



Dangerous Animals

THE MOST dangerous four-footed beasts now living on this continent are not bears or wolves, not moose or bison. For all their size and strength and formidable armament, these claim very few human victims. Man is much more dangerous to them than they are to him.

The really dangerous mammals in North America are the members of the rodent family—rabbits and squirrels and rats. They are menaces to mankind because they are known to be agents in the distribution of at least three dangerous and sometimes fatal diseases: tularemia, typhus fever and bubonic plague.

Rabbits are so characteristically carriers of tularemia that the disease is sometimes called rabbit fever. Tularemia got its name from the fact that it was first discovered in the region of the tule (cattail) swamps of the Pacific coast, but it is now known to be country-wide in its spread. Standard instructions to hunters and all other handlers of wild rabbits include strong admonitions not to handle such game without gloves, and to be sure to burn all fur and other offal. While the normal mode of transmission is by means of the bite of a rabbit flea, tularemia can easily enter the human system directly, through a cut or scratch on the skin.

Rats are the chief carriers of typhus fever. In this country the germs are implanted in human beings by chance bites of rat fleas. In the Old World, it is the body louse that serves as the introducing agent. Recently, rats have taken to stealing long rides on cross-country trucks, and it is claimed that typhus is increasing rapidly in the Southeast as a consequence.

Rats, again, are the horses on which the plague called bubonic chiefly rides, and the bites of their fleas transmit the infection to human beings. However, many other species of rodents, especially

the attractive little ground squirrels in California, have now become reservoirs of the plague. California is really more in dread of the possibility of this visitation than it is of any imaginable earthquake.

Combating rodent-borne diseases by exterminating all rodents is simply beyond practicability. Something can be done to create rodent-free zones around human settlements, but the cost and effort involved in killing all rabbits, all rats and all ground squirrels simply staggers the imagination. Different lines of defense will have to be found.

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PHYSIOLOGY

Study of Sex Cycle Advanced By Grafting Uterine Tissue

BETTER knowledge of the female sex cycle, one of the most important yet least understood of all physiological phenomena, has been achieved by Prof. Joseph E. Markee of Stanford University, through the simple device of making a sample of uterine tissue grow outside the body, where it can be watched, instead of inside, where continuous observation is of course impossible. Results of the researches, which have been going on for twelve years, have been published by the Carnegie Institution of Washington.

Prof. Markee chose as his subject the common rhesus monkey because its sex physiology is quite similar to that of human beings. In particular, the length of the oestrus cycle is the same—28 days in both species.

Pieces of the uterine tissue were grafted onto the eyeballs of a number of female animals. Regularly every four weeks, these pieces of tissue, under control of the same gland secretions that

start and carry through the normal female sex cycle, did the same things that the original tissue in the lining of the uterus was doing. They grew, degenerated, and bled, and all the while they could be closely observed through microscopes trained on the grafted spots. Observation was made the easier in that the monkeys apparently suffered no discomfort or pain.

To hold a monkey's head still while he watched it, Prof. Markee devised a box with a hole fitting around the little animal's neck. It was more or less like a miniature steam-bath cabinet—except that it wasn't hot. The monkeys were easily trained to pop their heads through the holes, and to sit there while the physiologist, with his special microscope, scrutinized the all-important tissue grafts on their eyes.

Many of Prof. Markee's observations confirm what has been conjectured about the changes in the uterine wall during the monthly cycle, though some of them will necessitate changes in pre-existent notions. And all of them have added a wealth of detailed information which has previously been lacking.

Thus far, only the course of the normal female sex cycle has been studied, for of course departures from normal can be better understood and dealt with medically if the norm of good health is first firmly established. The technique, however, lends itself readily to pathological studies if these should appear desirable.

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