

**From our reporters at the meeting of the American Association
for the Advancement of Science in Washington last week**

Saving desert fish

The building boom in the U.S. Southwest has brought a tremendous demand for water in an area where water is scarce. As a result, says Edwin P. Pister of the California Department of Fish and Game, desert fish inhabiting scattered ponds have suffered severe degradation of their habitats. During the past 35 years three species and eight subspecies have become extinct. At least 50 species are considered endangered.

Pister described the efforts of the Desert Fishes Council, formed in 1971 by Federal and local resource managers, to rescue endangered desert fish. The council's methods include hydrologic studies, water use surveillance, location of transplant sites and refuges for fish, land reclassification and legal action. So far, he reports, they have succeeded in saving at least one species and have made "substantial progress" toward rescuing others.

Making buds dormant

As winter approaches, the buds of many plants become dormant. Growth ceases and they may develop a protective covering. Studies have suggested that the shortened days are what cue plant buds to become dormant and that the sensors to detect changes in length of day are located in the leaves.

How the message to begin dormancy travels from the leaves to the buds remains to be settled, says Larry D. Noodén of the University of Michigan. At first it was thought that the shorter days induced the plant to produce a growth inhibitor, abscisic acid (ABA), but now the process appears more complicated. When gas-liquid chromatography was applied to analyze the extracts of leaves, it was found that short days did not increase the levels of ABA in buds. Instead, it looks as if short days induce dormancy by inhibiting production of growth-promoting hormones, such as indoleacetic acid and gibberellic acid. Before dormancy can end, a period of cold of about 10 to 30 days is required. When longer days come, says Noodén, the level of gibberellins increases and ABA decreases.

Sex among the shore birds

Just about every type of mating system is found among birds, from promiscuity to monogamy. But of these systems, says Donald A. Jenni of the University of Montana, true polyandry (in which a single female mates with and forms bonds with more than one male at the same time) is extremely rare. Furthermore, the problem of determining just what species are polyandrous is confused by the tendency of some researchers to assume a bird society is polyandrous if there is reversal of the usual sex roles.

For six years, Jenni has been studying one bird species which he says is truly polyandrous: the Central American Jacana. Among these flightless lake dwellers, the female is dominant and outweighs the male almost two-to-one. The male takes care of most of the traditionally female duties. Sex-reversal is so complete, says Jenni, that "I keep expecting to see the male lay eggs."

Growing up normal

Most child psychologists and educators feel that a variety of environmental stimuli during the first year of life are necessary for normal mental development and growth. This popular assumption, however, may be incorrect, says James Kagan of Harvard University. There are certain species-specific behaviors, he says, that are inherent and will eventually appear.

Kagan's conclusion is based on observations of infants and children living in isolated, subsistence farming villages in Guatemala. The infants receive very little attention or stimulation during the first year of life. As they grow up they appear to be mentally retarded. They are listless and show little interest in what is going on around them. But, says Kagan, by the time they are 11 years old these children have become as active and alert as a typical American middle-class child of the same age. Data from tests given to the Guatemalan infants, says Kagan, indicate that environmental factors can slow down or speed up the emergence of basic intellectual competences, but the capabilities for symbolism, inference and memory eventually emerge in sturdy form in all children who grow up in a natural environment.

Smelling your way home

Various migratory fish such as salmon and trout go back to their home streams to spawn. It is believed that one of the cues such fish use to find their homes is the particular odor of that stream. "We believe," says Dale M. Madison of the University of Wisconsin, "that each stream has characteristic odors that the fish learns—or is imprinted to—early in life and remembers on into its adult life." If this is true, he says, it should be possible to raise fish in a hatchery and imprint them artificially to some chemical odor. Then, after releasing them into the lake or ocean, they can be attracted to central locations simply by adding the imprinting chemical to the water.

To test this theory, Madison and a group of researchers imprinted and released thousands of tagged salmon into Lake Michigan. An equal number of unimprinted controls were released at the same time. So far, reports Madison, 20 times as many imprinted as control fish have returned to the experimental site to spawn.

Recommendations for psychosurgery

In recent years much time and effort has been spent discussing the ethical, legal and social issues of psychosurgery. In most instances these discussions helped focus public attention on the issues but offered little in the way of concrete suggestions. At the AAAS symposium on behavior control, Herbert G. Vaughan Jr. of Albert Einstein College of Medicine did make some solid recommendations. Psychosurgery, he said, should be considered experimental and subject to strict standards and controls. Because available data on the outcome of psychosurgical procedures are inadequate to permit comparison of their efficacy and safety with alternate procedures, Vaughan suggests the establishment of a central registry to record in detail all such operations.