds and mammals -- big mammals. Then winds and ice from the north, displacing, rearranging, exterminating. Wandering bipedal hunters, first by land and then by sea, displacing, rearranging, exterminating.

But some curious, exploring, barefoot or booted, wondering, naming, measuring, interpreting, hoping to understand some of the big perplictur. Hoping it all can go on and on, dynamic, enduring .... sandstones and spruces, salamanders and chestnuts, orchids, thrushes, .... and ferns.



## OVERHEARD IN NATURAL HISTORY...

Sophie, are you still cutting the cheese??

Has anyone seen any Dryopteris?

(Standing on top of the tower on Spruce Knob)

"I now see the big picture." About time!

Jennifer, "Don't jump from the window."

"Oh no, cheese and bread! I'm gonna be blocked up for a week!"  
Eat green apples.

"Denise, stick this sock in your mouth."

"Jennifer, taste this rock. What type is it?"

Mike now knows the difference between acorns and pine cones!

She smelled like a beaver--we almost had to leave her!

"I definitely need some pizza & beer! Do they sell these on Mt. Rogers?"

"Brad are you smoking again? Don't exhale!"

"Rich, why did you go to Blacksburg?"

Denise Nickels  
Sophie Johnston  
Mike Ellwood  
Jennifer Soles  
Rich Crites  
Brad Broskie

P.S. OOOOhhh! That smells, can't you smell that smell?

Project SCK

## MLBS Seminar: Behavioral Patterns of Equus caballus

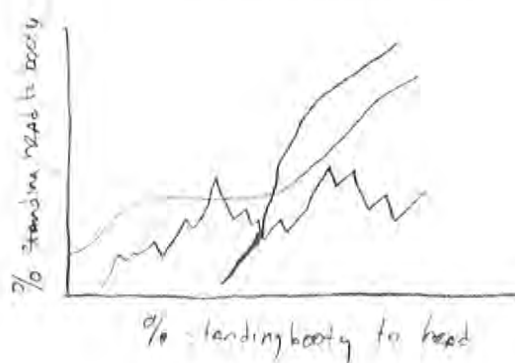
### Question:

Why do Equus caballus stand head to booty?

### Hypotheses:

- 1) Members of the Equus caballus stand in this manner so they can swat flies off each other's faces. (Shelton, 93)
- 2) They do this due to high inbreeding because they live in West Va.
- 3) This is a form of foreplay for Equus caballus

### Fancy Graph:



### Conclusion:

Although none of this data is statistically significant, the specimens of Equus caballus were observed in West Virginia, therefore all hypotheses hold true.

### Suggestions for Further Study

- Genetically create a horse with two booties to see if two horses stand in the appropriate manner.
- Play more volleyball, drink more beer.