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The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

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"Life of the Coyote"
Collage Report - U.F.I. S.B. 1935

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LIFE OF THE COYOTE

(CANIS LATRANS SAY)

by

Jack L. Reveal.

UNIVERSITY OF IDAHO, S. B.

SCHOOL OF FORESTRY

- 1935 -

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LIFE OF THE COYOTE
(Canis latrans Say)

Forestry 53

By Jack Reveal

UNIVERSITY OF IDAHO, S.B.,
SCHOOL OF FORESTRY
1935

I worked hard to write this report during
the Christmas holidays of 1934 for our
wildlife course.

It was typed on my dad's old portable
typewriter by hunt-and-peck - a
very frustrating machine to say the least.

It is said, with great wisdom, that
the bones of the last human on Earth
will be picked by a coyote.....

FOREWORD

The Coyote is a source of constant contention among sportsmen and Naturalists. To the sportsman and the agriculturist he is a predator. To the Naturalist he is a part of the "balance of Nature" upon whom no harm should fall.

There are well known and perhaps selfish arguments for both sides. So far neither has won, as testified by the still unvanquished Coyote. The only hope for settlement is broadmindedness. Such is possible through education in which the future game manager, knowing the problems, will play a leading part.

In this paper it was the intention to present an unbiased view. But since most research into the private lives of animals has been conducted by Naturalists, and since the author is one at heart, argument seemingly favoring the Coyote has crept in.

CANIS LATRANS SAY

(L. Canis, a dog; L. ~~Latrans~~, barking; Say 1823)

NOMENCLATURE

Because of the Coyote's extensive range-some three million square miles-
he was christened with many names:

Cuiota, Kyute, Prairie Wolf, American Jackal, Brush Wolf, Cased Wolf,
Little Wolf, Coyote, and five Indian names.

The French Canadian Coyote and the Mexican Coyote live as his common
names. Kyute is still heard in the Southwest and is probably a variation
of the word "Coyote".

"Cased Wolf" is common among some trappers since the skin of the Coyote
is cased rather than skinned open as is the Wolf.

Phylogenetic Classification:

Phylum--Chordata

Sub phylum--Vertebrata

Class--Mammalia

Sub Class--Eutheria

Division--Monodelphia

Order--Carnivora

Sub Order--Fissipedia

Family--Canidae

Genera--Canis

Species--Latrans and fifteen recognized races;

each of which have their own peculiarities and habits.

- nebracensis Merriam. T.L. Brown County, Nebraska
- texanisi Bailey. T.L. 45 miles south west of Corpus Christi, Texas
- lestes Merriam. T.L. Toiyabe Mountains, Nye County, Nevada
- cagottis Smith. Rio Frio, Mexico
- peninsulae Merriam. T.L. Cape St. Lucas, Lower California
- microdon Merriam. T.L. on Rio Grande, Lower California
- estor Merriam. T.L. San Juan County Utah
- jamesi Townsend. T.L. Gulf of California, Mexico
- ochropus Eschscholtz. San Joaquin County, California
- vigilis Merriam. T.L. Manzanillo, Mexico
- cleptiaus Elliott. T.L. Vallecitos, Lower California
- goldmani Merriam. T.L. San Vicente, Mexico
- frustror Woodhouse. T.L. Payne County, Okla.
- mearnsi Merriam. Puina County, Arizona, the Desert Coyote

HISTORY

Early Observations

Although Lewis and Clark and such men as Hugh Monroe must have known of the Coyote as early as 1804, Seton says the earliest reference he can find of the animal is found in F. W. Beechley's Narrative (1831), "Wolves and Foxes were numerous and Cuicotas, or Jackalls, range about the plains at night and prove very destructive to the sleep" (1-p. 355)

James Willard Shultz, writing the biography of Hugh Monroe who, as a representative of the Hudson Bay Company, was among the Blackfeet in 1815, speaks of Monroe witnessing Coyotes about Buffalo Herds.

Since the coming of the first livestock to the plains, the history of the Coyote has been to the story of man's warfare against him, and

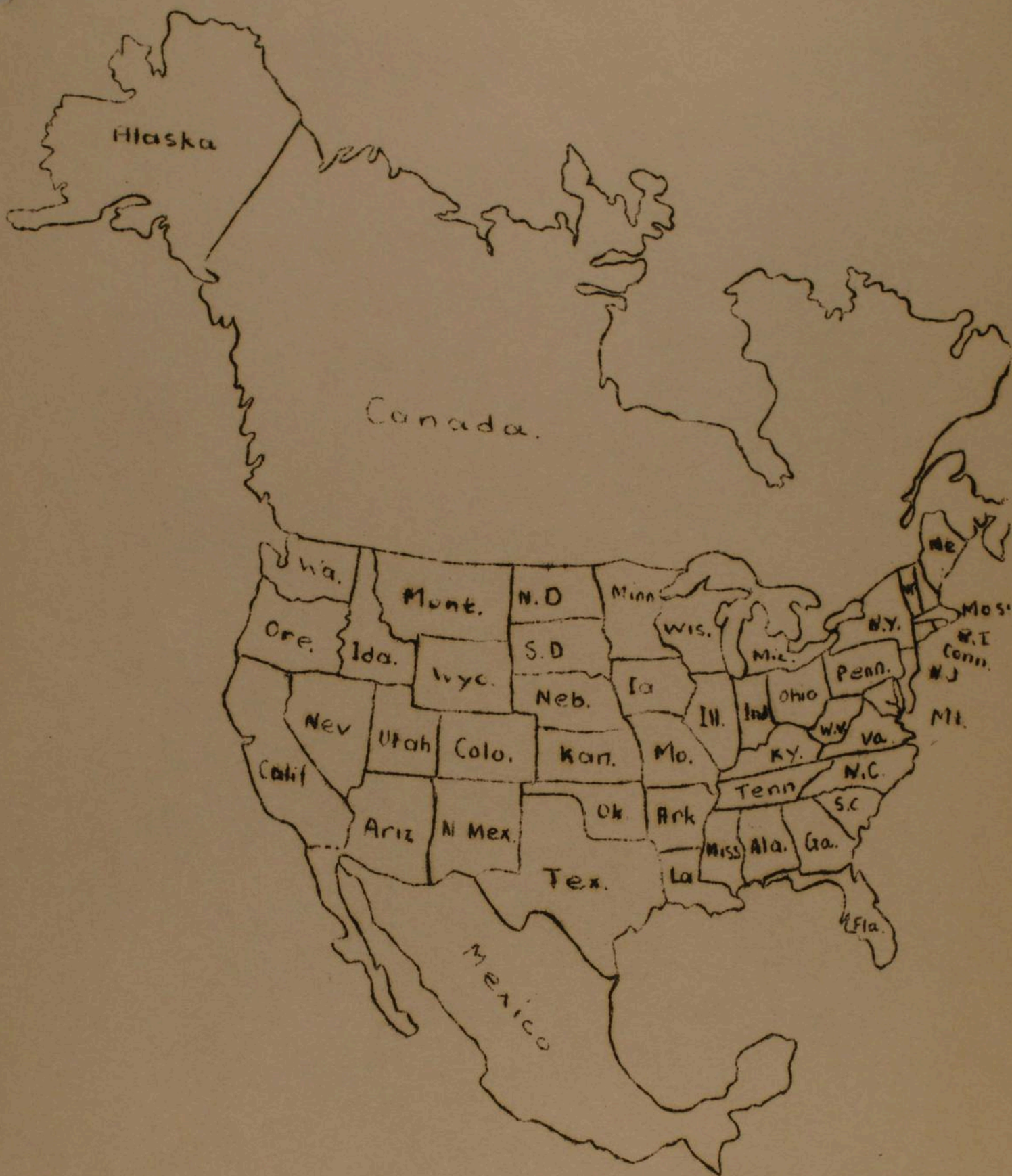


Figure I

actually increased his primitive range.

In the early days, every arm and gun was raised against him-taking an annual kill of many thousands. The loud cries of the rancher brought the forces of the Biological Survey against the coyote on the public lands. Large bounties also stimulated his destruction. California paid a \$5.00 bounty on 71,723 scalps taken in the 18 months ending July 30, 1894. Kansas paid bounties on 19,514 Coyotes in 1904, and in 1907, the Biological Survey took 23,208 Coyotes on 77 National Forests. (1-p 361-364)

With these high figures in mind, let us examine the results:--"In Kansas, where the greatest rate of slaughter took place, 1904, Lantz adds: 'No diminution of numbers resulted'.

" ' Except in a few thickly settled regions, it has thrived upon civilization, and is practically as numerous as it was before settlements began' " . (1-p 365)

Extension of the Coyote Range

Seton says the Coyote has actually increased its range in some parts of the west despite the strenuous^{ous} action against them. Because of the pressure exerted by civilization, he moved into regions unknown to him.

In Summary

The Coyote was primarily a creature of the grassy plains of the north and the deserts of the southwest.

Civilization, though it caused a decrease in Coyote numbers, forced the inhabitation of remote forest regions as far north as the Arctic Circle.

The late spread of the coyote was caused mainly by the reduction of protection and cover in civilized regions rather than lack of food.

Coyotes can live any place where there are plenty of rodents, protective cover, and not too severe winters.

DESCRIPTION OF SPECIES

As in the entire Dog family, the male is the larger sex.

Seton gives extensive notes on size and weights of specimens: a Winnipeg specimen (female): length-snout to tail bone tip, 4' - 1''; tail 1' - 4 $\frac{1}{2}$ ''; hind foot, 8''; height at shoulders, 1' - 9''; weight, 25 pounds. A Saskatchewan male: head and body, 2' - 9 $\frac{1}{2}$ ''; tail, 13''; hind foot, 7 $\frac{3}{4}$ ''; weight 42 pounds. (1 pp 355-56)

Average weights are 26 $\frac{1}{2}$ pounds for males and 22 $\frac{1}{2}$ for females. A specimen (male) from Calgary, however, weighed 46 pounds.

The Coyote is similar to the Gray Wolf but is easily distinguished from his larger cousin since he is smaller and more slender, with fox-like muzzle and ears, and is a warmer sienna color. At a distance, the wolf is grayish with a slender tail, held high, while the coyote is yellowish with a heavy low-hanging tail. (1 p 355)

Seton gives a hair-for-hair description of the coyote (which varies largely with the species) and then writes:

"The above color description fits word for word---the typical male Gray Wolf---the only difference is in comparing skins of the Gray Wolf and the Coyote is in the under--fur of the back, which is usually a gray-brown in the former, and sienna-brown in the latter---we must look to the size of the animal, with its canial and dental character for reliable diagnoses." (1 p 356)

Coyotes have become abundant in remote regions and will thrive wherever there are plenty of rabbits and the winters are not too severe.

Seton reports the Coyote appearing in 1907 as far north as Fort Mc Kay on the Athabaska, the south shores of the Great Slave Lake, and the Arctic Red River within one hundred miles of the Arctic Circle.

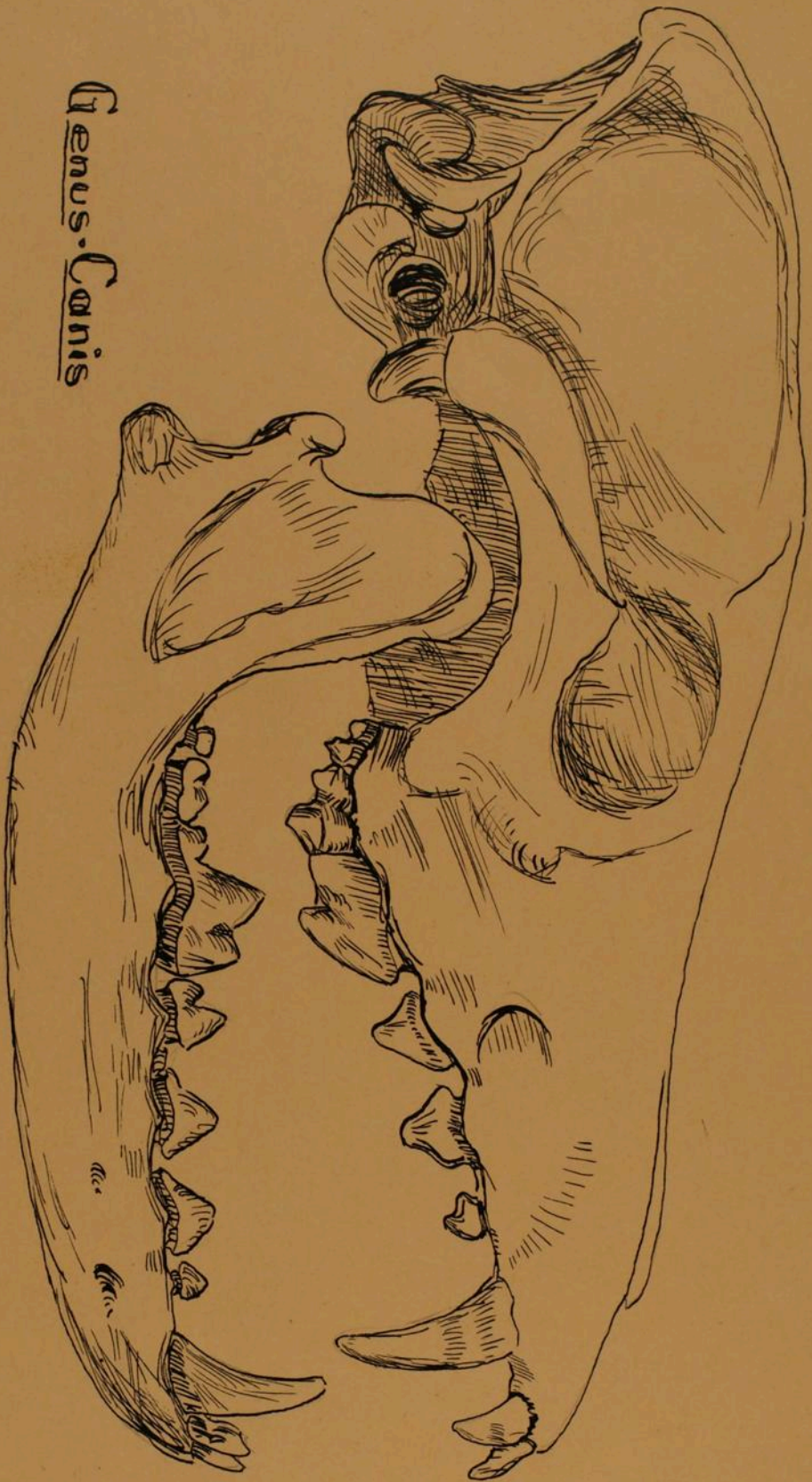
The Coyote likewise advanced into the woodlands of the entire southwest portion of the Dominion and into the Northwestern parts of Michigan.

The forced migration of his kind into distinctly wooded areas gives witness to the fact that some of his environmental requirements are plastic, and that he readily adapts himself to different types. Since his existence depends primarily on food and cover, it was probable the absence of cover on his former prairie range due to farming, more than absence of food, that drove him to the forests. Following the destruction of his numbers in Kansas and in other states, came severe plagues of rabbits, which leads one to believe that food was plentiful and that other factors were lacking--namely protection.

The Coyote's preference for the open country is one factor that doubtless makes him popular today along mountain ranges where open prairie and the sheltering timber meets. Here we find something similar to Leopold's edge effect (3. pp 131-32). Since a pair of Coyotes range 20 - 30 square miles, it is possible for them to include both prairie and woodland areas.

But the preference for prairies does not decide his present range, for Seton points out that the Coyote can be found through the 500 miles of Manitoba forests--with the exception of the northeastern portion--as far as Great Slave Lake. (1 p 366)

The Coyote of the Southwest, however, has not been greatly effected by civilization and lives very much as he used to live. But in the North



Genus·Canis

Skull of Coyote (estor) ♂
American Museum, #1308

x 2

R

Plate: F

From E. T. Seton, 1934

Canis latrans and C. ~~testes~~ have assumed ~~to~~ the status of their scarce cousins the Gray Wolf. One cannot help but admire them for the ability with which they so quickly adapt themselves to civilization.

Anatomy

The skeletal structure of the Coyote does not differ greatly from other Canidae. He is, of course, smaller than the wolf and larger than the fox. The skinned specimen (devoid of his heavy pelt) shows a startling litheness like that of the gray-hound: long legs, small abdomen, deep chest.

Dental and skull classifications are the only reliable means of identification of the species. The skull of Canis estor is shown in plate 1. Other identifications come from size and color of fox.

TRACKS AND SCATOLOGY

Tracks

The tracks of the Coyote are similar in form to those of the Fox, ^{but} the latter shows in print of pedal fur. I have observed, too, that Coyotes, cat-like, place one foot directly before the other in a straight line. But the Fox, like most Dogs and all Mustelidae, run distinctly "sideways" by placing one foot (usually right) in advance of the other.

Scatology

The dung of the coyote are elongated pellets from one to two inches long, and about one inch in diameter--characteristic of all Canidae.

Dung is most readily identified by associated tracks. Ordinarily it is hard to distinguish between the dung of Coyote, Wolf, or Fox--except in the Kit Fox (Vulpes velox) and occasionally the Red Fox (C. Vulpes Fulva)

without tracks or other definite signs.

Plate 111 illustrates the dung of the certain Canidae.

The dung is often interspersed with hair and bone fragments, and the seeds of plants. (see food). The analysis of dung has given much information on the food habits of the various races of the Coyote.

His Musical Escrioire

The Coyote is the only member of the dog family that habitually barks. Seton testifies a 3 months old cub in Winnipeg, Canada, had a fully developed voice.

It is evident that both sexes sing. No one to my knowledge, ever heard a wilderness Coyote sing before sundown or after sunup. But Seton says that a Coyote in the captivity may sing during daylight when inspired by whistles and such annoyances.

Every woodman-of and observing nature-knows a Coyote has two distinct calls. One comes soon after sunset and it " a series of short barks increasing in power and pitch until it changes into a long squall". (1 p 415)

The second call is the down-song, a long, clear, smooth sound that often times ends in a quiver. Seton says he often mistakes the down song of the Coyote for the mating cry of the Loon, and although I have never associated the two, I consider the two the most beautiful songs of the wilderness.

Night Song

The night-cry of the Coyote is a component of the west, and has taken its place along with the roar of the six gun, the war shriek of the savage, and the yammering of the Artic Fox.

We hope this cry will always be "a part of the West".

It is interesting to note that the earliest record, 1831, testifies

that he "proved desrtuaction to the sleep". (1 p. 355)

But, nevertheless, the earliest rider who lay in his blankets listening to the howl of the Coyote must oft times have murmured:

"Oh, bury me out on the preairie

Where the Coyotes may howl o'er my grave."

Enos A. Mills (1 p 415) gives an interesting slant on Coyote conversation: "The coyote used his voice for other things than pleasure. He has a dialect with which he signals his followers; he warns them of danger and tells them of opportunities; he asks for information and calls for assistance. He is constantly saving himself from danger or securing his needed food ^{by} cooperation with his fellows. The united efforts are through his ability to express himself the situation with voice and tongue.

"Through repetition, the Coyote's signals are oft times relayed for miles. A leader mounts a butte and proclaims his orders--this proclamation is answered by repeating Coyotes often ring distinctly across a radius of two or three miles."

That the Coyote growls is testified to by any who ever trapped the species very extensively or had one in captivity. He puts up such a heroic front that one wonders where got the name "yellow".

Without the song of the Coyote, the West would not ^{be} quite the same.

HIS FOOD

Perhaps the Coyotes inheirent ability to eat anything from sheep's liver to watermellons, is one fact ~~is~~ which has made it possible for him to cope with modern environment.

Although he is at heart a hunter and killer of his food, he graciously

excepts-in starving times-all forms of flesh and vegetable matter, regardless of its antiquity.

Ground squirrels, chipmunks, mice, rabbits, frogs, snakes, eggs, birds, domestic animals, and fowls, and big game animals chiefly compose his diet.

The quantity and quality of his food depends (1) on his range; (2) on the season.

Food of the Southern Coyote

In the Southwest, besides hoofed animals and carrion, the Coyote finds an abundance of small rodents, birds, fish, reptiles, and crustaceans—except in extreme years of drouth as in 1891-92. Seton (1 p 376) reports finding remains of small "rodents" and horned toads in the stomachs of trapped Coyotes. And the Biological Survey has seen Coyotes searching for fish, crabs, and turtle eggs along beaches.

In California, the Coyote enters orchards and gardens to feast on such delicacies and ^{as} melons, prunes, peaches, and apricots.

Food of the Northern Coyote

In the Northwest, the Coyote feed on mice, ground squirrels, and other small rodents. In the spring, eggs and fledging birds fall into his larder. He may also dig up hibernating chipmunks before the ground is frozen. In the winter his diet is often a matter of "catch-as-catch-can."

McAtte and Preble of the U.S. Biological Survey found an interesting variety of food remains in the dung samples from Athabaska, Alberta:

Rose, many seeds; Ribes, many berries; Arabia nudicaula many seeds and berries; Microtus drummondii, some hair and portions of skull; water beetles, remains of a good many; grasshoppers, about 20; ant, head of one.

Dr. A. K. Fisher testifies "at times the Coyote feeds entirely on large insects as crickets, may-beetles, and grasshoppers, and accomplishes much good". (1 p 378)

The Ways And Means of His Diversified Diet.

Being neither large or extremely fleet, the Coyote depends greatly on his cunningness and wit while hunting.

He captures prairie dogs and ground squirrels by stealing along in sheltering bushes surrounding the "town" then pounces upon the unsuspecting rodent while the latter is busy feeding.

The Coyote captures antelope-jacks and antelope-both more fleet than he-by relays. These relays have often been witnessed in both Coyotes and Wolves. In the case of the jack-rabbits, the Coyotes take advantage of the circling habit of the jack-rabbit. Several individuals, hidden along the approximate course, take up the chase and either tire the rabbit or succeed in heading him off.

As a Sheep Killer.

As a killer of sheep for food, Seton presents the situation in picturesque terms of an ardent protectionist: "when men brought his myriads of wool-bearing idiots into the Coyotes country-it was, of course, like throwing a crate of chickens into a Fox's den". (1 p 377)

The Coyote proves more troublesome to sheep than any other livestock. On the open range-unprotected- or even in isolated corrals, the dull but tasty lambs are tempting to the usually empty-bellied coyote. He is, it seems, wanton in that many times he will kill a half- dozen sheep and only nibble on the liver. Perhaps this is farsightedness on his part, for often he returns in the winter to dig for what other wild things have left of his kill.

About Cattle and Big Game.

Range cattle have little for fear in the Coyote except occasional

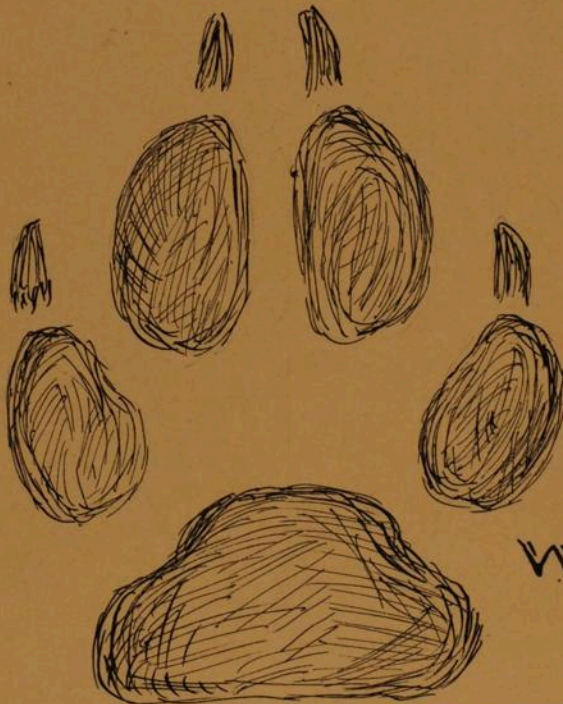
Plate II



Fox Track
(fore)



Coyote Track
(fore)



Wolf Track
(fore)

x17

From E.T. Seton, 1934.

R

strayed calves or weaklings.

Big game, also, are seldom worried, providing they are healthy. Antelope seem to be the only big game regularly attacked.

In the North, the Caribou suffers attacks of Wolf'packs, but the Coyotes have neither the strength nor cooperation of numbers. But the snow, straggling weaker starving elk, moose, or deer are pulled down. I once had the fortune to read such a story in the snow. During severe winters, when cows or does deep their young under poor environmental circumstances, Coyotes must take a heavy toll. Charles Bergendorf of Loon Lake, Wyoming, has told me of several cases where both cow and calf-isolated by deep snow-have been killed by Coyotes. In all cases, the cows were on the verge of starvation.

Moose probably suffer less than other big game from Coyote attacks. They are especially hardy and are good snow travelers. I have never known of a vigorous adult moose attacked by Coyotes under any conditions. The fact that they live (in the Teton region at least) along warm, open streams traveling chiefly in the water, browsing on stream-bank and swamp-willows, gives them advantages not enjoyed by the elk and deer and caribou.

Winter: The Critical Season

As in all northland animals, who neither store their winter food nor hibernate, winter is the critical season. No figures are known that portray winter as a decimating factor among Coyotes. For myself, I have never heard of a Coyote dying as the result of starvation but it seems likely that plagues of mange and hydrophobia may be associated with severe winters.

It may be, too, that Coyotes are of such breed and stamina that they are seldom worried to death by an empty stomach.

Northern Coyote in Winter

When the snow lies deep in the forests and plains, the Coyote often presents a forlorn spectral. Sometimes the most meager fare requires miles of hunting, and that he often goes for days without much food is evident.

(1 p 377)

One Coyote-or even a pair-can make enough tracks over a township to convince one that the country is fairly teeming with them. Fatigue, resulting from long cruising and exposure, must be great.

Carrion, gallinaceous birds, rabbits, and big game chiefly consists the diet of the wintering Coyote. Sheep and fowls are often killed around ranches. Game, in coniferous regions, is beyond doubt the Coyotes' controlling factor.

Marshall (4. p 171) says that severe ten year rabbit cycles in the Koyukuk country of Alaska, causes a corresponding cycle in all fur bearers. The fur catch-including coyotes-was decreased from 15 to 20 times during troughs in the cycle. This seems to testify that the density of Coyotes is greatly dependent of food supply.

Southern Coyote in Winter. Drouth Years.

The Coyote in the southwest is not greatly bothered by winter. His food remains of the same type, except during nesting seasons. Drouth years seems to be his critical factor rather than winter. Closely associated with drouth years are plagues of hydrophobia. The severity is illustrated by Seton, who tells of Coyotes, killed during drouths, of having only sticks and leaves in their stomachs. Such drouths may explain the Coyotes appetite for fruits and melons.

MATING AND YOUNG

Mating

The Coyote, like the Gray Wolf, is monogamous and probable mates for

life, As in Seton's Type 4 monogamy, the male assists in raising the young.

The Coyote breeds at two years.

Actual mating season is during the middle or last two weeks of February.

The Coyote may be seen singly but they usually travel by pairs. Large "packs" of six or eight are composed of pairs.

It is possible that natural mating may be disturbed by certain factors. In the fall of 1932 I found a band of three Coyotes living along Squirrel Creek in Fremont County, Idaho. I presume they were all males-caused by an unbalanced sex ratio, precipitated by a spasm of trapping during the preceding years of high fur prices. This company of three persisted until the summer of 1934, and as no young ones were ever seen it is improbable that there were any sex differences, i. e. mating in the form of polygamy or polyandry.

Lone Coyotes are ^{undoubtedly} ~~undoubtedly~~ a product of unbalanced sex ratios when present in large numbers.

That pairs stay close together, is shown by the fact that both are sometimes caught at the same set. Clifford Harshbarger, during a winter of Coyote poisoning in the Targhee National Forest (1928) found several pairs dead at the same bait. Seton (1 p 369) has captured pairs with steel traps.

The Coyote Family

The Den

The den is the home of the Coyote and serves as a protection for the mother and her pups, as a store house for food, and as a resting place for the hunting male.

It may be dug by the parents themselves, or maybe a remodeled badger

hole. Seton says the site of the den is selected by the female. The den is usually placed on elevated ground--sidehills seeming the most desirable. The entrance is often well concealed by the plant growth, but may be most conspicuous. I know of one instance in which four pups were trapped from a den in a plowed field.

Plate III illustrates a typical Coyote den.

The den may be of several compartments, each serving as a storehouse or resting place. The male is thought to have a separate niche. The young Coyotes often dig compartments for their use. Hunters, digging out Coyotes, have often missed pups who hid quietly in their own holes, the entrances of which were covered by loose dirt from digging operations.

A pair of Coyotes may have several dens to which they change on being discovered by men, or to reduce insect parasites.

Rearing of the Young

As true mates, both parents assist in the rearing of their young. While the mother is busy, the father provides the food and acts as a guardian. Both parents have been known to feign on being observed.

Gestation

As in all Canidae the gestation period is 63 days. The young are born during the first half of April and number from 3 to 10, usually from 5 to 7.

Growth of the Young

The young are blind and helpless at birth, covered with "close dark ash-colored hair" (1 p 317). The sex ratio is unknown.

On the eighth or ninth day, the pups' eyes open. After some three weeks, the mother carries them about the yard in the front of the den. At five weeks the mother carries them about the yard in front of the den. At ~~five~~ ^{eight} weeks they manage to stumble out alone.

After a month and a half they spend much of the daytime romping in front of their den with all the vigor of their wild youth. At this stage both parents may be absent from the den, occupied with hunting.

By July, when the pups are half grown they begin to run with their parents, who teaches them the arts of their craft. When winter comes, they go their own way in the world.

Nursing and Feeding of the Young

The pups nurse until they are about six weeks old, during which time the mother may (as does the Gray Wolf) disgorge solid food for them. After six weeks they eat what ever game is brought home to them.

Second Litters

Second litters are known among Coyotes, although they are probably confined to the south. A female Coyote captured in Kern County, California, "showed that she had been nursed within the previous 24 hours---The female contained seven small embryos." (1 p 375-76)

ENVIRONMENT

The Coyote may be found on open plains or in dense forests or in mixtures of both. As previously stated, the first requisite is food; the second, cover. Since he has few wild enemies, cover is a matter of protection from the elements, protection from man, and for concealment of his hunting maneuvers.

But that his nature is plastic is shown by Coyotes that are permitted to roam about towns or ranches, living on refuse.

Rather open country (such as burned areas) are helpful to the Coyote in that scarce cover reveals both his enemies and his prey.

For resting and hiding he prefers dens or brushy draws.

Migration

Continental.

The phenomenal extension of the coyote range is characteristic of his ability to take care of himself.

Figure 1 shows the former and present range of the species--and area of over 3,000,000 square miles. I have added the Alaskan point of extension to Seton's original after consulting "The Arctic Village" (4) Not shown -

Seton explains the northeasterly extension due to the clearing of forests.

The northwesternly movements were caused by the pressure of civilization in the south.

Home Range.

The home range of the species is about ten miles across. In a region where food is plentiful, the range of a pair may be only five or six square miles. On the less providing ranges, the pair might roam twenty or thirty square miles. In special cases the home range may be as little as a square mile.

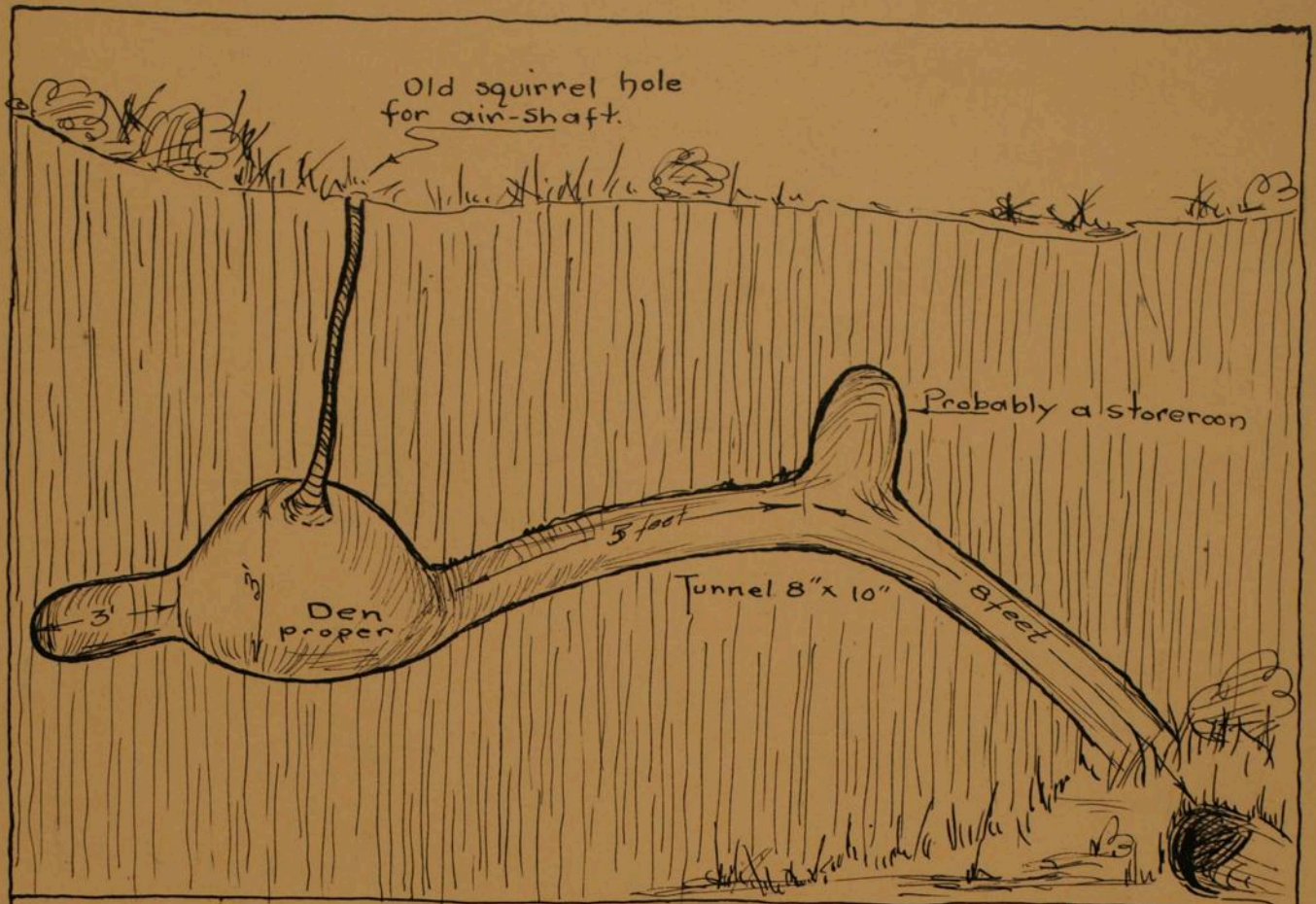
In all cases, individual ranges may overlap.

We may safely assume that daily and annual mobility depend upon the type and amount of game present. The lesser the game the greater the mobility.

DOMESTICATION

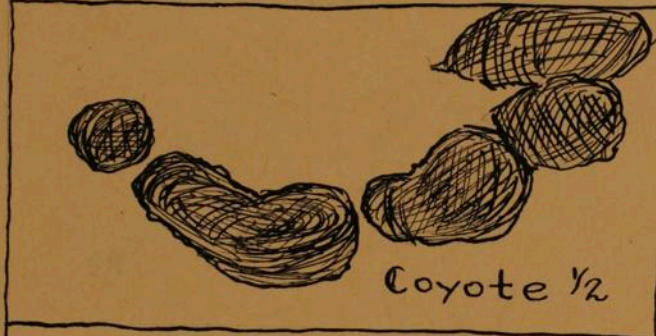
The Coyote has never greatly succumbed to domestication, though many are held captive.

The species, captured while pups, usually prove a nuisance to the owner. Some less-wild individuals have, nevertheless, been trained like Dogs.

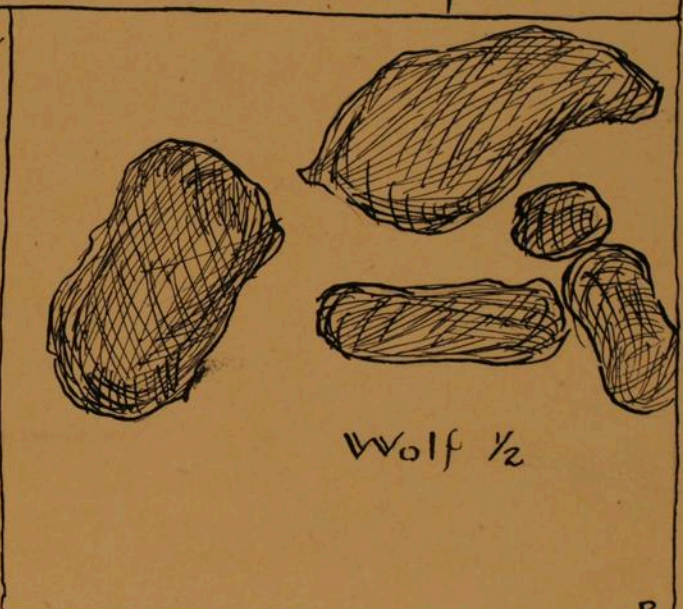


Plan of a Coyote Den, opened by
A. S. Barton at Boisseville, Manitoba.

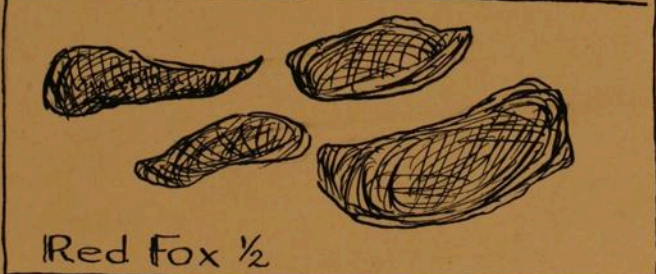
Plate
IV



Coyote 1/2



Wolf 1/2



Red Fox 1/2

Scatology of Certain Canidae.

Plate
III

From E. J. Seton. 1934

The species crosses readily with the Dog. Most observations of hybrid species were conducted in a private menagerie at Stony Mountain, Manitoba. Such hybrids bore characteristics of both Coyote and Dog, but continued to be interfertile with either stock for at least two generations.

SPEED

The Coyote is well known for his fleetness and in America has taken the Fox's place in the chase.

From Seton comes the following speed comparisons:

Blooded race horse- - - - -	34 miles per hour		
Prong horned antelope - - - - -	32	"	"
Grey Hound - - - - -	30	"	"
Texas jack-rabbit- - - - -	28	"	"
Red Fox - - - - -	26	"	"
Northern Coyote - - - - -	24	"	"
Fox Hound - - - - -	22	"	"
Gray Wolf - - - - -	20	"	"

The speed of all may vary with the individual. An occasional Coyote has outrun the best of grey hounds.

THE COYOTE'S TROUBLES

His Enemies

In the north, winter is the Coyote's greatest enemy, for it decreases his food, and decreases his carefulness, for he will eat poison bait when winter's hunger presses him.

The enemies of the Northern Coyote are, in order:

1. Winter
2. Man
3. Dogs

4. Disease (parasites, mange, hydrophobia, deafness, ~~impotent~~)
5. Gray Wolves
6. Eagles
7. Horned Owls

Dogs, in packs, may attack the Coyote but never successfully alone, for the Coyote is more than a match for an ordinary dog.

Mange epidemics are a well known among all Canidae. In severe cases it completely de-hairs the Coyote leaving him naked and thereby he is weakened. Allan Brooks (1 p 384) says he has caught many coyotes in number one traps, whereas a vigorous individual sometimes breaks the chain of the number 4 Newhouse.

Rabies is a disease among the Canidae from Old World-Jackalls to Arctic Wolves. Rabies and starvation are the controlling destiny factors in the Wolf. In the Coyote, rabies appeared in Oregon in 1915, California 1916-17 and in Fremont County, Idaho, in 1918. Serious ~~deaths~~ ^{deaths in} of live stock resulted, as well as a large decrease in numbers of Coyotes and Skunks.

Numbers

Seton (1 p 362-63) estimates the primitive Coyote numbers as between 2 and 3 million-say 2,500,00-or about one per square mile. Possibly this is low for prairie and high for woodland.

Nothing is known of its present numbers, though they are considerably reduced.

CONTROL OF THE COYOTE

The war began when the first sheep were brought into the prairies. Ranchers, trappers, and government hunters took their stand against him.

His known casualties, alone, are startling: California (1892)

paid bounties on 37,493 Coyotes-and 18 months kill, and in 1894 paid \$5.00 bounties on 71,723. Manitoba, in the 1890's, had an annual kill of about 5,000 Coyotes, and Canada, about 100,000. The United States Biological Survey reaped and annual harvest of some 20,000 scalps in a million square miles of range. Wyoming, at the same time took 6,633 each year.

The result was an increase in jack-rabbits and other rodents fed upon by the Coyote.

Reasons for Control

The Coyote is the most serious predator, and wherever he exists in large numbers, he has taken a heavy toll in lambs, sheep, cattle, and poultry, as well as game. He is a further manace in that he carries and transmits hydrophobia and tularemia. The Federal Government, the rancher and the conservationist considers his control and matter of grave importance.

Methods of Control

Poison has proven an effective method of control. Carcasses of horses, cattle, sheep and big game are poisoned with strychnine capsules and left in conspicuous places. This method is employed by the Biological Survey and stock associations. It has one bad point in the Coyote are especially shy of such baits except when winter hunger renders them careless.

Poison baits also destroys other game for which it was not intended.

Trapping has proven a successful method and one by far the most delicate, for Coyotes, with their acute sense of smell and keen eyesight, renders poorly set traps ineffective.

As in all Canidae the Coyotes have scent-posts--places where they come to urinate--and these spots control, to the large extent, their dailey travels. Scent-posts, therefore, offers a likely set for steel traps.

Old kills are also used, for Coyotes often revisit these carcasses.

The traps should be clean number 4's. The trapper, while setting the trap, stands on a "setting cloth"--and old hide--and carefully conceals the trap in the hole he digs, leaving the pan unobstructed but hidden. All dirt is placed on the setting cloth. The trap is toggled to a stake or a drag, which is buried. Gloves, used only for trapping, must be used, and all excess dirt carried away from the set. As a last step, scent is placed on the scent-post.

Scent must be manufactured by the trapper from the anal gland of the Coyote or by putrifying fish flesh.

THE COYOTE: A CITIZEN

That the Coyote is beneficeal is not universally recognized.

D. E. Lantz in a Biological Survey Bulletin says: "Among the animals ~~meals~~ included in the food of the Coyote are many injurious species--and the animals (Coyotes) are decidedly beneficial to farming interests" (1 p 390)

Prairie dogs, rabbits, rats, ground-squirrels, woodchucks, moles, gophers, and field mice are preyed upon by the Coyote.

Plagues of rabbits followed the destruction of Coyotes in many states. The numbers of gallinaceous birds continued to decrease even after the removal of the Coyote. And A. W. Anthony, Curator of the San Deigo Museum writes-- "I have no doubt that the Coyote is the ranchers best friend". (1 p 393)

Such views are not generally accepted, but he is, nevertheless, a noble, courageous, alert little brute whom we would miss should he disappear.

References.

- (4) Marshall, Robert. "Artic Village" 1932. *Publisher? Pages? Date?*
- (1) Seton, Earnest T. "Lives of Game Animals", Vol. i, Part 2, Doubleday. Doran and Co., Inc., Garden City, New York. 1929
- (3) Young, Stanley P.; "Hints on Coyote and Wolf Trapping", U. S. Biological Survey Leaflet No. 59. *Op? date?*