



Red fox, major European carrier of rabies, will be slaughtered in 21 countries to eliminate the virus pool.

#### DISEASE CONTROL

## Draining the rabies pool

European countries are planning an all-out war on red fox population, major carriers of hydrophobia virus

Since the end of World War II the red fox population of Europe has been on the rise. The fox is a hardy and adaptable animal and in most respects is able to get along with man's civilization. In addition, trapping of *Vulpes vulpes* has all but ended with a sharp decline in the value of fox pelts.

In one respect man and the fox still clash, however. The fox is the most susceptible animal to rabies yet studied. Large wild fox populations can maintain a pool of the disease from which domestic animals and ultimately humans may become infected.

Rabies in Europe appears to be increasing faster even than the fox population. As a result the governments of 21 European nations have been advised by their own public health officials to kill up to 80 percent of their foxes as the only way to control the disease.

The incidence of rabies found in sampled foxes has been rising steadily since the late 1940's, but in the last 18 months has jumped alarmingly and has crossed borders.

In that period, for instance, Switzerland records 100 cases, primarily in foxes. In recent months a few cases have been reported from France. Both countries had been clear of the disease for a decade.

Germany has been the center of the rabies virus pool.

Member nations of the World Health Organization in the affected areas are being asked to undertake wholesale fox kills in selected areas where rabies is

reported. Experience in Denmark with such a program shows that reduction of fox populations by 70 to 80 percent has reduced the levels of the rabies virus to practically zero.

Disease control depends on the fact that the rabies virus needs a host to live. If foxes are thinned out to the point where an infected animal cannot come across and infect another before he dies, the virus dies too. On the other hand, as long as there are enough foxes that the virus can be easily passed around, there is no way effectively to combat spread of the disease.

Despite the wholesale killing, health officials are confident that enough foxes will remain so that the ecology of the area isn't upset, and also that once the disease is defeated the fox population will rebuild to its former numbers.

The first step in a control program, however, will be an ecologic study of fox populations—infected, transitional, and clean. Scientists will try to determine what effect on the balance of nature a fox-kill will have. Previously it had been believed that foxes ate only rodents, for instance. Already it has been discovered that they eat berries, other vegetable matter and insects as well as rabbits and mice.

Dr. R. K. Sikes, chief of rabies surveillance of the National Communicable Diseases Center in Atlanta, Ga., who has been collaborating with the Europeans, says it will probably be necessary to keep the foxes at the 80 percent reduction level for two or three

years, and thereafter to maintain some population control.

Gassing the animals in their dens will be the weapon of choice, Dr. Sikes says. Fox hunting with firearms has never been popular and is not particularly effective as a control measure. Shooting may be sufficient, however, to maintain the populations in a reduced state.

A gassing technique called Cy-mag is recommended by Dr. Sikes. A powder is sprinkled in the den. It reacts with moisture and traces of carbon monoxide in the air to produce cyanide gas. Dr. Sikes says the powder is easy to handle and the gas is produced almost immediately.

Since the gas is generated on the spot there is little risk of wind dispersion of the deadly poison. The Germans are using a similar agent of their own, Zyklon B. Poisoning is not favored because of the danger to domestic animals such as dogs and because it is more of a hit-or-miss technique.

It is estimated that tens of thousands of European red foxes will have to die if the program is carried out by all 21 nations.

Domestic animals are protected mainly by vaccination. German authorities have resisted this on the grounds that vaccinated animals may serve as carriers of the disease, but Dr. Sikes says there is no evidence of this. Authorities in other countries either are requiring vaccination of pets or are strongly urging it.