



THE NICHE

Department of Biology Student-Faculty Newsletter

Volume 4, Number 2

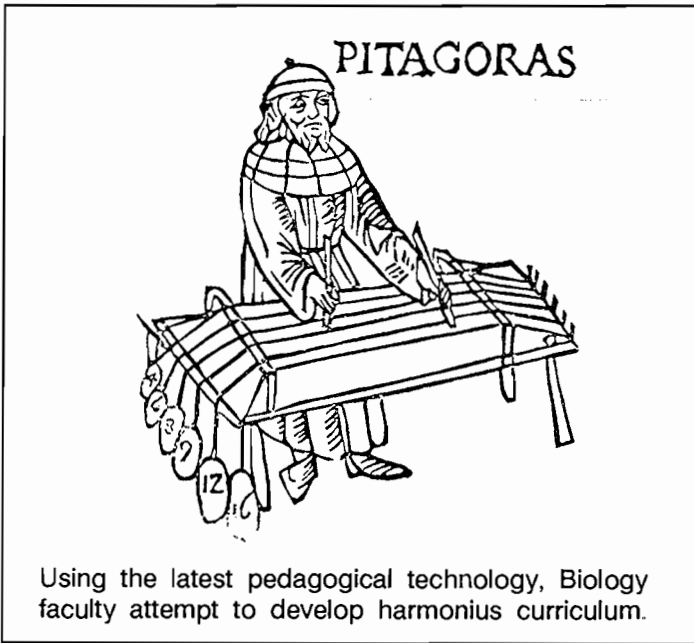
College of William and Mary

January 1992

Department's New Biology Curriculum Will Begin This Fall

A new Biology curriculum was approved by The Faculty of Arts and Sciences Educational Policy Committee on December 13th. The new curriculum, approved by the Department in a series of meetings over the past two semesters, was developed through intense Departmental discussions over the past two years and an ongoing curricular debate for more than five years. The changes were strongly supported by an undergraduate student committee which reported to the Biology faculty last year, and by upperclass students on a questionnaire last Spring.

The new curriculum was designed to meet three objectives: (1) to offer a more substantial and penetrating introduction to Biology for potential majors and others interested in life sciences by expanding the first course to a full year; (2) to add flexibility and increase choice for Biology majors in upper level courses by reducing the number of categories of required courses from five to two; and (3) to create a general education curriculum in Biology for non-science majors. (A summary of the changes appears on page 2.)



Using the latest pedagogical technology, Biology faculty attempt to develop harmonius curriculum.

Search For New Faculty Begins

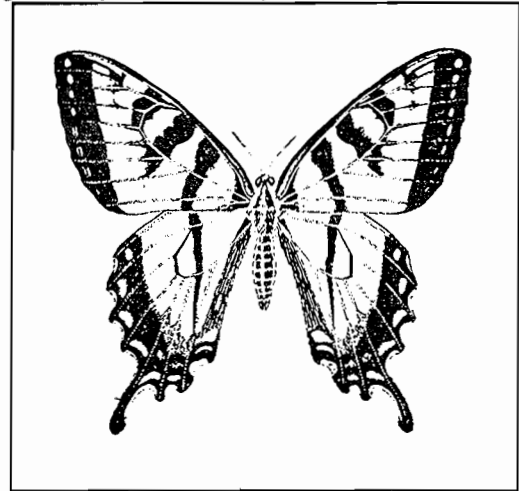
Probably no academic department decision is more important than hiring new tenure-eligible faculty. With the early retirement of four excellent faculty members (**Professors Black, Brooks, Byrd, and Hall**), the Biology Department will face that critical decision this year. The College has authorized one tenure-eligible position and three one-year appointments for next year, and promised to elevate the three one-year positions to tenure-eligible over the next several years. The first two searches, in the areas of vertebrate biology and plant taxonomy, have begun.

Department Chair **Lawrence Wiseman** appointed **Professor Eric Bradley** to head the search for a tenure-track Vertebrate Biologist. Others on the search committee include **Professors Brooks, Byrd, Capelli, and Mangum**, as well as **Professor John Graves** from the School of Marine Science. A portion of the job description that appeared in *Science* magazine says "The successful applicant must be committed to excellence in teaching and research.... Teaching responsibilities will include an undergraduate course in vertebrate biology, emphasizing form, function, evolution and phylogeny, as well as an advanced ... (continued page 2, NEW FACULTY SEARCH)

Sir Cyril A. Clarke and Nobel Prize-Winner Gertrude Elion to Give Department Seminars

On Friday, February 7th, at 4 PM, Sir Cyril A. Clarke, Emeritus Professor of Medicine and Honorary Nuffield Research Fellow at the University of Liverpool, will give the 1992 Howard Hughes Medical Institute Lecture, "From Butterflies to Babies." He will also receive an honorary Doctor of Science degree from the College at Charter Day ceremonies.

Fellow of The Royal Society of London, President of the Royal Entomological Society of London, and Past President of the Royal College of Physicians, Sir Cyril has authored more than 400 papers ranging from the biology of butterflies to medicine. His work led to the virtual elimination of Rh hemolytic disease in newborn infants through an ingenious preventive therapy using Rh antibody.



For this work especially, in 1974 he was knighted by Queen Elizabeth II.

Dr. Gertrude Elion, who shared the Nobel Prize in Physiology or Medicine in 1988, will give a seminar on "The Purine Path to Chemotherapy" on Friday, February 21st. Her work has led to development of novel drugs to combat rejection of organ transplants, leukemia, and various other diseases. This Departmental Seminar will be open to the public.

In Dr. Elion's honor, a senior female science student from each of the two local high schools will be awarded a \$500 scholarship for continued science study in college. While visiting the (continued page 2, NOBEL LAUREATE TO SPEAK)

NEW CURRICULUM SUMMARY (from page 1)

1. The introductory course for concentrators and others interested in Biology (or to fulfill pre-medical requirements) will be expanded to two semesters. The new courses --Principles of Biology: Molecules, Cells, Development; and Principles of Biology: Organisms, Populations, Ecology, Evolution-- will include required laboratories taught as two-week modules by various research faculty. They will emphasize research methods.

2. General Botany and General Zoology, emphasizing whole organisms, will continue to be required for concentrators. The new introductory course will be prerequisite for them.

3. Upper-level courses for concentrators will be divided into two groups: (1) Molecules, Cells, Development, and (2) Organisms, Populations, Ecology, Evolution (see below). Concentrators must take at least six credits from each group. Total credits for concentration will remain at 38. The two-track arrangement will replace the present system of five areas. The Department believes this system will give students more freedom to specialize in areas of interest while maintaining a breadth of education in the subdisciplines of biology.

4. Concentrators must complete laboratory work in at least three courses numbered 300 or above.

5. A one-semester course, Principles of Biology for Non-Concentrators, will be instituted with an optional laboratory.

6. Two new area/sequence courses for non-concentrators will be added: Applied Botany and Insects and Society. Other such courses may be developed in the future.

New introductory courses should begin next year, but students already declared or who will declare this spring will follow the "old" requirements. The College and Department rule of thumb is that any change in requirements should not make the student's program more difficult to complete. Perhaps the only change that will directly affect more than a few students immediately is moving General Zoology from Spring to Fall semester (Botany will remain in the Spring).

Details of the program will appear in the next issue of THE NICHE before registration.

Molecules, Cells, Development

302 Genetics
320 Mycology
324 Plant Development
402 Microbiology
406 Cell Biology
409 Virology
414 Biochemistry
415 Endocrinology
419 Plant Physiology
424 Intro. Radiation Biology
432 Animal Physiology
433 Developmental Biology
435 Colloq. Devel. Biol.
440 Mech. Microbial Activity
442 Molecular Genetics

Organisms, Populations, Ecology, Evolution

309 Anatomy of Land Plants
313 Comparative Anatomy
315 Vertebrate Biology
316 Invertebrate Biology
401 Evolutionary Genetics
410 Animal Behavior
412 Biology of Vascular Plants
413 General Ecology
416 Ornithology
426 Aquatic Ecology
428 Entomology
431 Physiol. Ecology of Plants

!!!!!! Congratulations to the newest members of PHI BETA KAPPA from BIOLOGY: Heather Ferguson, Elsa Kuo, Catherine Malooly, Frank Probst, Steve Rottenborn, Stephanie Silverman, and Diana Zombeck!!!!!!

NEW FACULTY SEARCH (from page 1)

undergraduate and graduate course. The research area is open but it should emphasize organismal biology." Screening of applications will begin on February 1st.

Professor Stewart Ware was appointed to chair the search committee for a Plant Molecular Taxonomist. Others on the committee are Professors Coursen, Hall, Mathes, Phillips, and Scott. This will be a one-year position with the possibility of conversion to tenure-eligible status. A partial job description is: "The research program should employ modern biochemical and molecular approaches to the systematics of vascular plants. Teaching responsibilities will include an undergraduate plant taxonomy course with a strong field emphasis, an advanced undergraduate or graduate course in systematics, and may include...general botany...." Screening of applications will begin on February 1st.

Professor Wiseman explained that "being a faculty member at William and Mary, especially perhaps in Biology, is a more difficult and demanding job than it is at most other colleges and universities. Unlike some larger, almost exclusively research institutions, we expect our faculty to teach undergraduates, to teach them well, and to teach them often. And unlike some smaller, almost exclusively teaching institutions, we expect our faculty to do original research, to publish their work, and to seek outside support. Our faculty must be committed to both research and teaching, and it isn't easy to do both well. We ask an awful lot from our faculty."

The Department hopes to invite three candidates for each position to campus for interviews in late February-March if possible. Each candidate will meet with faculty and both undergraduate and graduate students, and will also deliver a departmental seminar.

NOBEL LAUREATE TO SPEAK (from page 1)

the Department, Dr. Elion will talk with local high school students as well as undergraduate and graduate research students. Elion, who likes working with children, "believes students need to be inspired long before they reach graduate school or college." (SCIENTIFIC AMERICAN, October, 1991) She says of eight- and nine-year olds, "They love to discover. If you can just keep them at it and make them realize what it is like, they will go into science."

Mohamed A. Noor won the \$10 Book Gift Certificate in the "Name the best three books" contest. Books mentioned by students will be listed in the next issue of THE NICHE.

How To Be An Aquarist

by Angie Wonsettler

Two summers ago, I was accepted as an aquarist intern at The National Aquarium in Baltimore. The internship involved helping the full-time aquarists (those who maintained all of the fish tanks) during the weekdays. I worked at the aquarium for a total of four full five-day weeks.

At first I did odd jobs, then after a few days, I was assigned to work with an aquarist, Mark, in a large area on the third floor. My section included a wide variety of different organisms including two octopi, sea anemones and urchins, african cichlids, and other aquatic creatures.

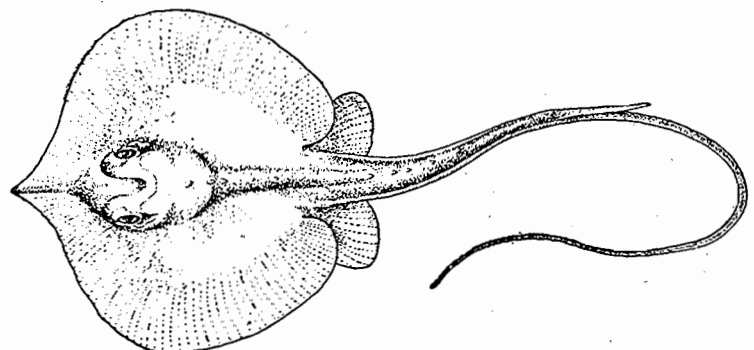
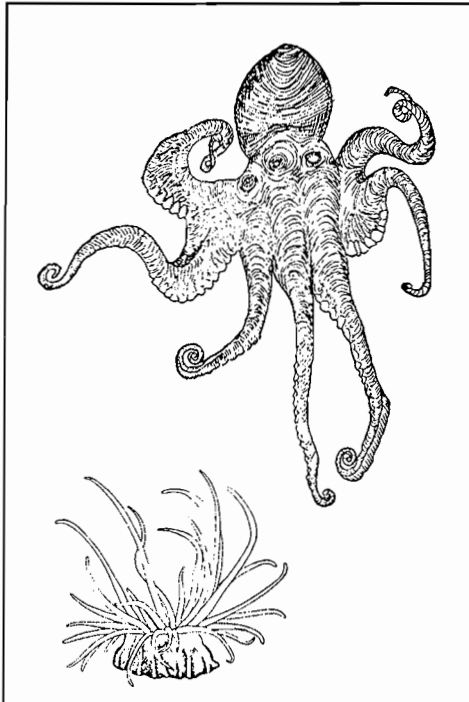
My duties included maintenance of the aquarium systems such as the cold water tank coolers, the filter systems, and the aerators. I also helped feed the sharks. Every day after I had eaten my own lunch, I prepared gourmet meals for my animals. The menu ranged from smelt and blue crabs to clams and live guppies, some of which I had to chop as finely as pressed garlic! My favorite animal was the feature octopus, Kiwi (the other was in a back tank). Mark had already established rapport with this octopus, and he encouraged me to do the same. Because the tank was open, I was able to play the octopus's favorite game: push me-pull you. Kiwi was the highlight of each day.

Life at the aquarium, however, was not all fun and games. The aquarium staff was faced with an infection by an unknown parasite in two of the largest tanks in the aquarium, the Atlantic Coral Reef tank (ACR) and the shark tank. Due to the infection, the majority of the large population in the ACR had died or was fatally diseased. The staff attempted to "cure" the problem by adding copious amounts of activated carbon to the water.

Because the water systems of the two tanks were connected, the addition of carbon weakened the sharks. I was frustrated with the fact that I was unable to help prevent the loss of the ACR population; because we could not flush out the infection I was forced to watch the death toll rise. From an educational standpoint, the fatal infection provided me with the opportunity to observe a shark autopsy. It was quite interesting, but also gory at some points.

This experience definitely influenced my decision to further my studies in marine biology. I was intrigued with what I saw and was drawn to study these creatures in their natural environments. I would heartily encourage anyone who is interested in such a great experience to look for internships in their area of interest. The opportunities are there, it is just a matter of finding them.

For a quick reference to this and other internships, look at the **Internships 1991** book in the Career Library.



Gentlemen of the College

Campus Center Room 203
College of William & Mary
Williamsburg, VA 23185

Mike Fitch (804) 221-5302
Brian Hogg (804) 221-4750

Biology Student Launches Campus Singing Group

Biology majors do more than collect insects, sequence genes, and dissect frogs. A good example is Mike Fitch, Junior Biology major from Greenville, Ohio. In the Spring of 1990, Mike and Doug Stambler, now a Senior History major, founded *THE GENTLEMEN OF THE COLLEGE*, a men's a cappella harmony group which has since become very popular on campus.

The group has 14 members with majors in such departments as Biology, History, Russian Studies, English, Chemistry, Economics, and International Studies. They specialize in both classic and contemporary barbershop music, but also include spirituals and 50's-style doo-wop in their repertoire. Their performances are filled with good humor and gags as well as excellent singing.

THE GENTLEMEN OF THE COLLEGE perform extensively on campus and in the local community for a wide variety of audiences, including singing the national anthem at Tribe football and basketball games, entertaining at fraternity parties, and cheering residents of the Pines Nursing Home. Perhaps their most celebrated performance was a free "Final Exam" concert given to a standing-room-only screaming and stomping crowd in Ewell Recital Hall last Spring.

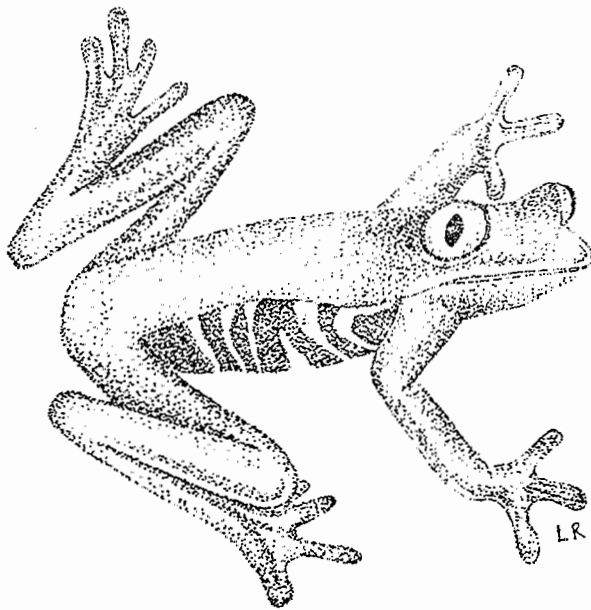
Fitch, a member of SPEBSQSA (Society for the Preservation and Encouragement of Barber Shop Quartet Singing in America.....naturally!), says one of the group's most memorable performances was "Singing for a W&M student just before her boyfriend proposed marriage. This was our first performance of Fall '90." Fortunately she said "Yes!"

TOP TEN LIST

According to some late night Millington studiers,

The Top Ten Biology Pick Up Lines

10. Do you want to go to the Pop Lab?
9. Don't worry I'm not mutagenic.
8. Trust me, I'm a Bio major.
7. Come on up and let me show you how the acrosomal process works.
6. Do you want to see my *E. coli* fluoresce?
5. Let's start some action potential.
4. If I said you had beautiful epidermis, would you hold it against me?
3. What's your D.B.H.?
2. Fertilizer??
1. Isn't it great to be dioecious?



Biology To Begin Non-Thesis M.S. Program

The Biology Department's Master of Science program, described in 1985's graduate studies evaluation as "one of the few programs in which a student...can get good training at the master's level" and as a program for which reviewers "cannot envision any stronger record of placement for graduates," requires completion of a formal research thesis. About four to six students graduate per year from the program.

Recognizing that many post-baccalaureate students are interested in graduate study in Biology but not in formal thesis research, the Department will begin a non-thesis program next year. Students interested in science writing, teaching school, going on to medical or other professional school, and so forth are potential candidates for the new program. Information on acceptance and completion requirements is available from **Professor Mathes**, Chair of the Department Graduate Committee and from **Professor Hoegerman**, Chair of the Department Graduate Recruitment Committee.

Letters to THE NICHE

Please address your questions, comments, and suggestions to **THE NICHE**, Biology Department --or drop them off at our mailbox in Millington Hall.

What's the scoop on Chemistry hours counting toward the Biology major? I've heard two different stories. Can you clear this up? *Yes. The Department has decided that all students who declare a Biology major this academic year can count up to eight hours of Chemistry toward the major. Beginning with students who declare a Biology major in academic year 1992-93, Chemistry hours will not count toward a Biology major. Please see the Department Chairman if you have problems. LW*

I've heard that the Department is considering a new curriculum. What will it be like and when will it begin? How will it affect current majors? *We are beginning a new curriculum (see front page), more details of which will appear in the next issue of the newsletter mailed before registration. The new curriculum will begin this Fall. Already-declared majors will continue under the present curriculum. Students declaring a major this Spring will also follow the current course of study unless problems arise because of the phase-in of the new curriculum. Any problems will be handled on a case-by-case basis with the Department Chairman. Students should be aware that Zoology will be offered in the Fall next year and not in the Spring. Other than that switch in semester, most of the changes won't affect current majors. LW*

Why did I receive notification from the Registrar that I haven't passed the Writing Requirement? I know I did! We don't know why. Names of Biology students passing the CWR are forwarded to the Registrar, but apparently some names were not recorded. This problem should now be corrected. You may want to check with the Registrar's Office to make sure you are "on the list." If you aren't, see the Department Chair. LW

AT THE MOVIES: Bio 101 Students Pick "Dances With Wolves" and "The Princess Bride" as Best Films

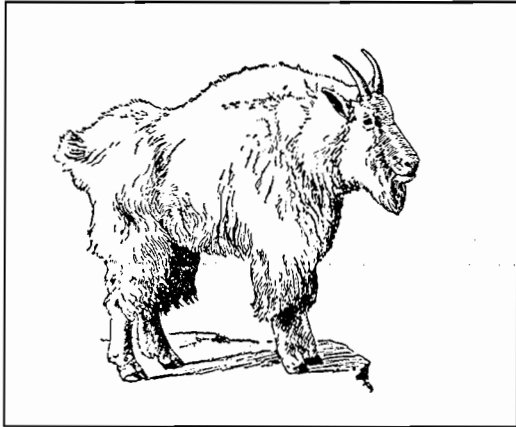
What movies do William and Mary students admire? Professor Wiseman, sometime movie buff and Biology 101 lecturer, added a one-point bonus fill-in-the-blank question (out of 400 total points) to December's 101 final exam: "The best movie you ever saw...." About 575 answers nominated over 100 movies, from the older, almost forgotten "Harold and Maude" (3 votes and one of Wiseman's personal favorites) to just-released entries like "Hook" (also 3 votes). Most of the movies mentioned were recent with only a few "Citizen Kane"-like classics getting support. Some students indicated movie series like the "Star Wars Trilogy" or the work of specific artists, e.g., "Anything Woody Allen does." The top vote-getters were:

1. **Dances With Wolves** (28 votes, about 5% of class)
2. **The Princess Bride** (23)
3. **Star Wars** (20)
4. **Dead Poets Society** (18)
5. **Terminator II** (14)
6. **It's A Wonderful Life** (13)
7. **Gone With The Wind** (12)
8. **A Room With A View** (9)
8. **Robin Hood: Prince Of Thieves** (9)
8. **Silence Of The Lambs** (9)
8. **The Little Mermaid** (9)

A Summer on Alaska's Glaciers

by Matthew Campbell

Sponsored by the University of Idaho, the University of Alaska Southeast, and the Foundation for Glacier & Environmental Research, the Juneau Icefield Research Project was begun in 1946 as a long-term study of the glaciers on the icefield between Juneau, Alaska and Atlin, British Columbia. I became involved in the program after I met its director, Dr. Maynard M. Miller, at the 1991 National Junior Science and Humanities Symposium. The expedition this past summer included 37 high school and undergraduate students and the field staff.

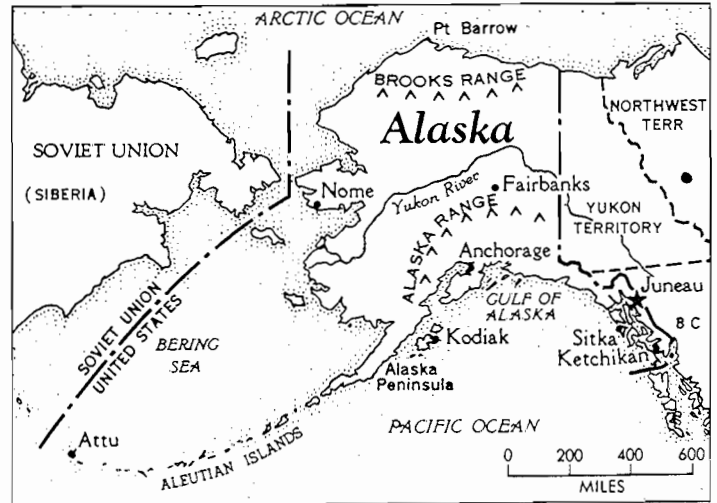


The expedition began in Juneau with lectures on glacier travel and safety, regional meteorology and geology, and an assortment of field trips to Mendenhall Glacier, the A.

J. Gold Mine, Herbert Glacier, and Eagle Beach. We examined moraine deposits and the characteristic features of glacial termini at Mendenhall and Herbert Glaciers. The field trip to the A. J. Gold Mine focused the rocks typical of the Juneau Gold Belt. The mine yielded over 3.5 million ounces of gold and might be reopened in the near future. The field trip to Eagle Beach featured geologic beach deposits, fresh salmon and halibut for a picnic and feeding leftover fish to the bald eagles.

The group then divided into trail parties for the hike up to the glaciers. As research projects progressed, the group dispersed among the five major camps and the twenty-five minor camps. The major camps consisted of multiple wood and metal buildings, while the minor camps consisted of either a single small building or a tent pitched either on rock or directly on the glacier ice. All travel was by hiking or cross-country skiing with some equipment carried between major camps by oversnow vehicles or helicopter.

I had never been on cross-country skis before, but I quickly learned how to put on a heavy backpack while skiing up or down the glacier, depending on the terrain. The helicopter transported mail, some food, and staff members who could not stay for the entire two month expedition. Each day at the major camps students were assigned to cook, to monitor the radio, and to take meteorological records every three hours. The radio served to maintain contact with all of the separate research parties as a safety precaution. Research included studying the geology of the bedrock, geophysics, micrometeorological research, climatology, lichenometry, entomology, surveying the



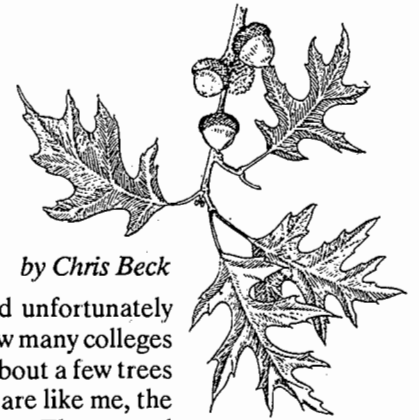
rate of glacier movement, and digging snow pits to measure mass balance.

Being required to carry all personal gear plus a share of group gear in our packs for the summer, we assumed a practical lifestyle bathing only every two weeks and not shaving or doing laundry. We did not want the weight or wasted space of unnecessary items. The only liquid water came from snow melted with sunlight or with a gas stove. Electricity was limited to recharging radio batteries with the gasoline generators at the major camps. The weather was usually rain in the mid thirties or snow in the low thirties. When the weather was discussed, the staff always said that this was the most unusual weather in over ten years; we had ten sunny days in two months. The staff kept reminding us of "the summer of '69 when we had 32 feet of snow between June and September and the summer of '68 when we saw no clouds for seven weeks."

We were constantly surrounded by the beauty of nature. One of my most memorable experiences was the night of the Perseid Meteor Shower. Around 11:30 P.M. during the brilliant red sunset, some friends and I took our sleeping bags out on the Vaughn Lewis Glacier. We spent hours watching meteors going through a faint green aurora. The stars were too bright and numerous to visualize the constellations. The animals I saw included marmots, a pika, black bears, mountain goats, a yellow-billed loon, bald eagles, golden eagles, rufous hummingbirds, rock ptarmigans, willow ptarmigans, white-tailed ptarmigans, lapland longspurs, snow buntings, gray-crowned rosy finches and peregrine falcons. It was truly a remarkable summer.

For information about applying to the Juneau Icefield Research Project, contact me or Dr. Maynard Miller, The Foundation for Glacier & Environmental Research, 514 East First Street, Moscow, Idaho 83843

There are many summer opportunities for student research, educational trips, volunteer work, and the like. Please consult the bulletin board to the far left across from Millington Room 117. New material is added as it comes in, and the board is usually completely filled. But take a look. Also, the Chair's Office can be of some help in identifying such possibilities.



OPINION: We Must Protect The College Woods

by Chris Beck

Every college and university has its assets. One of the greatest, and unfortunately unrealized and underused, of William and Mary is the College Woods. How many colleges can you think of right off that have their own woods? I'm not just talking about a few trees grouped together. I'm talking about actual woods -- a forest. Well, if you are like me, the answer is "zero," except, of course for us right here at William and Mary. The second question to be asked is "Have you ever been to the College Woods (on your own accord, not dragged there by Dr. Ware or Dr. Brooks for lab)?" For a surprising number of you I think the answer to Question Two is "No," (while hanging your head in shame, I hope. You are biology majors). If the number of biology majors who have been to the College Woods is so small, imagine what the proportion of the entire student population must be.

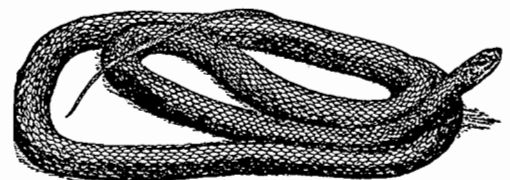
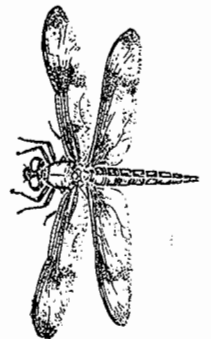
For all of you who have never been to the College Woods, let me tell you what you are missing. For the vertebrate biologists, there are frogs, toads, salamander, skinks, and snakes. For the ornithologists, I've seen Great Blue Heron, a kingfisher, pileated woodpeckers, and red-bellied woodpeckers, along with your everyday songbirds. Last year, a bald eagle was also spotted soaring over Lake Matoaka. For the ecologists, there are endless examples of various stages of secondary succession. Even if you're a lab biologist, the College Woods provides a great escape from the depths of Millington. It's a place to go to relax, think, and rejuvenate in the beauty of the nature that surrounds you.

What is my point? Over the past couple years, the administration has set a course toward the expansion of the physical plant of the College, if not an increase in student population as well. Further, in the past, the administration has not always considered the consequences of this expansion. If you doubt this, ride by the law school and look at what once was the Population and Endocrinology Laboratory. If the College continues to expand, the College Woods could soon become the Tercentenary Complex with parking, perhaps right on the lake edge. Even if its not a new building that graces the College Woods, it could always be another reconstruction. (Yes, believe it or not, the new fine arts center is a reconstruction. Next time you're out there walk underneath the building and if you're lucky you can pick out the small section of wall that was the old foundation.)

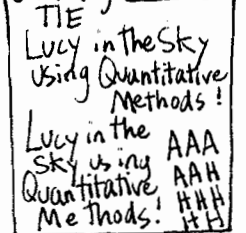
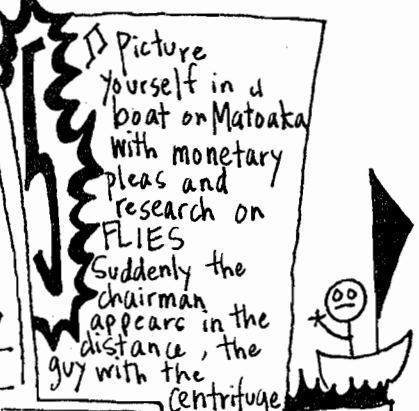
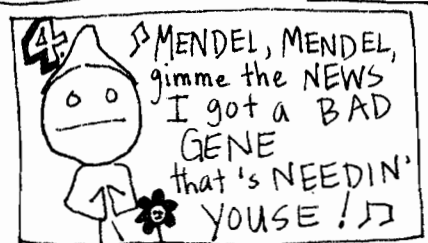
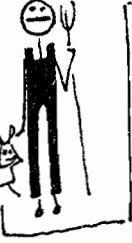
I am willing to admit that there is a housing problem on campus. In my opinion, there are two options, and building in the College Woods is not one of them. Option #1: We as students learn to deal with it, like we have since the time Jefferson went here. Option #2: Reduce the enrollment at the College so that there is no longer a housing problem.

Now, all hope for the College Woods is not lost. The Landscape, Energy, and Environment Committee is working on a plan to protect certain areas of the College Woods from development. Also, the Master Plan Committee is working with various of the campus environmental groups, including the Clayton-Grimes Biology Club, to identify biologically significant areas that should be preserved.

Finally, your task as a biology major is to visit the College Woods. If you enjoy the experience half as much as I do every time I go out there, let the administration know that you want the College Woods to be preserved as it now stands. Don't wait too long though, or it may become another study in post-timbering secondary succession like the site of the new university center.



BIOSPHERE



A Caribbean Summer

by Chong Shin

Students from William and Mary will be offered the chance to take up to two courses in Puerto Rico and Barbados as part of a Caribbean Studies Program. Professor Mathes will offer APPLIED TROPICAL BOTANY for 3 credits. Professor Kerner will offer two sociology courses: SOCIAL PROBLEMS: A CROSS-CULTURAL ANALYSIS -- THE CARIBBEAN AND THE UNITED STATES and GLOBAL ENVIRONMENTAL ISSUES: THE IMPACT ON THE CARIBBEAN, each for 3 credits. Lectures will be conducted in the mornings from Monday through Thursday, allowing the afternoons and weekends for field trips.

The first two weeks will be spent at the University of Puerto Rico, where students will get to visit rainforests, cultural museums, coffee bean fields, and the beaches in the afternoons. The last three weeks will be at the University of the West Indies in Barbados with field trips to andromeda gardens, rum distilleries, and sugar cane processing plants to supplement the lectures.

The program costs about \$3,000, which includes 5 weeks lodging and 4 days/week of meals. However, airfare (an additional \$1,000) is not included in the package. A \$300 deposit is required. There are no pre-requisites for the courses offered. The program is scheduled to last from July 4th to August 10th. (for more details, contact Professor Mathes in Biology or Professor Kerner in Sociology).

Three-Year Old Freshman Honors Colloquium To Become Permanent Course

by Sheri Tinnell

The Honors Colloquium 404-01, which next year will become Freshman Honors Colloquium 107 (2 credits), is designed for incoming freshmen interested in majoring in Biology who have achieved scores of 5 on the Advanced Placement Biology Test or have been selected as Monroe Scholars. Completing its third year last semester as Topics 404, it will be renamed next year and become a permanent part of the introductory curriculum.

The colloquium was developed to introduce advanced entering students to the Biology faculty research areas. Each week different faculty speak about their own research and area of Biology. Students may choose to work with faculty members on research projects which sometimes continue even after the course is complete. The faculty hope that some of these student-faculty contacts will continue in Honors projects and similar research activity.

Most of the students invited to participate in the program accept the invitation, and are glad that they did. About twenty students have enrolled each of the first three years. Katherine Barnoski, who is presently working in Dr. Vermeulen's lab, commented that, "this program has opened doors to science that I had not previously imagined...i.e., that everything in science has not been discovered and that my research can have an impact." Kevin McKeown said, "this program should be implemented in other departments because it contains exposure to such a wide variety of ideas."

The response to the program has been very positive from both students and faculty. Its success, in part, led to the development of the new two-semester introductory course in Biology to begin next year which will include required laboratories taught by research faculty. The new curriculum will give all potential Biology majors the opportunity to participate with a number of faculty in thinking about research and the techniques and methods of biological investigation.

THE NICHE

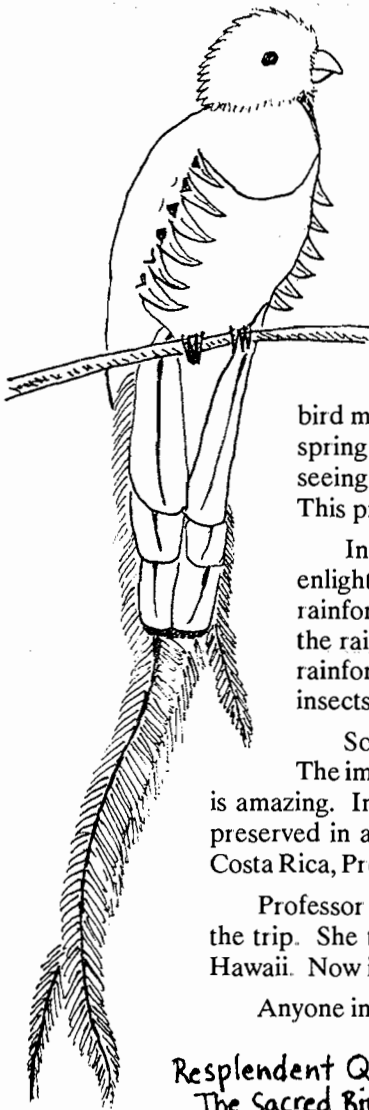
Department of Biology Student-Faculty Newsletter

BIOLOGY



WILLIAM & MARY

Adviser: Lawrence Wiseman
 Co-Editors: Sally Hunsucker and M. Lisa Jones
 Staff: Amanda Allen, Chris Beck, Laura Romano, Chong Shin, Erika C. Shugart, Cathy Unrine, Natalie Weber, Angie Wonsettler



Resplendent Quetzal
The Sacred Bird of the Incas

Professor Beck Finds Costa Rica "For the Birds"

Looking at the globe, the country of Costa Rica may seem small but it has a big boast: the greatest biological diversity of any country or land area of its size. Climates range from rainforest to arid areas. Animal and plant life are everywhere in the rainforest; ferns and mosses are abundant and diverse. Birds and insects are numerous as well.

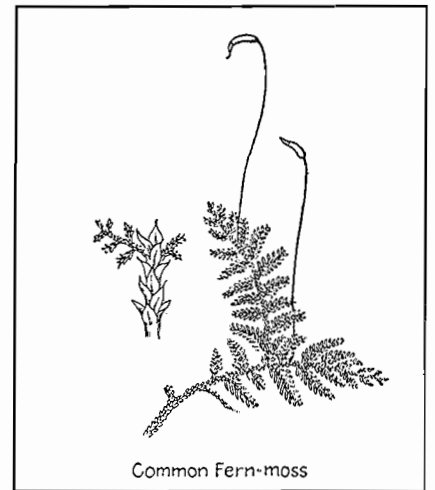
Professor Ruth Beck ventured out into the forests of Costa Rica on a "fact-finding mission": to view the many and varied birds of the area. With the help of some experts on Costa Rica and "For the Birds, Inc.", Professor Beck and 13 other people made the trip to Costa Rica. They travelled all around the country and stopped in five different places. Each was off the beaten path. The primary objective of the trip was to learn about the birds of the area; each participant became expert on a certain family of bird. Professor Beck's specialty was Woodpeckers, Barbits, and Puffbirds. In addition to learning about these birds, the trip made her think globally about bird migration. Many of the same birds that are seen passing through Virginia for a short time during the spring were spotted in Costa Rica in abundance. One such bird was the Neotropical Warbler. As well as seeing birds from Virginia, Professor Beck spotted the sacred bird of the Incas, the Resplendent Quetzal. This protected, historical bird wears colors of vibrant green, red, and white.

In addition to learning about the Costa Rican birds, Professor Beck found the visit to the rainforest enlightening and spectacular as well. Part of her stay was in open-air accommodations in the middle of the rainforest, far away from cities and civilization. The experience was very different from just reading about the rainforest or watching it on television. Professor Beck rode on a cable car through the canopy of the rainforest. She fell asleep to the peaceful music of the birds and insects.

Some of the rainforests in Costa Rica are over 5000 years old. The importance of forest preservation to the people of the country is amazing. In Monte Verde Cloud forest, over 26,000 acres have been preserved in a reserve founded by quakers in the 1950's. After visiting Costa Rica, Professor Beck has renewed hope for the fate of the rainforest.

Professor Beck says that she will never be the same again because of the trip. She told me, "I used to measure my life in terms of my trip to Hawaii. Now it's before and after Costa Rica."

Anyone interested in experiencing Costa Rica during spring break of 1993 should contact Professor Beck. She is interested in organizing a trip very similar to the one she took for William and Mary students.



Common Fern-moss

"Pop Lab" Attacked by Parking Lot

Because of its off-campus location, the Biology Department's Laboratory of Endocrinology and Population Biology (or "Pop Lab") is relatively unknown to most William and Mary biology students. In 1963, under the auspices of Dr. Richard Terman and the late Dr. Bruce Welch, the old barn, which was once part of the dairy for Eastern State Hospital was transformed, with funding from Dr. Terman's N.I.H. grants, into an excellent research facility. Over the years, Dr. Terman, Dr. Eric Bradley and numerous graduate and undergraduate students, have undertaken research of the endocrinology, reproductive physiology and population ecology of the field mouse, *Peromyscus*. Over 4000 mice are raised each year from two or three breeding colonies, and Dr. Terman is also continuing a 9 year on-going study of a natural population of the white-footed mouse, *Peromyscus leucopus*, on over 25 acres of college woods surrounding the lab.

Once surrounded by trees, the area is nearly bare now that construction of the graduate student housing complex began last spring. However, while causing certain personal inconveniences (the lab was without phone service for over 5 months!), construction has caused minimal disturbance to field research, though the integrity of the college woods has been threatened.



Likewise, further development of the area, as outlined in the Master Plan, looms over the lab's future. James City County has even proposed that a courthouse be built on the other adjacent lot. With the ensuing encroachment of more buildings, the lab's future is rather bleak.

This loss will be more than aesthetic. Because of the space limitations of Millington, the population lab, with its 16 animal rooms and space for on-site dissection and histological work, is a dire necessity for any type of small animal study. It's worth as a facility for both laboratory and field research is unmistakable. So, as Dr. Seuss's Lorax "speaks for the trees" the population lab must be spoken for and the department's vital research facility defended.

Biology Student Athletes Face Long Hours In Labs And Practice

by Laura Romano

In addition to the challenges of majoring in Biology, student athletes must also attend daily practices and weekend competitions. Such a schedule is in itself a challenge to maintain. Nonetheless, juniors **Carla Casey** and **Andrea Lengi** and senior **Frank Probst** have dealt with the situation successfully.

A forward/center on the women's basketball team, Biology major **Carla Casey** points out that it is difficult to schedule classes which don't conflict with basketball commitments. **Carla's** strategy is to schedule laboratories for Tuesday and Thursday mornings and to keep her afternoons open for up to 2 and a half hours of basketball practice.

In addition to managing her time effectively, **Carla** also claims to "work well under pressure." This ability to perform well under pressure should prove advantageous for **Carla** in Medical school.

Carla appreciates the breadth of the "excellent" Biology program here at William and Mary. She values the requirement of a Biology major because it has exposed her to an expanse of professors and knowledge. "I've never been a plant person before," says **Carla**, but she has found her Botany and Plant Development classes "very interesting."

Unlike **Carla**, distance runner **Andrea Lengi** does not plan to attend medical school. Rather, **Andrea** intends to either continue her education in graduate school or pursue a teaching career. A junior, she is "keeping [her] options open."

Biology Club Members Attend Stephen Jay Gould Lecture

by Chris Beck

Recently, five members of the Clayton-Grimes Biology Club and a few faculty members from the department attended a lecture by **Stephen Jay Gould** at the University of Richmond. **Gould**, a Harvard professor, well-known paleontologist, and main proponent of punctuated equilibrium, spoke on the nature of excellence. In his speech, he put forth the idea that Darwin maintained that progress is not necessarily an intrinsic quality of natural selection. Natural selection is merely general adaptation to locally changing conditions. He went on to state that evolutionary trend are just changes in variance. To support his reading of Darwin, he looked to baseball. He explained the fact that no one ever bats .400 anymore by a reduction in the variance toward the mean. This is in a manner of speaking an evolutionary trend, but does not necessarily appear to be progress. However, he did note an increase in the mean batting average, implying that even though pitching has gotten better so that no one bats .400, batting has improved equally. He concluded by stating that in this interpretation of evolutionary theory the evolution of man from ultimately bacteria is just an expansion of this variance.

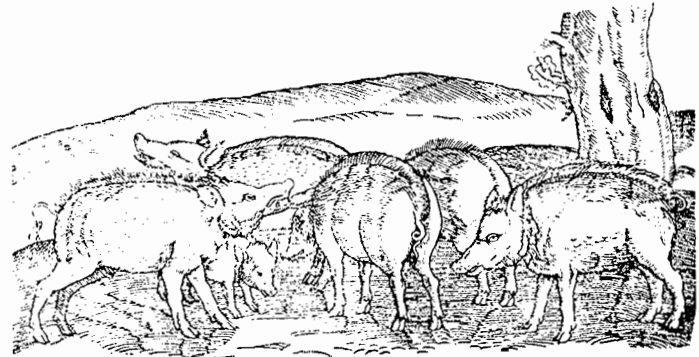
"It gets hectic sometimes," says **Andrea**, reflecting on her time commitments. Not only must she fulfill her biology requirements, she is also a member of two athletic teams, track and cross-country. Running practice is held almost every afternoon of the week. However, "sometimes the coach will let you run on your own if you have an exam the next day," claims **Andrea**. Also, practice can be arranged for an earlier time of the day under special circumstances.

Last spring **Andrea** qualified for the East Coast Athletic Conference championships in the 10,000 meter race, demonstrating the motivation that will allow her to achieve a Biology major as well.

Similarly motivated is **Frank Probst**, a swimmer and recent Phi Beta Kappa initiate. **Frank** was "really surprised" upon being selected to join PBK.

Frank's typical weekday consists of waking up at 5:30 am for an hour of swimming. This is followed by three hours of class. After lunch, **Frank** is usually working on his honors project involving bacterial genetics in the laboratory of **Dr. Phillips**. Also, every afternoon of the week **Frank** manages another hour and a half to two hours of swimming. **Frank** specializes in the long-distance freestyle swim.

Besides his athletic and academic involvement, **Frank** is also involved in Hall Council. Furthermore, he enjoys reading comic books...the X-men are his favorite.



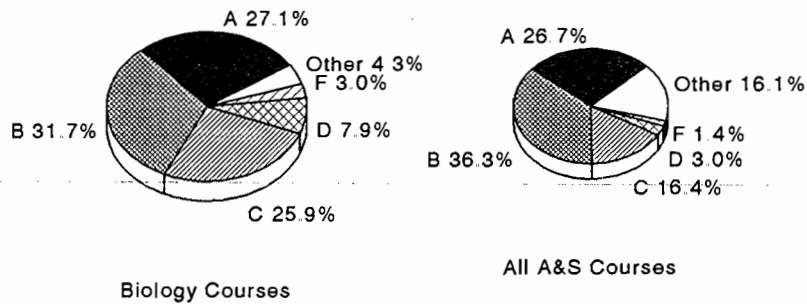
ZOOLOGY Opens Second Section To Meet Increased Demand

Because of significant over-enrollment, **Professor Brooks** opened a second section of **General Zoology 202** to meet MWF at noon (in addition to the traditional 8 AM section). Nearly 400 students hope to take the course. **General Botany 201** also has significant enrollment this semester. These high numbers follow the huge demand for **Principles of Biology 101** last semester (599 students). Current freshmen indicated in a questionnaire last summer before registration that Biology was the number one potential major at the College.

THE NICHE

Department of Biology Student-Faculty Newsletter
College of William and Mary

W&M UNDERGRADUATE GRADES Spring, 1991



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THE NICHE

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Volume 4, Number 3

College of William and Mary

April 1992

Four Retiring Biology Faculty Members To Be Honored At Department Banquet

Retiring Professors **Black, Brooks, Byrd, and Hall** will be honored by the Department of Biology at a formal dinner on May 4th. After introductions by, respectively, Professors **Grant, Scott, Beck, and S. Ware**, the retiring faculty members will deliver "farewell" remarks to their assembled colleagues and guests. The four together will present the last departmental seminar of the academic year entitled "**A Celebration of Life (Sciences): 128 Years of W&M Biology....**" on Friday, April 24th, at 4 PM. Profiles of retirees and comments by two begin on next page.

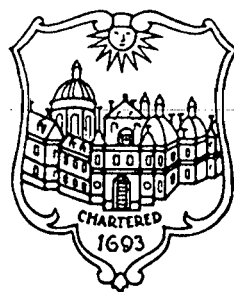
New Vertebrate Biologist to Join Faculty in Fall

Dr. S. Laurie Sanderson accepted the Department's offer of a tenure-track Assistant Professor position to begin this Fall. Currently one of only 20 University of California President's Fellows in the UC system, she is in the Institute of Theoretical Dynamics and Division of Environmental Studies at the University of California at Davis.

A native of Hawaii, she is a Phi Beta Kappa graduate of the University of Hawaii, and received her Ph.D. at Harvard in 1987, where twice she received a Certificate of Distinction in Teaching. In addition to teaching duties at Harvard and Davis, she has taught at Discovery Bay Marine Laboratory, University of the West Indies, and was Ship's Naturalist on a cruise to the Southwest Pacific. In both 1985 and 1988, Dr. Sanderson was a NOAA Aquanaut engaged in saturation diving investigating among other things the optimal foraging behavior in goatfish and the effects of water movement on coral respiration.

In 1986-87, she was an American Fellow of the American Association of University Women, and since 1985 has participated in a number of programs in Boston and Davis for elementary and high school students of science.

Lead author of a 1990 *Scientific American* article, "Suspension-Feeding Vertebrates," and a 1991 *Science* paper, "Fluid Dynamics In Suspension-Feeding Blackfish," Dr. Sanderson will teach Vertebrate Biology this Fall. She says she is looking forward to working with the Department's excellent students in class, field, and laboratory. Her husband **Mark Patterson**, also a biologist, will be joining the School of Marine Science. The Department looks forward to the arrival of the two California biologists sometime this summer.

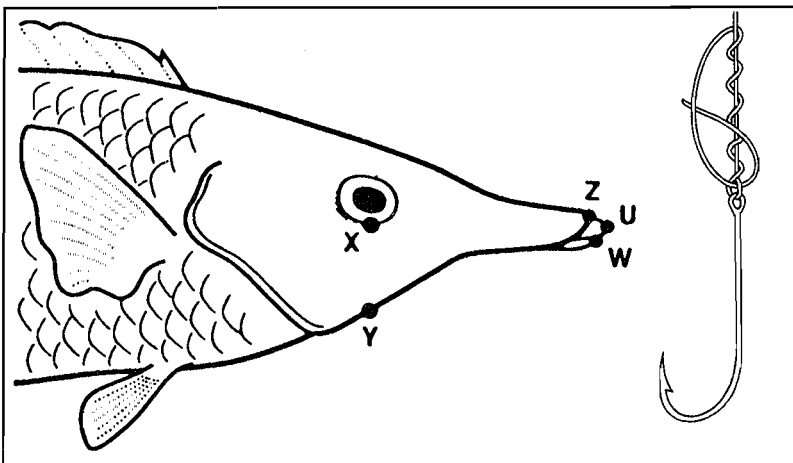


Princeton Professor Visits Department As Part Of Undergraduate Assessment

Dr. Malcolm S. Steinberg, Henry Fairfield Osborn Professor of Biology at Princeton University, visited the Department all day on March 24th as part of the university-mandated undergraduate assessment program. Steinberg met with faculty and students in the Department, as well as with **Dean of the Faculty David Lutzer** and **Dean of Undergraduate Studies Clyde Haulman**.

Steinberg's charge was to assess and evaluate William and Mary's undergraduate program for Biology concentrators. He will write a report of his findings and recommendations which will be incorporated into the assessment document the Department is preparing. **Professor Norman Fashing**, who is leading the assessment effort in Biology, says the report will include data collected from Biology alumni, current seniors, and other sources, and will be presented to the Dean and College's Assessment Committee sometime next month.

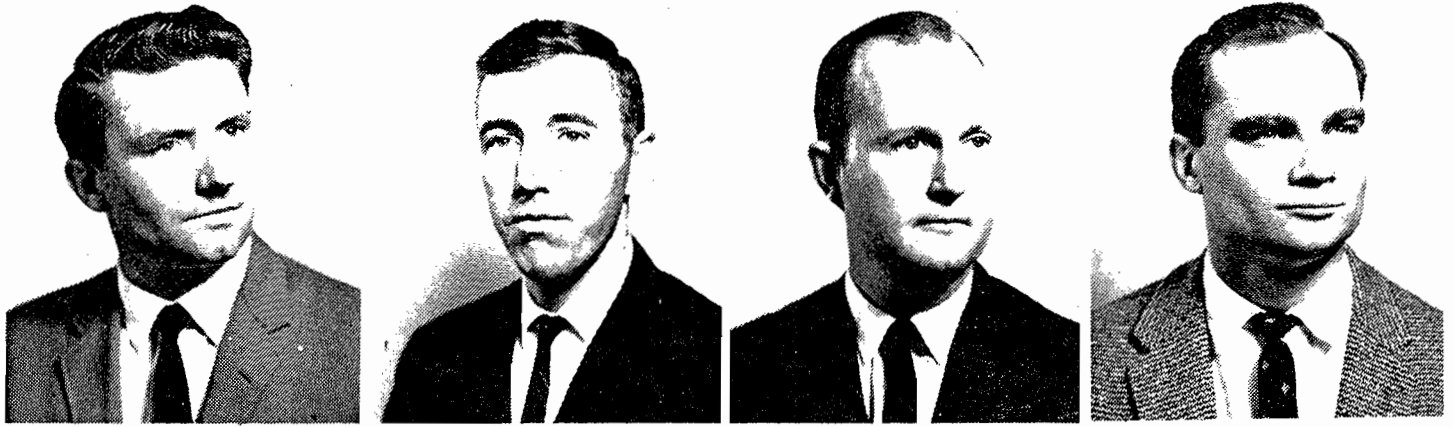
Results of the assessment project will be reported in the first issue of **THE NICHE** next Fall.



BIOLOGY



WILLIAM & MARY



photos from *William and Mary Yearbook*, 1967

Dr. Black From Cal Tech

By Lisa Jones

Dr. Black first arrived at William and Mary from Pasadena, California in 1959 without ever having visited the east coast. As a post-doctoral student at the California Institute of Technology, his doctoral advisor informed him of a job opening for a liaison between the Virginia Institute of Marine Science and the Department of Biology, and it was in this capacity that Dr. Black was hired by the College. He still holds this joint appointment, making him the only biology faculty member who is also a true faculty member at VIMS. For a time, when there was a joint PhD program between William and Mary and the University of Virginia at VIMS, Dr. Black also found himself appointed as a faculty member of the University of Virginia --unfortunately without a salary.

The view from the door of his first office in the basement of Washington Hall was of shelves of *Biological Abstracts* covered with a blue fungus that flourished in the un-air conditioned Williamsburg climate. At that time there were only five faculty members in the biology department and Dr. Black's National Science Foundation Grant

made him one of very few faculty with federal grants support. During his first years at the college Dr. Black conducted his research at VIMS. Later he taught and did research in the quonset huts behind the campus center, which housed the Biology Department before the construction of Millington.

Through the years Dr. Black has taught courses in Cell Physiology, Experimental Embryology, Comparative Physiology, and Invertebrate Development, as well as Developmental Biology and parts of Introductory Zoology. Dr. Black's research career at the college began with an interest in the biochemical changes during sea urchin fertilization and included a bit of travel as it evolved. In 1964, he spent the summer in Bermuda with his family, teaching and doing research. He returned to the University of Washington, where he had received his degree, for six months in 1967. He also spent three summers at the Gulf Coast University of Texas Marine Lab.



A Jack of All Trades

From an interview with Erika Shugart

After thirty years at William and Mary, Dr. Jack Brooks summed up his experience this way: "I've just really enjoyed teaching because the students are so good." Although he has thoroughly enjoyed his career at the College, he's looking forward to doing "something different," to continuing his nature photography and travelling. This summer he'll return to Australia, leading another group of William and Mary students through the outback.

Dr. Brooks' first duties were to teach Human Physiology. Since then he has initiated a number of courses, from Vertebrate Biology and then Evolution to the current Human Biology course. He also helped start the College-wide Honors Colloquium in the early 1960's, the program that preceded the present Charles Center programs. He thinks the College recently has tended toward over-emphasizing graduate research at the expense of the undergraduate program. "What makes William and Mary great?" he asks. "The undergraduate program."

One thing he misses is the willingness of students and faculty to take time off to go camping in the mountains. He figures he's been on 15-20 Biology Club camping trips, mainly in the 1960's and 70's. He has good memories of hiking and camping with students and a number of other faculty such as Gus Hall, Bruce Grant, and Larry Wiseman. He thinks both students and faculty have changed, that students are more competitive now and have little time for weekend camping trips. But he's not complaining, only observing.

In 30 years, Professor Brooks has taught over 9,000 undergraduate students and directed about 15 graduate students, a number of whom have gone on to Ph.D.'s and faculty careers of their own. "I enjoy keeping up with current knowledge in my specialities," he says, glancing around his office filled with books and journals.

Although he has loved his job at the College, Brooks says "I'm glad I'm retiring," because now he can do many of the things he's wanted to try if he only had the time. For the first two or three years after retirement he says he "will play it by ear," travel and concentrate on his new avocation, photography. But he will remain a Jack of all trades, for next Fall he'll be back to teach General Zoology in the new curriculum. He just can't pull himself away.

Ornithologist Is Spelled B-Y-R-D

By Amanda Allen

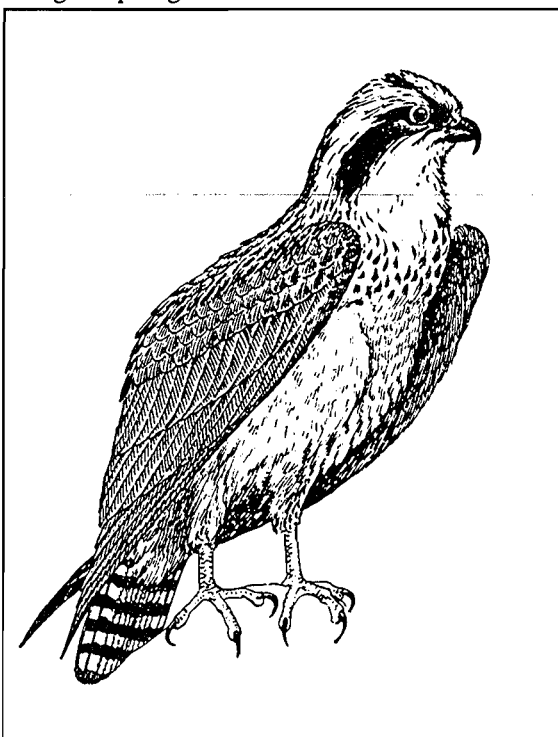
From the looks of his office, it would appear that Dr. Mitchell Byrd will be retiring in May. The tables which once housed foot high stacks of reports and papers (out of which he claims to always be able to "put my hands right on" anything) are almost clear; their emptiness a tell-tale sign that the Byrdman is putting things in order. In reality, retirement after 36 years at William and Mary, during which he served as department chairman and professor of comparative anatomy and ornithology, will only be an end to classes and a chance "to get his work done."

If anybody could be in a state of perpetual motion, Dr. Byrd is. Hours outside of the classroom are spent flying for bald eagle nest surveys, coordinating the Virginia peregrine falcon hack sites, hiking hundreds of miles in search of nesting falcons, monitoring osprey populations, banding migrating raptors on the Eastern Shore of Virginia, serving as a consultant for and developing plans for species and habitat preservation, working with the Department of Game and Inland Fisheries, editing the bird chapter in the new *Virginia's Endangered Species* book and, as the list is endless, continuing a conservation quest of the highest order.

Though it may be difficult to catch him in his office, Dr. Byrd's efforts focus on campus issues as well and, from personal experience, students have always been welcome to tag along on an eagle survey or some other adventure out in the field (with field rule #1 being: always pack a hearty lunch which, no matter how delectable, will never match the delicacies of his own "magic table"). In my two summers as a hack site attendant for him in the mountains, he never hiked up without a backpack full of offerings.

While ornithology may be his specialty, Dr. Byrd is a strong proponent of diversity and his own Renaissance knowledge and interests cover all facets of biology from bones to botany to birds. As noteworthy as his knowledge is his sense of humor and he often ignites his class with some straight faced comment like "one rarely sees a rooster at high altitude." After hiking the trails of Shenandoah National Park for over 40 years and never seeing a bear, he adamantly proposed "that there are no bear in Shenandoah National Park", though I have not heard that comment since he was bluff charged by a black bear sow last summer.

After retirement this May, Dr. Byrd will continue to work out of his office on the second floor and even with all his clearing out of papers this semester, I am sure that by next semester those foot-high stacks of papers will accumulate again. But, then again his office would not be the same without them, nor will the biology department without him.



Peripatetic Professor Hall

By Angie Wonsettler

Professor Gustav Hall has spent much of his time, outside the classroom, traveling the world. He has visited thirty seven countries on five continents as a botanist, a birdwatcher, and as an assistant on various biological field trips. When asked about his travels he remarked that the most exciting places he had visited were Peru, Tanzania, and Rwanda.

Professor Hall described his trip to Peru as the most exciting place in the Western hemisphere. The first morning he and his fellow birdwatchers traveled to a remote stretch of the coast in nothing more than a Volkswagen Beetle. When they arrived they found a large colony of seals, Humboldt penguins, and one lone condor waiting for a dinner of seal, penguin, or "any person who happened to slip off the cliffs". The group moved on to the flats where they were greeted by thousands of Chilean flamingos flocking under the rising sun. From the flats they continued on through a mountain pass to an altitude of 16,000 feet. Although this area was not accommodating to low altitude lungs (Professor Hall stated that it was difficult to walk twenty feet without losing your breath), it was home for llamas and their herdsmen. Among the high altitude lakes, the birdwatchers saw many unique types of waterfowl and shorebirds. Another exciting adventure of Hall and fellow birdwatchers was being taken at machete point by the Yarinacocha Indians to their village on an oxbow lake in the Amazon basin and charged with trespassing. Their punishment for this crime was payment of a two dollar apiece fine, later waived.

Doctor Hall also remarked on his adventures in Tanzania and Rwanda. While in Tanzania, he visited the Serengeti Plain which was inhabited by over three million large animals including wildebeest, zebras, and lions close at hand. The Virunga Volcanos of Rwanda provided Hall with the opportunity of viewing the mountain gorillas. Before the trip the group was given instructions to follow in the presence of the gorilla "similar to those which you would follow in a faculty meeting" including: crouch with your head low, don't make any sudden movements or noise, and if a gorilla takes something from you don't attempt to take it back. Hall and friends hiked up to the area where the gorillas lived to be greeted by a 400 pound silver-back male screaming a warning call. When asked if this was frightening, Hall stated that he was more afraid of the native guides than the gorillas.

Incidental to these trips into the depths of nature, Professor Hall has also visited many cultural centers including the Great Pyramids in Mexico, the Alhambra in Grenada, Spain, the Paris Opera, and the Topkapi Palace in Istanbul.

In response to retiring, Professor Hall remarked that he is anxious to move on from being a college professor so that he can become more cultured and better traveled. It is sarcastic remarks like these that remind us of the incredible diversity and beauty of this world that we should all strive to see. Appreciation of "worlds" other than our own is the key to preventing ethnocentrism, and Professor Hall is an example of that fact.