



OPUS TO THE IRRATIONAL GARDENER

*January, looking fore and aft,
read seed catalogs; hone the craft.*

*February, Brotherhood time,
collect gardening books; study the clime.*

*March, through thunder and bluster,
start seedlings; let confidence muster.*

*April, soft rains with warming breezes,
pace out garden; wait out late freezes.*

*May, with lusty, wicked thoughts extant,
hoe, fertilize, plow and plant.*

*June, intemperate goddess clashing with mate,
dogs romp through garden - devastate.*

*July, honoring Caesar, with scorching sun,
water diligently; suddenly weeds overrun.*

*August, ditto on Caesar, in Latin increase,
picked over by rabbits; blighted by disease.*

*September, waning days, dew-drenched ground,
tomatoes overflowing, parsley never found.*

*October, hints of autumn, sniffs of witches brew,
more tomatoes vining where greens never grew.*

*November, angry clouds, messy rain,
last of tomatoes ripening at every window pane.*

*December, winter solstice, sun at Capricorn,
patch of jumbled earth; silent, forlorn.*

- Rita Kohn

REPORT OF AIBS MEETING OF SCIENTIFIC SOCIETY PRESIDENTS

Robert Buchholz, AMCBT Representative to AIBS

The meeting was held on December 2nd and 3rd in Washington, D.C. Sixty of the member societies of AIBS were represented. The purpose of the meeting was to update the societies on the activities of Congress, and to meet administrators of National Science Foundation (NSF), Office of Management and Budget (OMB) and National Institute of Public Health (NIH). AIBS is keenly interested in being a voice for biologists to the members of the federal government, both the Congress and the Administration. In fact, I think AIBS tops the AAAS in this task. When Congressmen and Administrators want biological information they are turning more and more to AIBS to give names of biologists who can give this information, or do the research to get the information.

AIBS is very concerned about having biologists present with other scientists at the national level. I sense that AIBS is now becoming a "do something" organization and I would urge that AMCBT remain as a Member Society.

The meeting had four sessions which were:

(1) The Biological Sciences and the Decision-Making Process in Congress. During this time reports were given by Congressmen or their staff. The Committee on Labor and Public Welfare (Subcommittee on Health), the Committee of Merchant Marine and Fisheries, and the Committee on Science and Technology were represented.

(2) The next session was on the Activities of AIBS which was chaired by Richard Trumbull, the AIBS Executive Director. The following topics were reported on: (a) Why Belong to AIBS; (b) Education and Project Biotech; (c) AIBS Meetings; (d) AIBS Membership; (e) AIBS Publications; (f) AIBS Public Responsibilities; (g) and AIBS Special Science Programs.

(3) The third session was given by Frank J. Rauscher, Director of the National Cancer Institute.

(4) The fourth session was called Biological Sciences and Management in Government Agencies. In this session reports were given by (a) NSF; (b) Science, Space and Technology Office of Management and Budget; (c) and Theodore Cooper, the Assistant Secretary for Health of the Department of Health, Education and Welfare.

After each session many questions were asked by us and it was quite interesting to get the behind the scenes view. Before the meeting was over the Congressmen or their staff knew about AIBS and its function. We all had a better idea of how decisions are made in government and how biologists can be more involved in the process.

* * * * *

All free governments, whatever their name, are in reality governments by public opinion; and it is on the quality of this public opinion that their prosperity depends.

James Russell Lowell

EARN WHILE YOU LEARN

William J. Brett, Department of Life Sciences
Indiana State University, Terre Haute, IN 47809

Many of us have experienced the national trend of lower SAT scores but higher grade indicies for undergraduate students. In many schools the average grade has become a "B" rather than the "traditional C." This trend has created a problem of conscience, if nothing else, for many teachers. Those of us teaching beginning biology courses are faced with specific problems. Our students are going through the adjustment period that occurs between being an upperclass high school student and being a beginning college student. We are expected to expose the student to a wide range of biological materials, and more than that, to hold him or her accountable for the mastering of the materials so that he or she is prepared for the advanced biology classes. We are also in competition with many other areas of the college and, in some cases, some or many of these areas offer rather easy grades. As a consequence, it often seems expedient and perhaps even prudent to drop our expectancy level on tests so that we also have a "B" or a least a "C+" class average. The sad aspects of this transaction are mainly two-fold: both the student and the instructor know that the grade is a "gift" and is not indicative of the accomplishment of the student; and even worse, the student probably was capable of doing a much better job. The question then comes down to, "how can an instructor provide a learning situation such that it allows for the adjustment of learning to become a student, offers the opportunity for the students to earn a decent grade and, most important, turns out a decent biology student?"

We have put together a package learning situation which we hope will succeed in doing the above. As we are only into our second semester on this system, we can only give a preliminary report of results and draw rather cursory conclusions as to the long-term outcome. Our biology course for majors and minors is a two semester course with four hours credit for each semester. The lecture is three hours and meets for four 50-minute periods per week (MTWTF), with the Tuesday session devoted to films and briefing for the laboratory exercise. Lab receives one hour credit and meets for two hours each week. Three faculty members participate in lectures each semester and the lab sections are directed by a faculty member and a junior graduate assistant or two senior graduate assistants, with at least one of them having experience in the course.

At the first lecture meeting, the students were given a mimeographed sheet indicating the topics to be covered in lecture and lab and the grading system to be employed in both. Without going into detail about the mechanics of the system, the student's grade in lecture was determined as follows:

1. Three lecture exams, each worth 50 points
2. Final comprehensive exam worth 100 points
3. Opportunity to take a repeat exam over material covered in first or second lecture exam
4. Each student was assigned both a plant and animal as his or her literature research organisms. At the beginning of some of the lecture periods, the student is given two minutes to answer a question concerning his or her organism. Each correct answer is worth one point.
5. Students may turn in summations of biological articles. The article must come from one of the journals in the science library and have been written within the last three years. A maximum of ten summations, worth one point each, may be turned in.
6. Students may present a ten minute seminar on a biological subject. Material for the seminar must be taken from recent articles (within the last ten years). A minimum of five articles must be used and a bibliography is turned in prior to the seminar. A maximum of three seminars, worth five points each, may be given.

7. Total points possible for the course:		
a. lecture tests - three at 50 pts		150
b. final exam		100
c. seminars		15
d. summations		10
e. bonus questions		10
		<hr/>
	total	285
8. Points equated to grades		
a. 90% of 250 test points		225 = A
b. 80%		200 = B
c. 70%		175 = C
d. 60%		150 = D
e. below 60%		= F

The grading system for lab was as follows:

1. There are 14 lab exercises, and there will be a ten point quiz given over exercises 4 through 14; a total of 11 quizzes.	
2. Three repeat quizzes can be taken, one from 4-7, one from 8-11, and one from 12-14.	
3. The lowest quiz grade will be dropped.	
4. A special two-hour research lab can be completed for three points. These labs are given once a week and a student can take three of these labs.	
5. Total points possible:	
a. 10 lab quizzes at 10 points each	100
b. Research lab exercises	9
	<hr/>
	total 109
6. Points equated to grades	
a. 90% of 100 test points	90 = A
b. 80%	80 = B
c. 70%	70 = C
d. 60%	60 = D
e. below 60%	= F

The results of the students' response to the opportunities to improve their grades in lecture are summed up in Table 1. The same type of data are presented for the laboratory in Table 2. The fact that 18% did not take a repeat exam in lecture and 44% did not take at least one repeat exam in lab can be partially explained by the reason that some of the students had "A" grades on the original tests and felt there was little chance or reason to try and improve their grade. But a certain percentage had grades of such a quality that they could well have taken a repeat and did not. A reason for the lower percentage of makeups in lab may be explained by the higher grade average in lab as compared to lecture (Table 4). It is quite obvious that the seminar presented a greater challenge than any of the other opportunities either in lecture or lab, as only 32.4% presented one or more seminars. It also appears that giving one seminar did not automatically lead to giving two or more seminars. In the case of summaries, however, if a student prepared any summaries, he or she tended to prepare all ten summaries as can be seen by the large percentage (25.57%) of students turning in ten summaries. A similar response is seen in laboratory research exercise participation where 36.6% attended three labs and only 12.8% and 15.1% attended one and two exercises respectively. In the case of bonus point questions, the mean number correct is about 5 for 94.8% of the students. The students were given a lab exercise on the use of the library which may account for this high participation rate.

Table 1. Percentage of students (170) taking advantage of the various opportunities to improve their lecture grade.

Number completed	Seminars	Summaries	Bonus questions	Makeup exams
1	14.2	0.6	4.0	82.2
2	8.5	2.8	5.2	
3	9.7	2.3	14.5	
4		4.6	12.1	
5		4.0	13.3	
6		2.3	17.3	
7		2.8	15.0	
8		4.0	8.7	
9		3.4	4.9	
10		25.6	*	
1-10	32.4	52.3	94.8	82.2

* One question was discarded because data were lacking for some of the organisms.

Table 2. Percentage of students (170) taking advantage of the various opportunities to improve their lab grade.

Number completed	Research exercise	Repeat quiz
1	12.8	35.6
2	15.1	16.3
3	36.6	3.0
1-3	64.5	55.8

An examination of Table 3 gives some insight into the time factor in the students' participation in research labs and seminars. There was an attempt made to restrict the number of participants in seminar to 18 per session and in research lab to 30 per session. Only the first three and the last research sessions had less than 25 participants. The last session was given during final exam week which would account for the low number of participants; the low number in the first three sessions is due partially to inertia on the students' part and partially to the fact that they had not had any quizzes in lab at that time and did not feel the necessity for improving their grades. In seminars, it was not until the tenth session that at least 66% of the possible seminar limit was realized, and there was not a single session in which every available spot was filled. The first two seminars of the second semester have had two and five participants respectively, which, although this is a considerable improvement over the first semester, suggests that students continue to consider the seminar as the most difficult way to improve their grade. In comparison, the first lab session this semester had 27 students and several students have already turned in all ten of their summaries.

Table 3. Number of students participating each week in seminars and research lab exercises.

# of session	Seminar	Research exercise	# of session	Seminar	Research exercise
1	0	5	8	8	30
2	3	11	9	12	26
3	2	5	10	16	38
4	0	27	11	17	30
5	10	25	12	14	14
6	5	26	13	15	
7	9	25			

Now to re-examine the original proposal of a learning situation which will do the following: allows for adjustment of learning to become a student, offers the opportunity to earn a decent grade, and turns out a decent biology student. It is our opinion that often an exam is a real eye opener to a student, particularly a freshman. And if one uses it as a learning experience, both the instructor and the student get some idea of the areas that require more work either on the part of the student and/or the teacher. That at least the students were able to use the exams in this manner is evident from the number taking repeat exams and the results of the exams. In lecture, 82.22% took a repeat exam and 77% improved their grades, 18% received a lower grade on the repeat exam, and 5% received the same grade. It should be noted that the repeat exams, while over the same material, were made up of new questions. In the lab repeat quizzes, the percentage improving their grades was slightly higher than in lecture. If one is chiefly concerned with the student mastering the material and not the time or effort that must be put in to accomplish this, then there is no major objection to repeat exams and it does accomplish the purpose of helping the student to adjust.

As to the accomplishment of the second point, "present the opportunity to earn a decent grade," this can be evaluated by examination of Table 4. Whereas the lecture grade distribution is a typical bell-shaped curve, the lab grades are much higher with the average grade being a "C+." The percentage of "D's" and "F's" are pretty much the same in lecture and lab but the average grade is skewed toward the "A" in

Table 4. Grade distribution by percentage for lecture and laboratory.

Grade	A	B	C	D	F
Lecture	10.7	18.9	37.9	22.5	10.0
Laboratory	32.0	22.7	18.6	14.5	12.2

lab rather than to the "C" as in lecture. This could be due to any of several things: the lab tests are easier, the student is more apt to take advantage of the opportunities to improve his or her lab grade, or the student finds lab work more interesting than lecture material. At this time we are not able to say which one or combination of these factors is most important. Actually the first semester's grades are somewhat lower than the grades given for the same course in the previous year. Having participated in both the lectures and grade determination in the previous year, I know that it was necessary to drop the test point percentage considerably to enable the awarding of grades somewhat comparable to the ones the students received this year. It is our opinion that the student did not fare any better gradewise under this system, but did come closer to earning the grade he or she received.

As to whether the end product of this type of system will be a better biology student, only time will tell. It is our hope that introducing the freshman student to research labs, presenting seminars, and preparing summaries of scientific articles will stand him or her in good stead throughout his or her biological career. We also hope that it will get the student more deeply involved in the many facets of a professional biologist. We do know that this method gives the student a little more control over the grade that he or she receives and that so far most of the students seem to approve of and even enjoy many of the opportunities for grade improvement.

(The author expresses his thanks to Belinda Shenk for much of the mathematical analysis of the data and for the typing of the manuscript.)

* * * * *

LINGERINGS IN THOUGHT

*Snow
is the stuff
that taunts
and teases
man's creative
patience.*

*What is life
but an apple bud
that can hardly taste of Spring
before becoming the commodity
that ends in someone's pies!*

*Spring
is a good friend
who comes bounding
from afar
to joust you from your doldrums.*

*Not every flower
in any garden
can provide
honey
for every bee.*

- Rita Kohn

TAKE TIME OUT NOW TO PUT IN YOUR INPUT

Committees solicit input and assistance from the membership.

USE THE ENCLOSED PINK INFORMATION BLANK

Make such suggestions and volunteer such assistance as you wish. Return to the Central Office for collation and forwarding to the appropriate chairperson.

BENCH SCALE SEWAGE TREATMENT PLANT
AS AN EXERCISE IN GENERAL MICROBIOLOGY LABORATORY

Norman Woldow, Division of Mathematics and Natural Sciences
Maryville College, St. Louis MO 63141

Bench scale sewage treatment mock-ups have been used as exercises in environmental engineering courses and research for a long time. The problems studied involve rates of bacterial growth and the ability of particular waste water to support growth in a sewage treatment scheme.

The bench scale sewage treatment plant has provided an interesting and informative laboratory exercise in the general microbiology course at Maryville College. The course is aimed primarily at health paraprofessionals.

After the coliform bacteria are covered, and a few basic screening, counting, and identification techniques have been introduced, a three to five gallon dish pan is set aside as the sewage treatment plant. It is filled half way with dirty water, including storm run-off, rat and mouse scats, sour milk, tissues, cigarette butts, and whatever else is at hand. The slop soon takes on the character of the real thing!

Sewage is first subjected to Primary Treatment, the removal of solid wastes. We accomplish this by filtration through window screen, hardware cloth, or cheese cloth. Until a few years ago, many communities provided only primary treatment for their sewerage.

Secondary Treatment by the Activated Sludge Process allows aerobic microorganisms naturally present in the raw sewage to digest organic materials to inorganic compounds. Secondary treatment includes dilution of toxic materials, adjustment of pH to about 7, temperature control at 30 to 35 C, and aeration using an aquarium pump and airstone. Aeration prevents putrefactive anaerobes from overgrowing the system. Anaerobes digest sewage slowly, retard treatment, and produce nauseating odors of decay. As long as aerobic conditions are maintained, the bench scale plant will not smell bad at all.

The secondary treatment is completed when the bacterial cells fall to the bottom forming the Sludge, and the sewage water is clear.

Before it is allowed into the environment, the secondary treatment water should receive Sterilization and perhaps Tertiary Treatment. After suspended solids have settled or been filtered away, the clear water is treated with chlorine, (Cl₂). Municipal plants use gas, but sodium hypochlorite bleach liberates enough chlorine for demonstrations. Chlorination is used to bring coliform counts down to an arbitrary level defined by state or local governments. Tertiary Treatment is the removal of inorganic nutrients like phosphate and nitrate.

Throughout the sewage treatment cycle, students make stains, lactose broth cultures, and plate counts of the treatment water. After successful treatment, the water should show no growth in lactose broth, and should have only a faintly objectionable color and odor.

The exercise provides an important link between the classical microbiology course and issues of the environment. It provides a basis for discussion of sanitation, water pollution, water supply, and public health. While broadening the horizon of class inquiry, the health implications are apparent enough to interest even narrowly motivated students.

FOOD FADS AND MYTHS: A MINICOURSE

John F. Hertner, Department of Biology
Kearney State College, Kearney, Nebraska 68847

As biologists, we are often the ones who are most likely to be expected to confront misinformation and fallacies associated with many natural physiological activities. Over the last few years we have witnessed the resurgence of ignorance in the fields of food, diets and nutrition. The need for separation of documented fact and sound principles from the gray areas of mininterpretation and fallacy as perpetuated by the promoters of pseudoscience has been clearly demonstrated in today's population. Educators and members of the scientific community are well aware of the need (see Barrett 1974 and Rynearson 1974).

The biology faculty at Kearney State College is aware of the student's need for accurate information and has developed a minicourse entitled, "Food Fads and Myths". The course was offered for the first time during the Spring Semester of 1975. The class met for a three hour session one evening a week for five weeks and offered one semester hour of undergraduate credit. The class members were evenly divided between full-time students and part-time continuing education students from the surrounding community.

Three goals for the course were established: First, providing accurate information derived from research findings in the fields of digestive anatomy and physiology, nutrition, and biochemistry. Second, developing a healthy skepticism in the students. Third, developing skills necessary for the critical analysis of popular myths and promotions.

To supplement the development of the skills, a discussion of advertising techniques was included. Each participant made an annotated collection of food and health advertisements clipped from magazines and newspapers. The advertising copy was cataloged as to category of sales technique (e.g., bandwagon, scare, nostalgic, etc.).

Incorporated into the minicourse was the requirement for a presentation of a review of a topic of the student's own choice. The topics available to one considering such a course are diverse. Among those our students covered were: megavitamin therapy, zen macrobiotic diets, the Stillman and Atkin's diets, "organic foods:", the Rodale Press, Carlton Fredericks, etc. The instructor maintained impartiality during the reviews. The students critically analyzed the subjects and drew their own conclusions.

Information pertinent to the subjects discussed was derived from FDA consumer publications, USDA information monographs, many reputable professional journals (e.g., Journal of the American Medical Association, Journal of Nutrition Education, American Journal of Clinical Nutrition, The Lancet, etc.), and appropriate texts. The assigned reading included three monographs by K.G. Neal (1974 a,b,c). The course was received enthusiastically by the students and the department tentatively plans to offer the course on a yearly or bi-yearly basis.

LITERATURE CITED

1. Barret, S. J. 1974. "The politics of health nonsense." The American Biology Teacher 36(8);508-511.
2. Neal, K. G. 1974a. Digestive systems. Elot Publishing Co. Long Beach, CA 16pp.
3. Neal, K. G. 1974b. Nutrition. Elot Publishing Co. Long Beach, CA 40pp.
4. Neal, K. G. 1974c. Vitamins and minerals. Elot Publishing Co. Long Beach, CA 23pp.
5. Rynearson, E. H. 1974. "Americans love hogwash." Nutrition Reviews 32(suppl. 1) 1-14.

HAVE YOU HEARD ABOUT?

TRAVEL SEMINARS FROM DRAKE UNIVERSITY Two travel seminars will be offered in May and June for which graduate or undergraduate credit will be available.

May 18 - June 5 - Egypt, Israel, Turkey and Greece
June 7 - June 28 - Greece, Yugoslavia and Italy

Historical, Archaeological, Biological, Environmental sites and sights. And definitely FUN. The cost for each trip is approximately \$1450.00 from Chicago. For further information write R.J. Vanden Branden, Drake University, Des Moines, IA 50311.

TRAVEL//STUDY PROGRAM IN THE WESTERN UNITED STATES Southern Illinois University, Department of Zoology and Division of Continuous Education are offering a Desert, Mountain, and Marine Ecology seminar from May 14 - June 13. The cost will be approximately \$400.00, and three semester hours of credit will be given. For further information and applications write Dr. Bruce Petersen, Department of Zoology, Southern Illinois University, Carbondale, IL 62901. Deadline for applications is March 1.

THE PAST AND THE FUTURE The North Dakota and Minnesota Academies of Science are holding a joint Bicentennial meeting April 30 and May 1 in Fargo-Moorhead. Major speakers are Dr. George Wald, Nobel laureate from Harvard, and Dr. Kenneth Watt, a well-known systems ecologist from the University of California (Davis). Don Scoby, President of the North Dakota Academy, and our program chairperson for 1977, has extended an invitation to all AMCBT members to attend and submit papers for presentations. Preregistration forms are available from Dr. Gary Clambey, Botany Department, North Dakota State University, Fargo, ND 58102.

DENDROCHRONOLOGY Interested in including an exercise on this in one of your laboratories? An excellent simulation including diagrams of growth rings from trees, old dwellings, etc., is available as self-administered individual study kit. The cost for the Tree-Ring Kit is \$1.00 each or 30 kits for \$14.95. Write Tecolote Press, Inc., P.O. Box 217, Glenwood, NM 88309.

ENERGY CALENDAR A 1976 Family Energy Watch Calendar has been prepared by the Oregon Department of Energy with Federal Energy Administration assistance. The calendar is loaded with energy facts and conservation hints. Send seventy-five cents (75¢) to; The State of Oregon Department of Energy, 528 Cottage St. NE Salem, OR 97310

ASSOCIATION NEWS

AMCBT MEMBER NABT PRESIDENT - ELECT Jack L. Carter of Colorado College has been elected to the Presidency-elect of the National Association of Biology Teachers. Jack has been a member of AMCBT for many years and has served NABT in many capacities. Most recently he served as editor of The American Biology Teacher.

1977 MEETING The Steering Committee has made a tentative selection of place and date for the 21st Annual Meeting. Monmouth College, Monmouth, Illinois, has extended an invitation to the organization. Tentative plans are to hold the meeting there on October 7-8, 1977.

P O S I T I O N S

Reply to the position number in care of AMCBT Central Office. Service is free to members. Others may use the service for a fee of \$1.00 per line of copy for each issue.

OPEN

7604 GRADUATING SENIOR (pass this on to your students) for FULL-TIME TEACHING LABORATORY ASSISTANT - Duties will include: instructing laboratory sections, preparing laboratory materials and assisting the course instructors with course procedures in a human values-related biology course for non-majors. Send detailed curriculum *vita* by March 10, 1976 to Janice C. Kemp, Instructor of Biology, St. Mary's College, Notre Dame, IN 46556.

WANTED

7601 GENERAL BIOLOGIST Master's degree, 7 yrs teaching experience, sec., coll., and continuing ed. Interested in: biology for the non-major, science and human values, interdisciplinary science, methods, anatomy and physiology. Presently on temp. appt.

7602 SUMMER 1976, GENERAL BIOLOGIST Doctorate equivalent, 20+ years coll. teaching. Interested in biology for the non-major, science and society, methods, physiology. Experience includes industrial research, development of teaching materials, workshop direction.

7603 BIOLOGIST Master's, 7 yrs enthusiastic teaching exp. in 4 yr college. Major interest in Aquatic and Marine Ecology. Have taught Zool, Invert, Ent, Ichthy and Herp, Ecology, Limn, Env Bio, Anim Beh, Water Qual Res, Anat and Phys, Field Stud in Mar Ecol.

W E ' L L S H A R E

NEED INFORMATION ON ENERGY? A speakers kit, "Speaking of Energy. . .", has been made available to the Association by the Federal Energy Administration. The kit would be useful in preparing talks for community organization, supplying factual and graphical material for course syllabi, and other uses which only you may think of. The kit includes a list of suggested points and a fact sheet for each of the following areas: What is the Energy Problem?, Coal, Outer Continental Shelf, Alternate Fuels (Solar, geothermal, synthetic fuels, oil shale), Utilities, Conservation, and Regional Material. In addition there is a slide presentation consisting of fourteen slides and related script. A list of publications by the Federal Energy Administration is also included.

This kit, in the form of a loose leaf notebook, will be made available to any member of the Association requesting it. Loans will be made on a first-come - first-served basis. Write the Central Office.

. . . No fact is so simple that it is not harder to believe than to doubt at the first presentation. Equally, there is nothing so mighty or so marvellous that the wonder it evokes does not tend to diminish in time. . . . So has satiety blunted the appetite of our eyes. Desist, therefore, from thrusting out reasoning from your mind because of its disconcerting novelty. Weigh it, rather, with discerning judgment. Then, if it seems to you true, give in. If it is false, gird yourself to oppose it.

Lucretius

BIOLOGY: NEW INTERFACES

THE 20th ANNUAL MEETING

DRAKE UNIVERSITY, DES MOINES, IOWA

OCTOBER 1-2, 1976

LONGEST BINOMIAL? It has been rumored that the green sea urchin is handicapped with the longest binomial in the biotic world - *STRONGYLOCENTROTUS DROEBACHIENSIS*. So you know of any which equal or exceed this moniker. If so, please submit to the Central Office in time for the next issue of *MIDWEST BIOSCENE*

A NOTE OF APPRECIATION The editor wishes to acknowledge the assistance of the several individuals in the preparation of *MIDWEST BIOSCENE*. The publication would not exist without them.

to Pam Flori - for the general typing and layout of each issue.

to Debbie Olsen - for mimeographing, collating, folding, addressing and stuffing.

to Judy Carlock - for typing the stencils.

to Roni Spears - for special help with this February issue.

PUBLICATION DATES Copy for *MIDWEST BIOSCENE* should be submitted according to the following schedule: May issue by April 10, September issue by July 10, November issue by October 10, February issue by January 10. In addition to articles, remember that notes regarding positions, requests for information, information which will be shared, letters to the Editor are all desired. Formal articles may concern reviews of special areas, new programs, workable laboratory experiments, teaching techniques, etc. Only you, the contributing member, can make the publication of value to the membership.

SIGN UP A COLLEAGUE TODAY The membership campaign initiated last spring has brought in many new members from almost every state. Help to keep our association viable. New members, joining now, will be added to the membership role immediately, but their dues will be applied to the year beginning July 1, 1976. Help them take advantage of this bargain.

-----Detach Here-----

Application for Membership
ASSOCIATION OF MIDWESTERN COLLEGE BIOLOGY TEACHERS

Regular Member (\$6.00) Retired Member (\$3.00) New Renewal
Dues payable July 1

Name _____ Date _____

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