Briefings

edited by FAYE FLAM

Shooing the Screwworm Fly

Some deft political maneuvering has made it possible for the U.S. Department of Agriculture (USDA) to help Libya eradicate a potentially devastating insect pest. Since last December, the Food and Agriculture Organization (FAO) of the United Nations has been dropping 40 million sterile male screwworm flies (*Cochliomyia hominivorax*) per week over Libya to control the spread of this dangerous fly, whose larvae feed on living flesh and can kill both livestock and humans.

Nasty bite. *The screwworm.*

Although the FAO is orchestrating the $40-million program, the USDA is providing the flies. Because a tense political climate prevents the department from dealing directly with Libya, it is selling the flies (at cost) to the FAO. And even that took an act of Congress; before last year it was illegal to make such technology available to Colonel Muammar al-Qaddafi's regime (see *Science*, 13 July, 1990, p. 117).

The flies are bred in a plant in Mexico and flown by chartered jet to Libya, where they are released in infested areas. The sterile flies outnumber the fertile ones by approximately 10 to 1, and fruitless mating should eventually wipe out the flies.

The strategy was developed in North America, the home of the screwworm, which in the past has caused all sorts of headaches for U.S. cattle ranchers. But after 2 decades of releasing sterile males, USDA scientists have finally won the battle against the pest. Just last February, the United States and Mexico declared that the screwworm had been eradicated from both countries.

Meanwhile the fly got a foothold in North Africa. According to FAO statistics, cattle infestations grew at an alarming rate throughout 1990, rising from 371 new cases in May to nearly 3000 new cases in September. After the eradication program started, the number of new cases dropped dramatically, and only six cases have been reported through April of this year.

Better Dead in Lead

During a ground-penetrating radar scan of a colonial cemetery in St. Mary's City, Maryland's first capital, an anomalous set of blips appeared. In November 1990, preliminary excavations revealed the source: three anonymous lead coffins, believed to hold exceptionally well-preserved 17th-century Marylanders. Now historians and scientists are lining up to study the contents.

"Preservation can be truly astounding" in lead coffins, remarks Henry Miller, director of research for Historic St. Mary's City. The metal provides an unusually good seal, retaining evidence that disappears from ordinary burials in fabric shrouds or wooden coffins. And that could provide a unique window on the world of 300 years ago.

One thing is certain already: the coffins' occupants were people of high status. In England, Henry VIII and other notables had been buried in lead coffins even before the 17th century, but burial in lead was all but unheard of in 17th-century America.

In an effort to identify the coffins' tenants, physical anthropologist Doug Owsley of the Smithsonian Institution and others plan to determine their sex, age, and height and perhaps even reconstruct their faces. Members of Maryland's founding family, the Calverts, are candidates, notes Miller.

Owsley and scientists at NASA's Langley Research Center and elsewhere hope to harvest other kinds of data from the dead. Before the coffins are opened, researchers will probe them with ultrasound, x-rays, and gamma-rays. Next, they will drill holes into each one in the hope of liberating trapped 17th-century air for chemical analysis. Finally, the coffins' contents—wood, fabric, and human remains—will undergo a battery of tests.

Miller hopes the long-sealed coffins will yield soft tissue, from which it might be possible to recover DNA and antibodies. These colonial biomolecules might offer valuable clues to any diseases the unknown Marylanders may have suffered from.

The multipronged coffin studies could begin as early as November, Miller says.

Brotherhood of Lions

A new study of African lions has found that brothers who band together in large prides show a truly lion-hearted brand of brotherly love: They often forfeit their own chances for fathering cubs to allow their brothers to succeed. But the altruistic siblings gain an evolutionary advantage from their sacrifice, says University of Minnesota ecologist Craig Packer, who led the study.

DNA fingerprinting of lions in the Serengeti National Park and in the Ngorongoro Crater of Tanzania revealed that brother lions who stick together in large prides stand a better chance of passing on their family's genes than do brothers who go their separate ways, even when they don't always do the deed themselves. "If the coalition is too large, some of the males will fail to breed," says Packer. But the success of other males in the pride more than compensates, because brothers share about half their genes.

These findings supply further evidence for "kinship theory"—the notion that relatives who act altruistically toward each other improve the odds that their family gene pool will survive, even though such behavior has a price for the individual. While this brand of altruism had been proven in ants, termites, birds, and wolves, it had not been demonstrated in lions.

Now Packer concludes that for lions, too, "fraternité is not egalité."

Animals Animals

Fatherly lion. *Others do without.*

A Brighter Forecast From Kuwait

U.S. scientists are coming back from Kuwait's oil fields with good news for the atmosphere. Airborne observations are putting a lid on scenarios that predicted smoke-induced catastrophes—such as a global climate chill, intense acid rain, or a failure of the monsoons in Asia. None of these now seems likely to occur, according to