



THE NICHE

The Student -Faculty Newsletter of The Department of Biology
The College of William & Mary

Volume 3, Number 2

December 7, 1990

DEPARTMENT AND COLLEGE LOOKING AT CURRICULUM

The Department of Biology has appointed a Curriculum Revision Committee to examine its curriculum. Chaired by Professor Bruce Grant, it is looking carefully at introductory courses and laboratories for both potential majors and non-science majors as well as upper level offerings. Others on the Committee are Professors Bradley, Capelli, Mathes, and Scott.

The Committee has been meeting weekly throughout the semester and will present its recommendations to the Department for discussion later this year. **Student comments and suggestions are welcome.**

The College Curriculum Review Steering Committee, chaired by Dean of Undergraduate Studies Clyde Haulman, is composed of sixteen faculty members from a number of departments and programs and five students. Department of Biology Chair Lawrence Wiseman is a member of this all-College group.

The Committee hopes to have a draft report ready by Fall, 1991. Topics being discussed include core/distribution requirements, writing, language and physical education proficiencies, freshmen year experience, course loads, class size, concentrations, honors courses, and teaching evaluation and rewards.

William and Mary's curriculum has remained relatively unchanged for twenty years. **Student comments directed to Dean Haulman or Professor Wiseman are invited.**

New Phi Beta Kappa Members

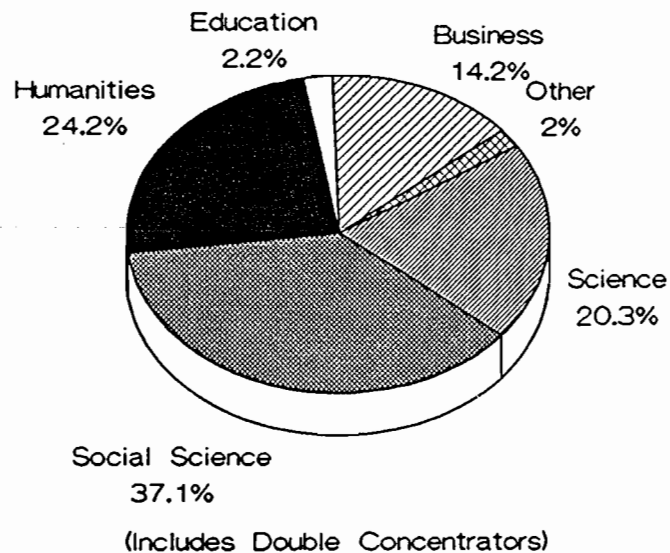
Congratulations to Biology majors, class of 1991, elected to Phi Beta Kappa: Ken Callicott, Wesley Farris, Mary Halnon, Elizabeth Tan, Roger Tatum, Wendy Taylor, and Michael Vives. Biology majors make up 8% of the class, but 20% of new members.

Bio Club To Establish Repository For Information On Internships, Summer Courses, Jobs, Schools

The Biology Club is setting up a system in the Biology Library/Reading Room 112 to keep information the Department receives on opportunities for students: internships, workshops, summer courses and research programs, jobs for biology graduates, graduate schools, and fellowship opportunities. The new system should be in place before second semester, and new information will be added as it arrives. Please visit and browse through the collection.

W&M New Concentrators, 1990

1012 Initial Declarations, March 12-21

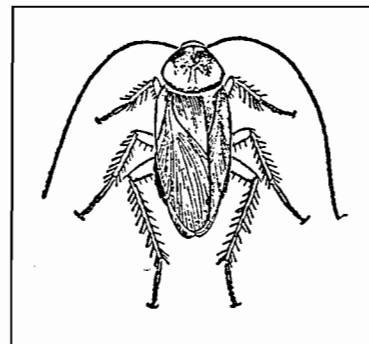


Millington Hall Is Bugged

by Lisa Jones

There is probably no one who frequents Millington that hasn't encountered a bug there at one time or another. Bugs in Millington can be divided into three broad categories--those that live there, those that people bring there, and those that just wandered in.

The most infamous of Millington bugs is the roach. Actually, there are two types of roach residing in Millington--the Brown-Banded roach and the American roach. Which is bigger? The American one, of course. Roaches will make their home wherever they can find organic material to feed upon, and Millington offers them several food sources. For example, besides food dropped or left about by people, there is the food for the laboratory animals in the basement. The green house is also rumored to be a favorite hang out for both ants and roaches.

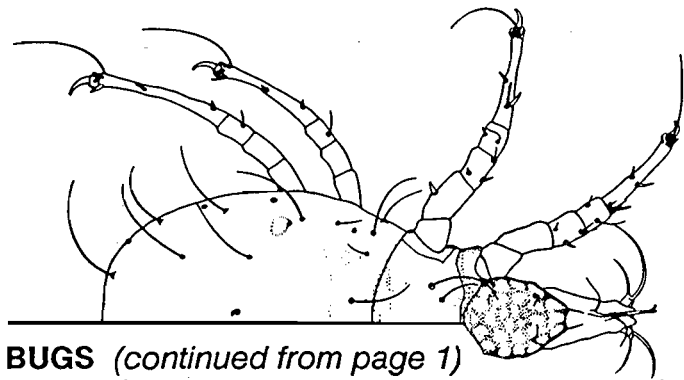


(continued on page 2, BUGS)

Summer Research Opportunities In Department

The \$1 million award to the College and Department from the Howard Hughes Medical Institute includes summer research stipends for William and Mary students in Molecular Biology. See Professor Black for information. The Department has submitted a proposal to the National Science Foundation for summer research assistance to students in Animal Ecology. See Professors Fashing and Black.

For other opportunities contact Dr. Hoegerman, Chair of the Department's Undergraduate Research Committee.



BUGS (continued from page 1)

The life of a Millington roach is not completely care-free, however. They must contend with a naturally occurring predator--the house centipede. House centipedes are common household bugs; you may have seen them in your own house. Like other centipedes, they have rows of legs running down either side of their body and are relatively quick-moving, a necessity for chasing down the roaches and other bugs they prey upon. They are harmless to people, though, as they do not possess the venom-injecting fangs that other centipedes do.

It takes a keener eye to spot some of the other bugs that may be found in Millington. House dust mites are small whitish bugs about the size of a spec of dust, approximately half a millimeter across. Their favorite food is sloughed off skin. There are probably a bunch of them living in your bed. If they aren't annoying enough already, dust mites are also a major source of the allergens which cause dust allergies. Another minuscule bug, book lice eat old organic matter and seem to be particularly fond of the glue in the bindings of books, hence their name. They also eat sloughed off skin, like the dust mites.

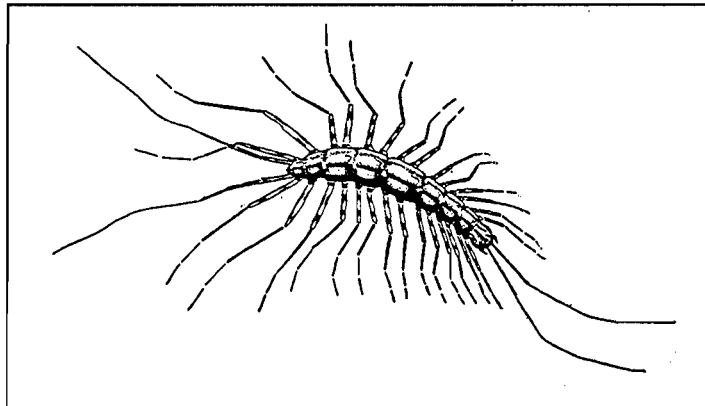
The second category of Millington bugs are those imported for biological study. Most common of these is most likely *Drosophila melanogaster*, otherwise known as the fruit fly, which is used in the Genetics laboratory. Also, there are barrels of *Biston betularia* caterpillars that Professor Grant has collected and brought to Millington to study. (Of course, the bugs in the Entomology lab go without mentioning.)

A great variety of bugs may by chance blunder into Millington, or any building in Williamsburg for that matter. These include some well-known characters. Finding a Black Widow spider in Williamsburg is not an unusual event. Brown Recluse spiders, despite their notorious reputation in the area, are much less common.

Do bugs like those found in Millington have anything to

contribute to science? Although it may surprise some people, their contribution is enormous, both to science and life. With respect to science, bugs and insects may have contributed more than any other organism. They are well-suited to laboratory study, being easy and inexpensive to maintain, as well as having a relatively short life span. It is estimated that anywhere from 50% to 90% of all species are insects, and a huge amount of research has involved bugs and insects.

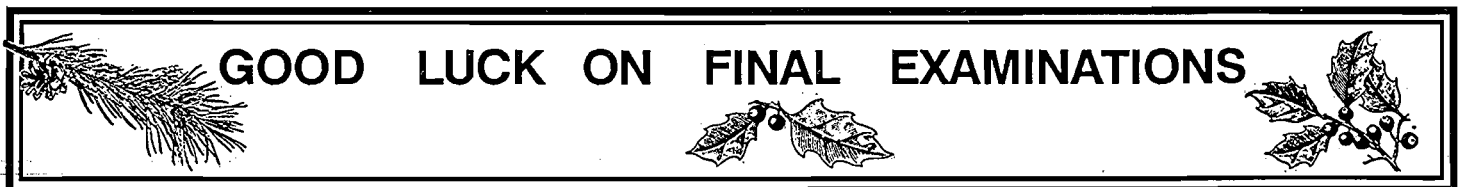
There are numerous examples from here at William and Mary alone. Professor Fashing surveyed the dust mite populations of houses in the Williamsburg area. The relatively large



dust mite populations found were thought to be partially responsible for the high incidence of allergies in the area. Professors Mangum, Black, and Scott studied the hemocyanin of centipedes, like those that can be found in Millington, and its implication in arthropod phylogeny. These

are only a few examples of research conducted at William and Mary which has used insects and bugs.

If you've ever wondered whether the world would be a better place without bugs, the answer is an emphatic no. Bugs and insects are needed to pollinate plants, and like earthworms aerate and enrich the top soil. Bugs are instrumental in the breakdown and decay of organic material, like dead things or animal dung. Forensic entomologists examine the types of bugs found in corpses, from which such information as where and when the death occurred. Although European cultures frown upon eating insects, they are an accepted and nutritious food source in places such as Africa and South America. African cookbooks even have chapters on preparing insects. Think of these things the next time you go to step on a roach.



BioScience Crossword Puzzle

by Sally Hunsucker

Thought you'd never use those four semesters of chemistry? Well, here's your chance to drag out the periodic table and remember those molecular configurations, along with lots of bio words! Hint: cs stand for Chemical Symbol. Good luck!

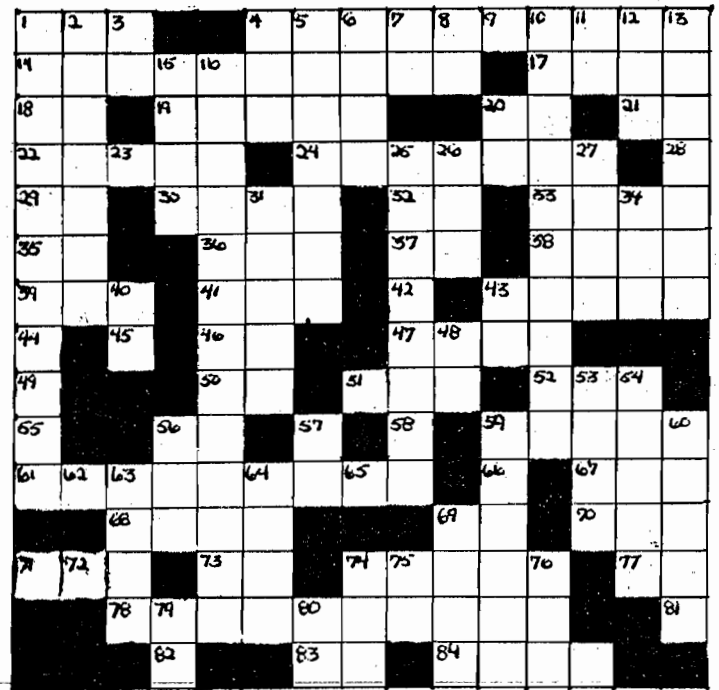
ACROSS: 1. a nucleic acid 4. stage of mitosis 14. a type of bacteria 17. social insects 18. type of computer (abbr.) 19. substance that disintegrates blood cells 20. Aluminum (cs) 21. ___-tiram; a metallic element 22. South American ruminant 24. a primary root 28. Uranium (cs) 29. that is (abbr.) 30. a social insect (abbr.) 32. ruthenium (cs) 33. 1,4 bonding on benzene 35. copper (cs) 36. natural metallic compound 37. opposite of off 38. ___-oglyphics; Egyptian writing 39. type of tree 41. ___ body 42. ___ RNA 43. muddy 44. ___ RNA 45. oxygen (cs) 46. one 47. molecular configuration, not keto 49. iodine (cs) 50. cesium (cs) 51. ___ de Janeiro 52. to consume 55. oxygen (cs) 56. astatine (cs) 57. one 58. nitrogen (cs) 59. spore sack in ascomycetes 61. structure found in the nucleus 66. 50, to Caesar 67. flightless bird of Australia 68. a unit of length 69. antimony (cs) 70. a type of pet 71. molecular configuration, not trans 73. 2, to Caesar 74. ___-ide series of radioactive elements 77. residence advisor (abbr.) 78. to uproot and grow elsewhere 81. ___ RNA 82. an axis 83. to exist 84. cord

DOWN: 1. copying of DNA 2. cell structure 3. ___ CDEF, etc. 4. belonging to 5. not (in reference to two) 6. a type of nucleic acid 7. ___-nstein, a mathematician/physicist 8. residence advisor (abbr.) 9. ___-arm (of a chromosome) 10. archaeobacteria that like high concentrations of salt 11. one 12. inflamed swelling on eyelid 13. tidal mouth of a river 15. ___ mater 16. previously called blue-green algae 20. ___-rta; an artery 23. one 25. compounds made of amino acids 26. jog 27. horse's flyswatter 31. molecular configuration 34. to soak flax 40. Santa Claus word 43. and ___ on (etc) 48. negative response 51. ___ RNA 53. did quite well 54. malignant ___ 56. a winglike part 57. aluminum 58. lack of pigment 60. sucrose 62. uranium (cs) 63. fluid filled sac 64. chief Norse god 65. uranium (cs) 69. astronomical body 71. carbon (cs) 72. iodine (cs) 74. mimic 75. chlorine (cs) 76. normal temperature and pressure (abbr.) 79. recipe (abbr) 80. antimony (cs)



Biology Club Helps In Local School Science Fair

The Biology Club set up a hands-on exhibit at the Williamsburg - James City Regional Science Fair at Lafayette High School on December 1, 1990. The Club presented an award to a sixth grader showing potential for the study of biology. Matt Nestor received a copy of Gerald Durrell's *The Amateur Naturalist* and a Wildlife Center of Virginia T-shirt for his study "How Different Fertilizers Work on Grass Seed." Plant cuttings from the William and Mary Greenhouse were also given to each participating student at the Fair.



(Answers on back of this sheet.)

Collecting Gold Receipts from FARM FRESH Will Support Planting Trees on Campus

The Farm Fresh Community Gift Program has agreed to support the donation of funds for the planting of trees on the college campus. Unique specimen trees and dormitory plantings will be purchased with the gift. The amount of donation will equal 2% of gold receipts collected during the period of December 30th to March 23rd. All members of the college community are encouraged to collect their Farm Fresh register receipts and send them to: *Martin C. Mathes, Department of Biology*. An envelope for the receipts will also be placed on the biology club bulletin board. Your assistance in this program will be appreciated!

Mary E. Ferguson Grant Recipients

Congratulations to the following biology students who were awarded funding for their research projects through the Mary E. Ferguson Memorial Research Grant:

Michael Vives
Steven Crossman
Steve Rottenborn
Thomas Umbach

A total of approximately \$900 was distributed in the form of research grants among these students. The Mary E. Ferguson Grant program is intended to provide research funds for undergraduates. The fund was established in 1981 to honor Mary E. Ferguson who died in 1980 while a senior in the Biology Department.

TOP TEN LIST

From the Home Office in Williamsburg, Virginia,
The Top Ten Ways to Waste Time in Biology Labs:

- 1. Take an inventory of Dr. Mathes' pointers
- 2. Catch vicious, escaped fruit flies: 1 point each, 3 for white eyes
- 3. Attempt to get water out of the basement water fountain
- 4. Make faces in the two way mirrors in the psych department
- 5. Autoclave your roommate's pet rock
- 6. Make a fungus collection for Prof. Cour-
sen
- 7. Think about fate, predestination, and
what they have to do with Dr. Byrd studying
birds
- 8. Apply these thoughts about fate and
predestination to your chem grade
- 9. Derive a mathematical formula for the
coat per professor ratio that would fill up
all the coat hooks in Millington
- 10. Blow bubbles with the test tube cleaner

Letters to THE NICHE

Please address your questions, comments, suggestions to THE NICHE, Biology Department or drop them off at our mailbox in Millington, Room 118.

The following questions were asked of the editors since our last edition:

Who's teaching Zoology next semester?

Answer: Professor Capelli with perhaps some lectures by several other faculty. Professor Brooks, who has taught the course in recent semesters, is on research leave this academic year.

How will the budget cuts affect biology courses?

Answer: Professor Wiseman, Chair of the Department, says "If the cuts continue or are increased next year, we may have to scale down some of our laboratories. So far this year, the cuts have not hurt courses too badly because of the Howard Hughes million dollar grant, elimination of faculty travel, and careful spending. This year students should not notice significant differences in the level of course support in Biology. Next year may be different especially if the College goes through with its threatened decrease in departmental budgets for library journals."

Why do we have to take Chemistry to be a bio major?

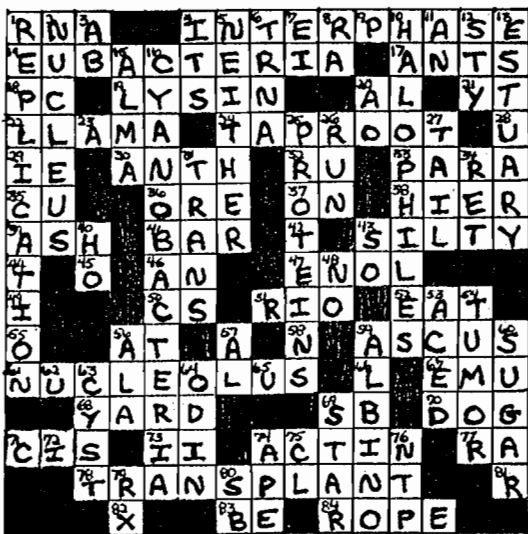
Answer: Again from Professor Wiseman, "Understanding chemistry is essential to understanding biology, just as understanding physics is essential to understanding chemistry (and biology), and understanding mathematics is necessary to understand physics (and chemistry and biology). There is a certain hierarchical ordering of science which makes sense. We must know about molecules to understand cells and tissues, but a chemist doesn't have to know about cells and tissues to understand methane. The number of chemistry courses that should be required of biology majors—especially those who are interested in areas of biology which are not so dependent upon chemistry—is, however, debatable. The Department has recently begun discussing just this question. Of course, for medical school and most graduate and professional school admission, four chemistry courses are required."

Why is physics recommended? Which course should we take—regular physics or the one for non-science majors?

Answer: See answer above. Physics is required for medical school and most graduate and professional schools. The regular physics course is the one of choice, although the non-science course may be adequate. The Physics Department insists that all declared Area III concentrators opt for the regular physics course, not the one for non-science majors.

Why has the "Plant of the Month" in the greenhouse been the same since August?

Answer: The plant in question, Stapelia scalis, sits on a wooden shelf near the entrance to the greenhouse under the sign "plant of the month." Stapelia scalis' most notable characteristic is its spotted flowers which smell like decaying meat. The flowers tend to attract flies, which pollinate them. Dr. Mathes was approached with this question concerning the tenure-track plant. His reply: "It doesn't say which month, does it?" So, unless early retirement ensues, you know where to find this fragrant beauty.



A New Reading List? {Biology Professors Answer: "What Three Books Have Been Most Influential In Your Life?"}

What three books have been most influential in your life? THE NICHE asked this question of the professors in the Biology Department. Many faculty wondered if we meant their professional or personal life or both; some wondered if they should include books they didn't like, but influenced them nonetheless. Given the admitted ambiguity of the question's wording, different interpretations yielded a range of responses.

About one-third of all the professors answered the question, and we think you might find the "reading list" interesting. The choices are presented in the individual styles in which they were returned (for longer responses some editing was required):

Professor Capelli: "Among books I would choose only one: *The Fountainhead*, by Ayn Rand, for its simple but profound insight into values, merit, and reward. The biggest influence in my life has been, simply, a career in biology. Biology not only gives me something to do, but also shapes my fundamental views of what life is, and what is important in life."

Professor Guth: "For the books most influential in my life, I have chosen three that were never part of any course or reading assignment in college, but which I happened upon in ways I can no longer recall. They are:"

Principles of Development by Paul Weiss

Beethoven: His Spiritual Development by J. W. N. Sullivan

Walden by Henry David Thoreau

Professor Hall:

Walden by Henry David Thoreau

The Rubaiyat of Omar Khayyam translated by E. Fitzgerald

The Birds of America by J. J. Audubon

Professor Phillips:

The Bible

Flatland by Edward Abbott

Babbitt by Sinclair Lewis

Professor Scott:

Personal, Social Life:

Cannery Row by John Steinbeck

The Sun Also Rises by Ernest Hemingway

Professional Life:

Structure and Reproduction of Algae by F. E. Fritsch

Professor Terman: "The following books have had great influence on :

My life:"

The Bible

Mere Christianity by C. S. Lewis

The Knowledge of the Holy by A. W. Tozier

"My scientific life:"

Principles of Animal Ecology by Allee, Emerson, Park, and Schmidt

Voles, Mice and Lemmings by Charles Elton

Sociobiology by E. O. Wilson

Professor Ware: "What an intriguing question! On the assumption that you mean secular books, I will omit the King James version of the *Bible*, which has either directly or indirectly influenced my life more than any other book."

"In terms of my career, it is clear to me that *Deciduous Forests of North America*, by E. Lucy Braun (published 1950) has influenced me more than any other single book. Among non-biological non-fiction books (the kind I am most likely to read), *The Rise of the West*, by W. H. McNeil, subtitled 'a history of the human community', has influenced my views of the development of civilization more than any other single book. Among books of fiction I have read, clearly the one most likely to come into my thoughts during any given period of time is *All the King's Men*, by Robert Penn Warren, published in the late 1930's."

Professor Wiseman:

Desert Solitaire by Edward Abbey

The Grapes of Wrath by John Steinbeck

Skepticism and Animal Faith by George Santayana



WILLIAM & MARY

BIOLOGY

300th Birthday Planning Begins

The Department of Biology is beginning to plan its participation in the College's 300th anniversary festivities in 1993. Professor Charlotte Mangum is chairing Biology's Tercentenary Celebration Committee. The Department will hold a reunion for graduates, including a party, a display of their whereabouts and professional accomplishments, and a short program on the history of education and scholarship in Biology at William and Mary.

Over 2,200 letters were recently sent to Biology alumni inviting them to return to campus for the celebration and asking if they'd prefer a Homecoming or a Charter Day date.

THE NICHE

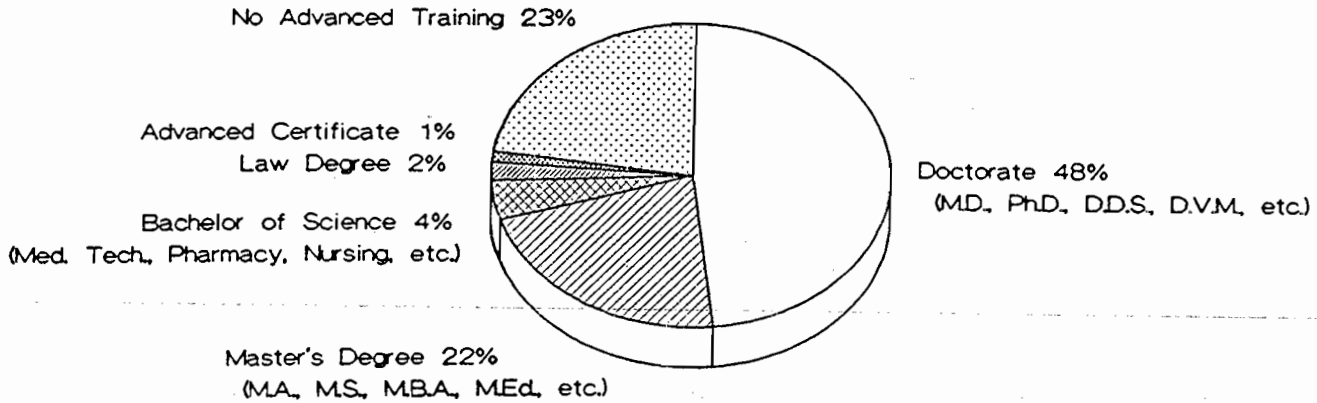
The Student-Faculty Newsletter of The Department of Biology
The College of William & Mary

Published by the Department of Biology and Biology Club
Co-editors: Sally Hunsucker and Lisa Jones

THE NICHE

*Biology Department Newsletter
College of William and Mary*

W&M Biology Graduates Advanced Training Since Graduation



THE NICHE

*Department of Biology
College of William and Mary
Williamsburg, VA 23185*

TO: