NATURE RAMBLINGS by Frank Thone

ZOOLOGY

What Coyotes Eat

EVERYTHING, or very nearly everything, is grist to the mill of the coyote's hungry jaws. Cactus fruits, rattlesnakes, lizards, skunks—these are some of the odd tidbits found during a survey of some thousands of coyote "innerds" by Charles C. Sperry, student of the food habits of animals for the U. S. Biological Survey. But apparently coyotes are not fond of toads. Only one toad was found in the whole collection.

However, these are only oddities in coyote diet. The great bulk of the food of these friendless little wolves of the West, 89 per cent. of it in all, is made of four staples: carrion, 29 per cent.; rabbits, 29 per cent.; other rodents (ground squirrels, prairie dogs, mice, etc.), 17 per cent., and sheep and goats, 14 per cent.

Minor items included birds, 3 per cent.; deer, 2 per cent.; skunk and badger, 2 per cent.; insects, 1 per cent., and vegetable matter, 3 per cent.

These figures, given in the current issue of the *Journal of Mammalogy,* are based on a survey of the total contents of 1,453 coyote stomachs killed in the autumn by government hunters, ranchers and other protectors of game and livestock, and sent to the Biological Survey's laboratories here for study. At other seasons, doubtless the coyote's diet would be found to vary from these proportions.

That the coyote really does have the hard life assigned him by Western tradition is eloquently borne out by the fact that in addition to the 1,453 stomachs containing recognizable food there were 570 that contained only debris and 1,019 that were completely empty. Thus less than half of the total sent to Mr. Sperry for examination indicated a meal recently enough to keep the luckless owners from being hungry.

The sheep-and-goat item would seem to constitute an indictment of the coyote as a stock-robber; although Mr. Sperry adds the qualification that some of the animals eaten may have been found as carcasses. On the other hand, all cattle and horse meat and bones were credited as carrion, since none of this material could be identified as from colts or calves young enough to have been pulled down by the coyotes.

Science News Letter, September 30, 1933

MEDICINE

Ultraviolet Light Detects Ringworm in Kittens

ULTRAVIOLET light is being used in Winnipeg to detect ringworm carriers in the cat population. If Kitty or Tom is carrying the disease, the infected hairs will emit a brilliant greenish light when ultraviolet rays filtered through Wood's glass strike them. The test will disclose the presence of the fungus that causes the disease even in apparently healthy cats.

The importance of determining such carriers is illustrated by a case reported to the Canadian Medical Association by Drs. A. M. Davidson and P. H. Gregory of the University of Manitoba. A little boy developed ringworm about three weeks after being given an apparently healthy kitten for a pet. The ultraviolet light test showed the kitten to be infected, although other tests had failed to do so. Microscopic examination of the fluorescent hairs confirmed the presence of the fungus. Drs. Davidson and Gregory believe it very probable that the boy was infected by the kitten.

Since similar cases may frequently occur, they suggest using the ultraviolet light test on kittens before giving them to children as pets, in order to prevent the disease in the young masters.

Science News Letter, September 30, 1933

PHYSICS

X-Rays Measure Interatomic Distances in Molecules

AN EYE-SUBSTITUTE, of even greater magnifying power than the most powerful microscopes, has enabled scientists to picture the inner structure of molecules. It was described by Dr. Willis C. Pierce of the University of Chicago before the meeting of the American Chemical Society.

The apparatus uses X-rays to determine the distance between atoms in a molecule and the positions of the atoms. It is so sensitive that it will record distances of less than one billionth of an inch but, unfortunately, is applicable only to the simpler types of molecules.

The structure of the benzene molecule, for which many different structures have been proposed theoretically, was determined by Dr. Pierce from direct observation and found to agree with the commonly accepted theory. Distances between chlorine atoms in two compounds were also checked, and found to be three- and six-hundred-millionths of an inch.

"In these experiments," Dr. Pierce explained, "an intense beam of X-rays was passed through a small container of the vaporized substance whose molecules were to be measured. Scattered X-rays passing through a window in the side of the container were detected and their intensity measured by their photographic effect. Atomic distances were determined by calculations from the positions of the peaks in the scattering curve so obtained."

Dr. Pierce said that X-rays have been used for years to determine the distance apart and the positions of atoms in crystals. Prof. Peter Debye, of Leipzig, he said, recently perfected the procedure, used at the University of Chicago, for making similar analyses of single molecules where the molecules are so far apart that any interference effects must be within a single molecule.

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The oldest known medical documents, one dating from 1500 B.C. in Egypt, mention conditions that are identified as cancer.

Archaeologists who have been uncovering the ruins of a capital city in Mesopotamia of 2500 B.C. report that the sanitary arrangements were better than those in Baghdad today.