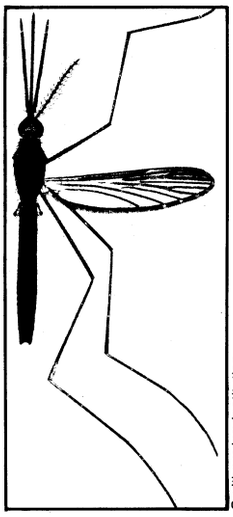
BIOLOGY

One more mosquito for the collection


Smithsonian Institution

A malaria-carrying mosquito from Thailand has been identified as a new species by scientists at the Smithsonian Institution's Museum of Natural History. Because the insect is thought to be a major, and dire, transmitter of malaria in Thailand, Cambodia and Vietnam, it has been named *Anopheles dirus*. It differs from a closely related species in its feeding behavior and the band pattern on its wings. Field studies indicate that its favorite breeding spots are water-filled elephant footprints along forest fringes.

In the past 15 years, more than 125 species of mosquito have been discovered by entomologists at the museum. Altogether, more than 1,200 types of mosquito, carrying malaria or other diseases, annually kill or debilitate several hundred million people.

Bird watching with tape recorder

Calls converted into "voiceprints" can be used to follow individual birds and gain insight into a population's numbers, habitat, movements and lifespan. Jerry Verner of the USDA Forest Service Pacific Southwest Station hopes to apply that technique to monitor the Southern bald eagle, the American perigrine falcon and the spotted owl. "If voiceprinting works in our studies, it could greatly reduce our need to capture and band birds. This would be an especially important advantage in our studies of rare, threatened and endangered birds, in that it would eliminate the stress of capture," Verner says.

A voiceprint is made from a tape recorded bird call fed into an audiospectrograph. The resultant tracing, which reflects the volume, pitch and duration of notes in the bird call, differs among individual birds of a population. "A voiceprint can be as accurate in identifying a bird as a fingerprint is for identifying a person," Verner says. The scientists have begun work on the voiceprints of the spotted owl. Because that species is quite sedentary, the investigators believe it should be easy to repeatedly relocate individual birds.

Save the genes

Possibilities for obtaining future food, fiber, energy and medicines from plant and animal products become more and more limited as human activity reduces the variability of forms of life. Scientists at the recent meeting in San Francisco of the American Association for the Advancement of Science stressed the enormity of the task worldwide of preserving plant and animal species and the habitats, especially tropical forests, that they require. William L. Brown of Pioneer Hi-Bred International in Des Moines, Iowa, reviewed U.S. gene resources conservation programs. He finds that microorganism genes are most adequately maintained, partly because bacteria, fungi, algae and other simple organisms can be grown and stored inexpensively with relative ease. Recently, conservation of plant genes has received increased attention, but additional support would go a long way, he says. Current programs for conserving animal genes are "totally inadequate," Brown says. Even among domestic animals, four formerly popular breeds of sheep, two of cow, two of draft horse, one of hog and numerous strains of chicken are in danger of extinction. Brown concludes gene conservation programs are still inadequate to meet current and future needs.

SCIENCE & SOCIETY

Nuclear power and nuclear weapons

"No nuclear fuel cycle which could be commercially deployed in the next few decades would offer more proliferation resistance than that associated with a light-water reactor once-through fuel cycle, in which spent [used] fuel is safeguarded in interim storage facilities and enrichment services are provided by the existing suppliers." If this line sounds familiar it's because it's the one the Carter administration has been touting since it came to town—namely, that it is not prudent or yet necessary to commercially recycle nuclear wastes for fuel conservation.

The opening quote comes from a nine-volume draft report by the Energy Department, issued last month, entitled Nuclear Proliferation and Civilian Nuclear Power (a report of the Nonproliferation Alternative Systems Assessment Program). Not only does it spell out the United States' position for the International Nuclear Fuel Cycle Evaluation — the final report of which is due out in a few months — but it also serves as the planning document for the administration's fiscal year 1981 nuclear research budget. (Congress is due to receive the administration's budget proposals next Monday.)

While conceding that all nuclear-power fuel cycles entail some proliferation risks, the report claims that there are substantial differences in proliferation resistance among many that might be developed by or sold to non-nuclear-weapons states. A shortage of available low-cost uranium to fuel reactors may push nations into encouraging commercialization of breeder reactors (those that make more fuel than they consume) and the reprocessing of used nuclear fuel. But the report warns that both concepts are considerably more vulnerable to the theft of weapons-grade fuel or readily enrichable fuel than the current species of light-water reactors.

The goal should be to make more efficient use of fuel via technical innovation, the report says, and to reduce uranium wastes in milling and enrichment so that recycle can be delayed as long as possible.

Earth Day 80

If April 22, 1970 — Earth Day — quickened the pulse of the environmental movement, then Earth Day 80, announced last week, appears to be planned as a shot in the environmental arm.

In the decade since that nation-wide teach-in on environmental issues, its advocates have stockpiled an impressive list of legislation supporting their principles. Kicked off in 1970 by the National Environmental Policy Act, which requires environmental assessment of proposed federal projects, the Clean Air Act amendments followed later that year, the Federal Water Pollution Act in 1972, the Coastal Zone Management Act in 1972, the Endangered Species Act in 1973 and the Toxic Substances Control Act in 1976, to mention a few.

But, as Earth Day 80 organizers pointed out at a press conference last week, "environmental backlash" is taking its toll on the effectiveness of many measures. Thus, Earth Day 80, planned for April 22, is a "celebration of community based initiative and innovation" and a recognition that "the frontier is gone," says Denis Hayes, organizer of the first Earth Day and director of the Solar Energy Research Institute. It is a realization, he says, that "we have to make accommodations to deal creatively with a world with boundaries."

John McConnell, President of the Earth Society Foundation, crashed the Washington news conference called to announce Earth Day 80. Claiming to have originated the Earth Day concept, he complained that this year's observance will fall on the wrong day. Anniversary observances of the '70 fete have always fallen on the vernal equinox, he said, and this year that's March 20, not April 22.