we do will require a considerable degree of coordination because it is going to require schools to work with one another to a degree I can't recall seeing before. For this reason I think regional groups such as AMCBT could play a very important role in this cooperative effort. We already have a built-in mechanism of information exchange. We have members in all types of educational settings. Jointly I feel we could develop several means whereby the output of teachers of science and math could be increased.

At this point I think I would like to put the ball in all of your courts. The matter I feel goes to the heart of what AMCBT has and should always stand for. It is something I feel could be quite appropriately handled in Bioscience and in our meetings. As Executive Secretary I would be more than willing to coordinate any efforts the membership wanted to get going in this direction. What is needed is your input, your desire, and your good will.

RESPONSE ANYONE????

******************************************************************************

My apologies to many of you for including on the dues billing amounts that you had paid late last summer, specifically the amount calculated to switch us over to the calendar year billing. Every time I use our computer to do something I learn more about the basic fact that it is a very stupid machine. One of our work study students did very diligently enter these amounts into your accounts, however the computer was not commanded to Save this data. Since your files can only be updated with this command, said information was never entered. Fortunately the office, like many of you who may be switching to some computer use, still saves paper, and we did have a record of your payments. I am using this very public means to apologize to all of you, especially those who noted such on your returned billings.

******************************************************************************

BIOLoGY AT ST. OLAF

by
Harold Hansen (Professor Emeritus, St. Olaf)

The Biology Department occupies the 200 level (main campus level) of the St. Olaf Science Center, a building shared with the departments of chemistry, physics, mathematics and nursing. The departments enjoyed a fine working relationship with the local architects (Sovik, Mathre, Sathrum and Quanbeck) in planning the three million dollar building which was completed in 1968. A large foyer with two adjacent auditorium-type classrooms and the science library are shared by these departments. The biology area includes a core of teaching laboratories, all conveniently clustered about a central stock room. The perimeter is occupied by two classrooms, faculty offices and research labs, a student research room, special facilities (optical, controlled environment, darkroom, animal room, greenhouse), the departmental office and a seminar room (with adjacent coffee kitchen!). Although some computer terminals are located on this floor, principal computer facilities are on the 100 level where they are accessible to all students. Special shop facilities (for wood and metal work) are also on that level. The department has additional storage areas on the lowest level, with doors especially convenient for loading field gear.

Student registrations in the department number about 650 per semester from a total college population of about 3000. The number of graduating majors is high (97 in 1982) and includes those who prepare for secondary school teaching or for medical, dental, veterinary or graduate schools. In his or her first two years at St. Olaf, a major-oriented student would typically take a course in Cellular Biology and Genetics, one in Organismal Biology, two semesters of chemistry, two of mathematics, one in physics plus an additional course in biology. This plan enables the student to get a strong foundation in the sciences and thus

- PAGE 3 -
to be free to move into more specialized courses in the junior and senior years. The usual
distribution (area) requirements of the liberal arts program and electives would complete
the student's registration under the 4-1-4 system.

The courses regularly offered by the department include:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>21 or 22</td>
<td>Biological Science</td>
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<tr>
<td>24</td>
<td>Anatomy and Physiology</td>
</tr>
<tr>
<td>25</td>
<td>Cellular Biology and Genetics</td>
</tr>
<tr>
<td>26</td>
<td>Organismal Biology</td>
</tr>
<tr>
<td>31</td>
<td>Microbiology</td>
</tr>
<tr>
<td>32</td>
<td>Interdisciplinary Biology</td>
</tr>
<tr>
<td>45</td>
<td>Field Biology (1/4)</td>
</tr>
<tr>
<td>51</td>
<td>Plant Physiology</td>
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<tr>
<td>52</td>
<td>Plant Morphology</td>
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<tr>
<td>53</td>
<td>Invertebrate Zoology</td>
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<tr>
<td>61</td>
<td>Ecological Principles</td>
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<tr>
<td>62</td>
<td>Field Ecology</td>
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<tr>
<td>64</td>
<td>Virology</td>
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<tr>
<td>66</td>
<td>Comparative Anatomy</td>
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<tr>
<td>72</td>
<td>Animal Development</td>
</tr>
<tr>
<td>76</td>
<td>Cell and Tissue Biology</td>
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<tr>
<td>81</td>
<td>Animal Physiology</td>
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<tr>
<td>82</td>
<td>Desert Ecology (Arizona)</td>
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<tr>
<td>83</td>
<td>Nutrition in the Third World</td>
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<tr>
<td>84</td>
<td>Current Problems in Evolution</td>
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<tr>
<td>85</td>
<td>Biogeography</td>
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</tbody>
</table>

Biology students may also study and conduct research under three programs sponsored by The
American Colleges of the Midwest: The Oak Ridge Science Semester, The Wilderness Field
Station, and Tropical Field Research in Costa Rica.

The January Interim provides an opportunity for specialized study which in 1983 included the
following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>20</td>
<td>Reproductive Physiology</td>
</tr>
<tr>
<td>21</td>
<td>Supermarket Botany</td>
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<tr>
<td>80</td>
<td>Marine Ecology (Cayman Islands)</td>
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<td>81</td>
<td>Winter Ecology (Itasca Park)</td>
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<tr>
<td>82</td>
<td>Desert Ecology (Arizona)</td>
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<td>83</td>
<td>Nutrition in the Third World</td>
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<tr>
<td>84</td>
<td>Current Problems in Evolution</td>
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<tr>
<td>85</td>
<td>Biogeography</td>
</tr>
</tbody>
</table>

Independent Study or Independent Research registration is permitted in either semester
or the interim. The distribution (area) requirements of the college include two courses
(with no more than one course in each) in Biology, Chemistry, Mathematics, or Physics. One
course must be a laboratory science. Some of the departmental offerings are designed for
students seeking to fulfill the requirement, i.e. Biological Science, 21 or 22.

The department publishes a Fall Bulletin, used in conjunction with an all-college
series of information sessions for entering students. Students have their own in house
newsletter entitled Biofeedback. A Seminar series includes as speakers visiting
scientists, some recent graduates, staff members and students.

The college is fortunate in having a woodland area as a part of the campus labeled
spring flowers of the deciduous forest may be observed there. A more recent development is
a student originated project in prairie restoration, again at the edge of the campus. Both
of these projects are supported by a recently organized Natural History Club. The annual
Green Thumb Day is a departmental activity providing students an opportunity to re-pot their
dormitory plants about 600 plants are also given to students on that day.
Current staff members, their primary teaching responsibilities and current research interests are listed below:

**Eugene Bakko**
- Animal Physiology
- Winter Ecology

**Alice Burton**
- Biological Science
- Intermediate Genetics
- Virology
- Problems in Evolution

**Kathie Fishbeck**
- Plant Physiology
- Plant Morphology
- Supermarket Botany

**Ted Johnson**
- Microbiology
- Immunology
- Cancer Biology

**Henry Kermott**
- Anatomy and Physiology
- Animal Behavior
- Comparative Anatomy
- Desert Ecology
- Ornithology (1/4)

**Marland Madson**
- Dept. Chmn.
- Cellular Bio, B Genetics
- Organismic Biology
- Teaching of Life Sci.

**Daniel Palm**
- Cellular Bio, B Genetics
- Nutrition in 3rd World
- Cell and Tissue Bio.

**Linda Scott**
- Anatomy and Physiology
- Reproductive Physiology

**Kerry Woods**
- Ecological Principles
- Field Ecology
- Biogeography
- Math in Biology

**James Zischke**
- Invertebrate Biology
- Field Ecology
- Organismic Biology

- Thermoregulation and Water Balance in Small Mammals
- Recombinant DNA
- Life of A. R. Wallace
- Nitrogen Fixation
- Mineral Nutrition
- Ground Squirrel Hibernation
- Immune Systems of Burn Patients
- Cancer
- Cellulose Production by Bacteria
- Grouse Mating Behavior
- Melanin Physiology
- Plant-soil Relationships
- Course Related Library Instruction
- Animated movie, chick development
- Catecholamine metabolism
- Health Impacts of Indoor Air Quality
- Women's Health Issues
- Ecology of Northern Hardwood Forests
- Water Pollution Studies in Outdoor Experimental Stream Channels
EDITOR'S NOTE: Spring in Indiana is marked by students and faculty taking field trips to observe the emerging vegetation. Some, however, are searching for Morchella esculenta and other edible mushrooms. So that those of us who enjoy the delicacy of spring mushrooms sautéed in butter will survive to see another spring, Don Huffman shares with us his knowledge about 'rooms.

EDIBLE AND POISONOUS MUSHROOMS IN THE MIDWEST
by

Don Huffman (Professor of Biology, Central College)

We biologists generally recognize a mushroom when we meet one, but few of us are confident enough to instruct the novice mycophagist (or ourselves) regarding the edibility or toxicity of a particular mushroom. Because we do have at least 2,500 species of mushrooms in the Midwest, and a human population largely of European origin where wild mushrooms were traditionally used in cooking, it might be useful for us to know some of the basics of mushroom eating and some of the attendant problems.

First of all, only about 20% of the mushrooms are poisonous, about 10% are edible, and the remaining 80% are inedible for reasons of texture, taste, odor, size, or esthetic considerations — would you want to eat a stinkhorn? Of the poisonous mushrooms only about a dozen are deadly, and only a few of these are common in the Midwest. These include the "Destroying Angel," Amanita virosa, and its closely related species A. verna, and A. bisporigera; the "Death Cap," Amanita phalloides; and the "False Morel," Gyromitra esculenta, which is problematic in its poisonings. Most of the other poisonous mushrooms produce less drastic effects, and deaths tend to be more common in very young children. We really do not have reliable vital statistics on mushroom poisoning because much of it is unreported in the cases of gastrointestinal upsets, etc. One study in Colorado over a 4-year period showed about 50 confirmed mushroom poisonings annually, with about six hospitalizations per year. If we had better reporting and recording the Midwest would likely have a poisoning rate comparable to that of the Colorado study.

All of you have heard of some of the "rules of thumb" for determining edibility or toxicity of a given mushroom — silver spoon or coin blackening when placed with poisonous mushrooms; garlic turning dark in the presence of poisonous mushrooms, etc.—unfortunately none of these work. There simply is no generalization or rule-of-thumb method by which poisonous mushrooms may be detected. What is necessary is an accurate identification of a mushroom and learning the mushrooms species by species. This is not terribly difficult, but has been difficult to establish with the public.

Mushroom poisoning is actually rather complex. The toxins are distinguished by chromatographic separation and have been placed in 7 groups. Groups I and II contain cyclopeptides (amanitin) and monomethyl hydrazine (gyromitrin) which respectively, cause cellular destruction: liver and kidney damage and death in 50-90% of the persons who eat them. Groups III and IV contain coprine and muscarine which, respectively, affect the autonomic nervous system with mortality rates of about 6-10%. Groups V and VI contain ibotenic acid-muscimol and psilocybin-psilocin and affect mainly the central nervous system.