academic records included no plant taxonomy. Students were woefully unable to identify plants for their "Independent Projects" in the department, and, moreover, they considered me an incompetent consultant because of my inability to identify a poorly pressed leaf or leaflet which they presented to me, concluding that they didn't want to take a course from a prof who didn't know anything. I felt offering a Taxonomy course was a personal challenge to me, an opportunity to extend my own knowledge and, at the same time, make some modest contributions to our herbarium. The January Interim seemed ideal because few courses with formal lab components were offered then, meaning that space was generously available. Mounted specimens could be spread out on tables for long periods of time. In fact, three labs were involved, one for regular lab work, one for herbarium displays and the third for practical exams. Moreover, in the Interim, the time of the students and the instructor could be used more flexible than during the semester as this would be the only course in which they would be involved at the time. Lectures, labs or demonstrations could be intermixed without concern for scheduling.

Organization of the Course

The more formal introductory portion of the course was organized around four problems; photocopied sheets and lab materials were used. The widely divergent backgrounds of the students made it imperative that the material be basic lest frustration be encountered at the outset. Below are summaries of the contents of the four problems:

1. How are floral features useful in identification and classification? Frozen lily buds, greenhouse grown tulips, paper white narcissus, sunflowers, wheat, oats, sweet peas, garden peas, beans, squash, etc. were used.

2. How are leaves used in taxonomy? Various greenhouse materials and pressed specimens were used, such as elm, maple, rose, Tradescantia, barley, oats.

3. The use of stems, including modified stems: elm, maple, catalpa, walnut, lilac, onion, quack grass, etc.

4. How are less obvious features sometimes involved? This topic included roots, fruits (many from the produce department of the grocery store), hairs, glands, etc.

The objective of the introductory material was to make the instructor as unnecessary as possible for the subsequent lab identifications on which the students worked at their own pace. In this part of the course, each student identified 40 plants, using herbarium materials, preserved specimens, and 2x2 slides. Needless to say, this entailed a great deal of summer collecting and photographing on my part. Report slips were provided, on which the student recorded the numbers he/she pursued in the key and also the reference used for the confirmation of the identification. Confirmation from herbarium material could keep track of the progress of each student.

Several other activities were scheduled during the month, including a day-long excursion to the Herbarium, Greenhouse and Museum of Natural History of the University of Minnesota, the Minnesota Landscape Arboretum, and Como Park Conservatory in St. Paul. Each student also worked on an individual project, such as a teaching model, a museum-type display, or a report and also had the experience of mounting a specimen which was then entered into our herbarium.

IDEAS FROM THE NORTH COUNTRY
Harold W. Hansen, St. Olaf College, Northfield, Minnesota
- One of the most interesting projects which my students in Plant Physiology undertook was excising cotyledons at various stages of growth to determine the influence of the cotyledon on growth. They used soybeans, but any plant with large cotyledon which emerge from the soil could be used such as squash, cucumber, sunflower or garden bean. The basic plan was to remove the cotyledons on the day of emergence from one group of plants, on D+1 for another, etc., ultimately making a comparison with a control group. The effects were very clear, and a fine pictorial record could be made, lining the uprooted plants up on a sheet of paper, using the cotyledonary node as a reference point. Some interesting variations also suggest themselves, such as removing one cotyledon, the distal halves of one or both cotyledons, covering cotyledons with foil to block photosynthetic activity or painting the cotyledon with an inhibitor of photosynthesis. (The idea for this work came from Lane and Hesketh. 1977. Cotyledon Photosynthesis During Seedling Growth of Cotton, Gossypium hirsutum L. Amer. J. Bot. 64(6):786-790. 1977.)

- Rubber cement may be used in the making of a stomate model, gluing an extra thickness of balloon rubber to the surface of a balloon which simulates a guard cell. One balloon is carefully split lengthwise and fastened to a piece of cardboard; an intact balloon is similarly fastened down with clips (paper clips, spring clips, even clothes pins). This is essential because the rubber tends to become unmanageable when coated with the cement. Coat the exposed surfaces of both with ordinary rubber cement and allow to dry. Now match the two coated surfaces together. To complete the model, make another so you have a pair of "guard cells." Infl ate and note that the thicker surface is toward the stomate and that the increase in pressure opens the "stomate." The model may be prepared and used as a demonstration, examples may be given randomly to students to inflate and compare or students may prepare the model "from scratch."

TEAM-TEACHING GENERAL BIOLOGY

Dr. Laddie Bicak and Dr. Linda Spessard, Kearney State College, Kearney, Nebraska

INTRODUCTION

General Biology 103 in Kearney State College is described as a study of basic biological principles. This is a rather concise statement but one that accurately implies the purpose of the course, that is, to have students learn these basic principles as they relate to human and environmental conservation.

Biology 103 is a general studies course and is used by non-science students to meet part of their science requirements in a degree program. Students majoring in biology may take the course for personal reasons, and it may be counted in the major's biology program as an elective.

In the past several years, the course has been offered in other than a team-teaching/lecture laboratory format. Earlier, it was offered in several small lecture sessions with accompanying laboratory sections. This plan required many instructors and ultimately resulted in a budgetary problem as well as reducing the number of upper division courses offered. For several years the course was taught as an audio-tutorial (A-T) course. This format was very successful and provided a choice for students between the traditional approach and the A-T. In recent years students have tended to register in growing numbers for the team-teaching/lecture laboratory classes. What precisely caused this shift is not known. Perhaps the students of today are looking for more structure in a course rather than the independence offered by the A-T classes. At present we offer no A-T classes. All Biology 103 classes are