

life sciences notes

ECOLOGY

Grasslands study kicks off IBP research

The National Science Foundation has released details of a grasslands ecology study that is one of the few United States contributions to the International Biological Program to survive budget cutting this year (SN: 6/1, p. 517).

An NSF grant of \$350,000 will go to Colorado State University in Fort Collins to begin a five-year investigation of the interdependence of life forms in the prairie. The study will be integrated with later grasslands work in other participating nations. The grasslands program is the first in a series of IBP ecosystem investigations that will take in tundra, desert, and coniferous, deciduous, and tropical forests.

The study site will be in the short-grass prairie near Nunn, Colo., and will include the 15,000-acre Central Plains Experiment Station and a 110,000-acre section of the Pawnee National Grassland. The ecosystem will be analyzed from the standpoint of non-biological components such as climate and soil, of plants as food producing members of the system, of animals as food consumers and of microorganisms as decomposers.

POLLUTION

Ozone inhibits pollen germination

It is known that ozone, an air pollutant, is capable of damaging the leaves of certain plants. Dr. William A. Feder of the University of Massachusetts in Waltham reports in the June 7 SCIENCE that ozone also is capable of inhibiting the germination of pollen granules.

Ozone-sensitive strains of tobacco were grown in ozone free air. When the plants flowered, pollen was removed, exposed to 0.1 part per million ozone, and germinated. Germination was reduced 40 to 50 percent that of controls after 5.5 hours of exposure. Pollen tubule growth of those grains which did germinate averaged about half the length of control tubule growth; the short tubules failed to fertilize the recipient plants.

Dr. Feder says the ozone concentration used in the experiments is about that found as pollution at his monitoring station 12 miles from Boston. He says through a reduction in the viability of pollen, ozone and similar oxidant-like pollutants "may be exerting a subtle stress on plant populations in the Northeast."

TOXINS

Octopus venom isolated

A small octopus of Australia's Great Barrier Reef holds the distinction of being the only known poisonous cephalopod. *Octopus maculosus*, the blue ringed octopus, has been credited with killing several humans who handled it, a situation which has led to investigation of the species and its toxin. Zoologists at Queensland University have isolated the venom and now are attempting to identify it in an effort to produce an antivenin.

Reporting on the octopus in the May MEDICAL JOURNAL OF AUSTRALIA, Drs. W. H. Lane and Struan Sutherland of the Commonwealth Serum Laboratories in Melbourne say no land creature possesses a venom of comparably severe toxicity. They say symptoms of in-

toxication occur within five to ten minutes of a bite; death may occur within an hour. The victim is generally unaware of being bitten. The first signs are weakness, numbness around the face and difficulty in breathing.

Paralysis of breathing ensues and may result in death. The toxin, extracted from the large salivary glands, affects both nerve-to-muscle connections and conductivity in the nerve fiber.

DRUGS

Meprobamate back on honor roll

Meprobamate, the tranquilizer better known under the trade names of Miltown and Equanil, fell into some disrepute in 1965 when the Food and Drug Administration moved to include the substance under the Drug Abuse Control Amendments of 1965. The government contended, and still does, that meprobamate has a significant potential for abuse and therefore should be subject to the controls on sales prescribed by the legislation.

Perhaps, only coincidentally, meprobamate was dropped from the 1965 edition of semi-official list of drugs of choice of the United States Pharmacopeia. Now USP announces that meprobamate will be re-listed in the 1970 edition (the next edition after 1965). "It has been concluded," the USP announcement says, "that meprobamate is a valuable therapeutic agent. This decision was based on its efficacy and safety, and its broad and sustained use over a long period of time by the medical profession."

PESTICIDES

Organophosphate antidote distributed

The National Communicable Disease Center in Atlanta, Ga., is distributing nearly 7,000 doses of the antidote 2-PAM to poison control centers across the nation.

The antidote is effective in cases of poisoning by organophosphate pesticides such as the deadly parathion. These poisons act on the nerve-muscle junctions to cause prolonged stimulation of the muscle by the nerve, spasms and in some cases death. The antidote blocks this effect. The center says the doses are being sent in an effort to encourage centers to keep 2-PAM on hand.

EXOBIOLGY

Antarctica and Mars

A Mars lander that sought evidence of life would have little chance of coming down by accident on an area rich in microorganisms. Such is the conclusion of a three-man team, led by Dr. Roy E. Cameron of the California Institute of Technology, after studying conditions in Antarctic valleys.

Antarctica was used as a standard of comparison because conditions there—in certain valleys that are not covered with ice—are the nearest thing on earth to what is expected on Mars.

Despite the Mars-like barrenness, the expedition found wet spots and some places where microscopic life forms were abundant. To find similar spots on Mars, they say, a lander would have to be able to search intelligently.

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