

Geology . . .

(Continued from Page 4)

our planets have fairly circular orbits, they exist in basically the same plane, and, except for one or two unexplainable exceptions, they even rotate on their axes in the same direction.

He will then delve into what is known about the composition of the planets. At this time he will also present theories on the origins of the solar system. Goles stated he would be "trying to keep fairly well separated conflicting theories and observations...and to some degree to try to resolve them." He will be dealing with families of theories that are "more nearly correct." During the course, his primary objective will be to develop in students a "healthily critical view" of the theories and to get them "thinking on their own."

The next subject will be meteorites. Until the Apollo flights these were "the only bona fide, well-documented subjects for data" scientists had. Goles plans to discuss their compositions and origins. This time will also be spent focussing on closely related theories; slowly narrowing down the field.

Study of the moon will follow that segment of the course, and he plans to spend half the term dealing with earth's satellites. He will start off once again with physical description, the rocks and surface structure. That will lead into the theories that have evolved about its history. Goles calls this a "fuzzy" area, one of conflicting theories, and a "very divergent" region. The moon's history will then be related to the history of the earth. The final part of the course will be a tying together of all the theories discussed, as well as showing lateral developments.

Next year much of what Goles has been teaching in his first course will be added to a more detailed discussion on the moon, its effects on the earth, and its operations as a separate force. Goles "now feels freer" to deal with Geology 301 in a more "geological way." He adds, "the courses will be less divergent...flow more easily."

Carol McMullen

Biology

Study the life and times of birds, fish, and insects

Bio 107
Natural History of Birds

Spring is a time many students like to enjoy the sun, the flowers, the birds, and the outdoors altogether. Bio 107 (TLN 1231), **Natural History of Birds**, is a course intended to appeal to those who would like to have an opportunity to learn something of the biology of birds.

Herbert Wisner will give three scheduled lectures each week, during which attention will be given to identification, classification, observation, migration distribution, breeding habits, food, censusing, banding, life history, behavior, and ecology.

Another important part of the course will be actual field experience in identification. Size of the class will determine how this will be done, but the present plan is to assign each person to a group of 10 to 15 students, for two-hour guided field trips in alternate weeks.

Preference in enrollment will be given to those who have had little to no previous experience in bird study.

A pair of binoculars is almost essential to the satisfactory study of birds. They may be purchased for as little as \$15-20 and as much as \$200-\$300.

Betsy Caren

Bio 102
Fish - A Natural Resource

For students who are generally concerned with learning and protecting our environment, Bio 102, **Fish, a Natural Resource**, may be a course to consider.

Robert Morris will introduce the major groups of fishes and their distribution, physical factors governing distributions, life cycles of representative fishes, and artificial propagation and pondfish culture. The class

will learn how to determine the age of fish, methods in food habit studies, aquaria and their balance, and sensory systems of fishes.

The class will study the natural populations of commercial importance, including the various methods of harvest and processing that it used. The temperature, salinity and oxygen in the water affects the fish distribution and these factors will be considered in the course study.

Fish - A Natural Resource is a 4-credit non-majors course and has no pre-requisites. It meets at 1:30 MWF in 123 Science. There is also a one-hour lab-discussion period required for the course, that meets once per week. Reading materials will be largely confined to mimeographed handouts.

Betsy Caren

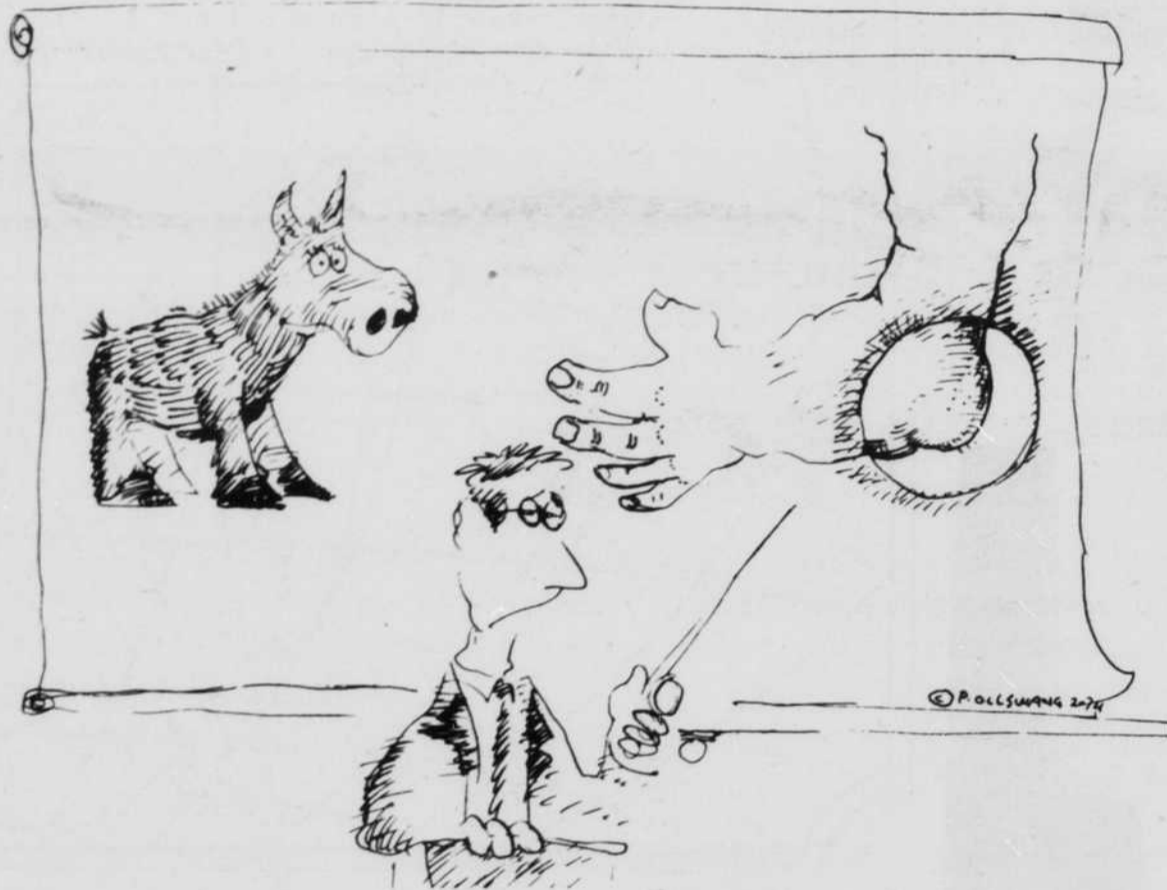
Bio 106
Evolution and Adaptation in the Small World of Insects

It's a small, small world. To discover how insects tell time and the life and times of mosquitoes Bio 106, **Evolution and Adaptation in the Small World of Insects** describes their world.

William Bradshaw says the emphasis will be on thinking a few problems well through. He tries to teach his students how to think and to sort through intellectual problems. He has no set, limited format. He would like to talk basically on information that the students find most interested and entertaining.

Some of the suggested topics for lecture and discussion are, who's who among the insects; how insects see, breathe and develop; silk and its many uses; hibernation and migration, and how insects spread disease.

Betsy Caren



Bio 101
Biology, Ethics and Society

Genetics, environmental hazards, human evolution, and psychic controls are the main areas of study in Bio 101 (TLN 1171) **Biology, Ethics and Society**. Edward Novitski will teach this introductory course that will discuss chromosome anomalies and biological basis of inheritance under the heading of genes and behavior. The nuclear controversy and the effects of radiation will be covered an area of particular concern to our nation and its people today.

The Russian experience and the issues in the United States will be studied in terms of genetics and the social structure. Aspects of human evolution will be dealt with, including polymorphism and genes and people.

When studying genetic therapy, the topics of transplantation, eugenics and euphenics will be brought up for consideration. The last area to be studied is the topic of Psychic Controls in relation to behavior research and modification of behavior.

Biology, Ethics, and Society (3 credits) will emphasize the elementary biological principles necessary for understanding of current problems. It is primarily a course for non-majors and has no prerequisites. There is one required text: Baer, **Heredity and Society**, 1973. The course meets at 8:30 a.m. MWF in 123 Sc.

Betsy Caren

Bio 105
Growth, Reproduction, and Heredity

The study of those aspects of growth, reproduction, and heredity, that are common to all living things is focused in Bio 105, **Growth, Reproduction, and Heredity**. The course will be concentrated on the molecular basis of some biological processes.

George Streisinger will discuss what a human body is made of, DNA: its duplication, its relationships with protein, and its environmental influences. He will explain how hereditary material is organized and its function. The nature and mode of action of some antibiotics and poisons will be discussed in terms of environmental influences on growth.

Explanations will be phrased in terms of experimental observations and will be at the level of the molecules that play important roles in living systems.

Growth, Reproduction, and Heredity (4 credits) will be held at 11:30 MWF in 16 Science. There is a two-hour lab-discussion session per week. The text for the course is Ann Roller, "Discovering the Basis of Life; An Introduction to Molecular Biology." In addition, selected articles from the journal **Scientific American** may be required, and fairly complete lecture notes will be made available. The class is open to non-majors.

Betsy Caren

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