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About the Institute

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.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

College English Program - 1936
Ohio State Assn -

FF-21A

Very definite and clear

The Multiple Use of Lands.

B+

The multiple use of lands has been a major problem of forest management since the establishment of the first public forests. By multiple use is meant the use of a forest area by more than one user, each user harvesting from the area ^{one} of its several resources.

There is no question as to the logic of multiple use. Every forest area has one or more ~~real~~ resources open for utilization—such as timber, grazing, game production, watershed, recreation, or mining. Since it is possible for any combination of these resources to exist on the same area, economical management suggests complete utilization of all resources, providing, of course, intelligent fore-sight is employed to prevent devastation and to insure future productivity of the area.

*Let me
you the
better
the doubt.*

The problem of multiple use is not with the theory but in the practice. Application of multiple use on a particular forest often leads to conflicts between uses which results in an apparently hopeless problem. In some instances, the solution has been so evasive that foresters have insisted that multiple use had no application except in certain cases, and that the correlation of some uses is impossible. These foresters ventured the idea of singular use on the assumption that many forest areas have an obvious major use to which it is best adapted and should be so used.

20 Dec 1935

Dyne

Cliff and I were repairing an old wagon at his place in the Tetons one spring afternoon when a dusty looking rider hobbled up with sundry, powerful words in his beard that are coined only by horsemen and loggers.

We recognized him at once as fellow named Taylor who had a small outfit in the Mud Lake country some twenty miles west. Mr. Taylor never stopped swearing, but said:

"If you young fellows will be so kind and obliging as to rescue my rigging off the back of a horse down the crick, you can keep the critter and be mighty welcome to him. But I'm warning you, he's ornery and sneaking. I rode him twenty miles today as fine as you please until about a half-hour ago when he gave me the worst shaking up I ever got from a horse. I was glad when he threw me, 'cause it felt so good to be off his back." I wouldn't get on him again for nothing but I would like to have my leather."

Now my partner Cliff is like an Indian, as he measures wealth by the amount of horseflesh he has running loose on his place. Another horse, therefore, was something

to be ~~so~~ sought after so Cliff lost no time in accepting Mr. Taylor's generous offer. He caught a mount and rode away.

While he was gone I got the life story of this horse ^{which} Mr. Taylor of Mud Lake so hated to ride. His name was Dynamite but since Dynamite is too hard to say when one wants to swear as he always does around such horses, the name was doctored to just plain Weyne. Taylor had roped him out of a band of smoothies over in his country the previous fall. He was a wild one, but Taylor succeeded in getting him into a good, gentle horse. He just had two bad points: he liked to run away back to his home range and he liked to suddenly throw his rider. Taylor had worn out a good horse tracking him down when he strayed away and that last little tussle they had had down on the creek was just the last straw.

We were still talking of Weyne when Cliff came in dragging the horse itself. I got quite a shock when I first saw him. He was a fine looking animal to put it mildly, long-legged and jet black. Cliff had a grin on his face as broad as his hat.

Who [^] him I had a different opinion of before we got Taylor's rigging

off his back. He was all hoofs and
clicking teeth. We had to throw him.
It was like trying to de-horn a moose.

Cliff worked with Dwyne all summer.
They got ~~to~~ to be good friends, but to
Cliff was as far as friendship extended.
Dwyne had an utter dislike for anyone
else. Outside of fatally injuring our
dog, and trampling the cat and treeing
any stranger who unfortunately got
into the same corral with him, he
was a good, faithful horse.

Everything went fine until one
November morning Dwyne was found
to be missing. Cliff never said a
word; he just went out and caught
a horse and rode away toward
the mud lakes country. Eighteen
day later he came riding back
— on Dwyne.

Elk season opened the day
following Cliff's return so we
spent it together riding the ridges
near the ranch in hopes of finding
meat ~~re~~ close to home. We found
no good signs, however, so, as we
rode back that evening, we laid
plans for a trip into the back-
country.

It was dusk when we
came in sight of Cliff's big gate.
We were riding along in the
cold, our hands in mackinaw
pockets, quietly, easily, when it

S

happened. Deyne drew a deep breath, lunged, stuck his head between his ice-caked front legs and snapped his long back into a half circle. Cliff sailed out toward the dim stars and ~~dropped~~ came down with a soft thud in the new snow.

He Cliff got up and watched me catch Deyne. I handed him the reins. He led him on into the corral and pulled off his saddle. Then he went into the house.

We finished supper in silence. I tried to bring up a conversation after we had washed the dishes but Cliff ignored it. He played a few records on the phonograph and went to bed.

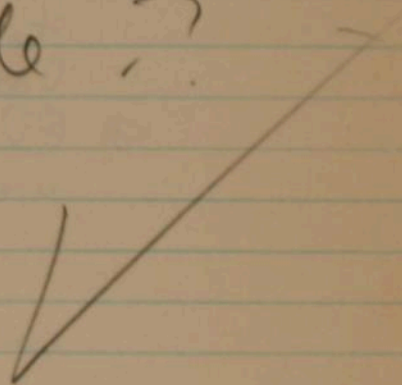
I beat Cliff ~~out~~ up the next morning and went out to do our few chores. A minute later I burst back into the house. Cliff was standing over the stove warming his socks.

"Deyne's gone," I said.
Cliff looked up calmly and went on ~~to~~ warming his socks.
"Let him go," he said.

Jack Bevel
Creative Writing -
December 20, 1935.

B² #

Can you not be
accurate ?



15 Jan 1936

Something On The Evils of Egg-nogs.

Mr. Lenz, not being entirely courteous, didn't get up from his fire-side chair when he said "good day!" to a tall, gaunt woman who was dismissing herself through the burly-lined storm door, the only really fastidious thing about the Opal General Supply Company then, in January, 1888. Mr. Lenz was usually courteous - to ladies, at least; he had learned that while courting his present wife, who was shooting biscuits up in Kemmerle when he met her. But today he felt too worn-out to let etiquette deprive him of that warm, comfortable chair. He had just gotten his four horses properly established at the livery barn after an eighty mile trip from Horse Creek and he thought it time for himself, too, to stable-up.

He snuggled down more comfortably in the wide chair and threw his long bearskin ^{coat} open. Dreamily, he eyed a steaming ~~cup~~ egg-nog which he sloshed around in a china bowl that was almost too hot to handle. One could expect it to be hot, as Charlie, who owned the store, had made it for him and his egg nogs were always hot, just like his beer was always cold.

He raised the bowl to his lips and blew softly across its frothy surface, watching, cross-eyed, the white foam part, exposing the rich yellow liquid beneath. His nose played gently with the fragrant steam; He had not smelled anything so good in months. Egg noops were a luxury up on Horse Creek. He usually had the whiskey and rum but no eggs. He'd taken a case of them up in the autumn but they all went into his wife's cooking before it had gotten cold enough for Tom and Jerry.

Because He opened his cold-cracked lips into a spout and sipped his drink. It scorched his mouth so he quickly swallowed, feeling it burn a path straight to his stomach where it lay fuming and smouldering in pleasant warmth. He gave a soundless whistle and then violently blew the egg-whites from his mustache. He slowly took ~~another~~ sip, then another, and growing immune to the heat, tossed off the whole portion. He laid back and closed his eyes to the bliss within his stomach.

Then "By thunder, that's good," he said. From somewhere within the rustic room, from somewhere among the cans and bags and bolts of cotton, came a voice.

"What's that, Carley?" it said.

Mr. Lenz opened his eyes but without turning his head, glanced at the proprietor who appeared out of a shadowy isle.

"I was just saying: you make good egg-nogs, Charlie."

"There's more where that one came from in the crock on the stove. Help yourself."

"Sure thing," said Carley, and, crossing himself, he dipped ~~up~~ a bowl-full from the crock.

He got back into his chair then, saying: "why ain't you having one, too?"

Charlie looked thoughtful.

"Well," he said slowly, "being it's the middle of the afternoon, I will. You see, I had to quit drinking egg-nogs in the mornings, that is, before breakfast, I mean."

"Stomach?"

"No," Charlie said. "It- like this."

He took a steaming bowl and mounted a box seat. "You know, every morning I used to get up and start a fire and put on a little pan of water or milk for an egg nog. While it was heating I'd beat the eggs and by the time I'd get the ingredients together the water'd be hot. It got so I wouldn't even take time to put on my pants and boots before I made that egg nog. Sleep in my shirt and drawers, anyway."

you know, and since I'd gone all night without my pants I figured another few minutes would make no difference.

"Well, one morning I got the fires going and the water heating and had ~~come~~ come out here to get a couple of eggs from behind the counter there when I walked the schoolmarm. Well, you know how she is — or was, I mean. She wanted something behind the same counter I was behind and she came right around for it. And there I was with no pants. She gives a little squawk and high-tails it.

"Well, Hy Parson came in then for some corn meal and, like a fool, I told him and he told his wife and she told everyone. Now the ladies are half-afraid to come in here unescorted and when I go to a dance they treat me as though I was packing a skunk in each pocket. And worse, the girl I had has started going with the station agent.

"Of course, Carley, a man should put his pants on anyway but I lay it on to egg noggs."

He raised his china bowl half-heartedly and sipped loudly.

"Say, but ain't they good, Carley?" he said.

Jack Ruseal

Creativesecting

Jan. 15 - 1936.

Pretty good
yarn
but you ^{could} give us
the narrative question
earlier in the
story, couldn't you?

B

17 Jan 1936

Why I Study Writing.

In every field, the technician finds it necessary to write, and to write well. In forestry, writing is usually stiff reports, but often enough the forester finds it to his advantage to write creatively.

Dr. Richard E. McArdle, former dean of the forest school of the University of Idaho, especially stresses good writing as a decided asset to the forester. He urges young foresters to learn to ^{write} thoughtfully and forcefully as a means of solving both the technical and philosophical problems of their profession.

It was Dr. Hough's well-written document that marked the beginning of American forestry over fifty years ago. Since then, writing has been of ever-increasing value in forestry as a means of transmitting knowledge to students and of gaining the public support which is the financial backbone of the profession. It has been the creative thinking and forceful writing of American foresters which has made national conservation a reality. Their pens recorded the first theories and the first dreams which are climaxed today by the National monuments, parks and forests and the promise of a perpetual supply

You have
received this
Jack L. REVEAL
Creative Writing

January 17, 1936 -

A
Very wise
decision

You could create more
interest by a vivid
description of the dog.
We can't see it. — Tough!

B + ²

27 Jan 1936

Kelsie wasn't very proud of his dog. One just couldn't be proud of old Spike. Kelsie always imagined the dog was short of brains, and since he was a sort of ~~a~~ yellow color, Kelsie figured he was shy of breeding, too. About all Spike cared to do was chase things — providing it wasn't sheep. He had a profound disregard for the woolies which didn't raise him in his master's estimation of him at all. Though Kelsie cussed each one of his thousand ewes personally each day, he had no respect for anyone who belittled sheep herding.

Why Kelsie didn't shoot old Spike and be done with him, no one knows. Maybe Kelsie ~~was~~ just tolerant of a loafing dog. like lots of men are, or maybe he thought Spike wasn't worth the powder and ball. Anyway, he let him follow the camp, and all along the winter range Kelsie would sit on rocks and watch Spike chase rabbits and an occasional coyote while the other serious-minded dogs worked the band. Of course Kelsie would lose his temper once in a while and take Spike to task for his aimless ways but an incidental damming rolled off him like water off a sheep wagon. He never stuck his tail between his legs and crawled

around in circles when Kelsie prothed and pumed and threw rocks at him, nor was he bashful about coming in for warm food which was none too plentiful around sheep camps in 1893.

I went along that way until spring. Kelsie had moved his ewes up to the virgin range on the fontinelle, and there on the deep sheltered meadows they dropped their lambs. Spike had never seen lambs before, so his curiosity kept him close to Kelsie and the band, and though they got pretty well acquainted, Spike never offered to learn the deep's end of the sheep business.

One day in May, Spike followed his master high up on a mountain slope. Since the day was warm and full of spring's energy, Spike was reluctant to stop when Kelsie sat down on a boulder to watch the grazing band. Rather, he climbed up to a clump of aspen, his eyes anxious for something to chase, anxious for some creature to vent his playful furor upon.

He found it in the aspen clump, but things didn't go just as they always had gone before. His barks changed to distressing howls and he found himself racing toward his master with a quarter of a ton of brown she-bear thundering

along in his tracks

He made straight for Kelsie, who turned around in time to get slapped down by a mighty blow from the bear's fore-paw. He lost his rifle and half his ^{weight} ~~and~~ ⁱⁿ a split second the bear was upon him, crushing him into the gravel under his back. He was too far gone to scream but he felt teeth mangle his shoulder and claws rip the flesh from his thigh.

Then above the growls of the she-bear, above the swelling din in his ears, he heard another sound. ~~Spike's~~ wild barking.

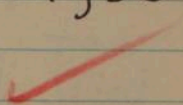
It was a moment before he realized the weight had left his body. This was his chance, he told himself, ~~and~~ ~~the~~ fought with his swaying senses and closed his eyes to the whirling world. He rolled over and struggled to his knees, groped for his rifle, found it and drew it to him; then he looked around.

Just below him on the slope was a combat. Spike and the bear. Almost as Kelsie saw it, Spike lost the battle just as Kelsie had lost his - by a slap in the head. But Kelsie was not done. The bear reared into a fine target and he sent a 30-~~40~~ slug smashing through her lungs into the spine. She rolled away down the slope.

Spike lay, licking first his wounds then his master's until the camp tender rode up in a lather and nearly fainted when he saw the ~~terrible~~ ^{terrible} pain of them. But fortunately, Kelsie ~~done~~ the fainting ~~himself~~ and saved himself from the agony of an eighteen-hour ride to town.

He surprised everyone by not dying. He lived, instead, and told his bear story around a thousand Wyoming camp fires. Spike lived, too, and though he never learned the sheep business he lived to be a what would be an old, old man in the human sense.

Jack L. Reveal
Creative Writing

Jan 27-1936 —


On Getting Lost -

14 Feb 1936

Nearly every sportsman and woodsman, sometime or another, has lost himself or, at least, his camp. Even Daniel Boone, prince of woodsmen, was once "rather bewildered" for several days. Boone, faced by greater dangers, gave very little significance to the fact that he was lost, but today, being lost is next to being shot, in the category of dangers with which the modern woodsman has to contend.

It seems there are two degrees at which men lose themselves. The first is confined to more experienced woodsmen and the second, more vivid kind, is more common among sportsmen — the low-land farmers, mechanics and business men — who go occasionally into the woods to hunt and fish.

The first type is hardly more than just an incident in the woodsman's life — just another inconvenience to be endured and forgotten. I've gotten lost twice on cloudy, winter days. On those occasions, I just shot a grouse or two and huddled a campfire until the following day gave me time to find myself.

Not so simple with the sportsman, however. He makes "getting lost" an ordeal that sometimes rates a newspaper story and a searching party. He sometimes stays lost several days, losing

his gun, hat, and knife as well as himself.

The sportsman who gets lost has only himself to blame. He makes his play dangerous, if not deadly, by, first, neglecting to go prepared to meet such emergencies, and second, by not watching or caring where he's going. Forest officers and wardens could reduce the number of men lost each season or, at least, ~~the~~ lessen the hardships incurred in being lost, by bringing the sportsman's attention to the following points:

1. Go prepared — since the best of woodsmen do get lost. Wear good, efficient clothing; carry matches, a knife, a coat and a small, emergency ration; then,

2. Avoid getting lost — by keeping constantly in mind exactly where you are. Note landmarks carefully. Like the Indians, study your backtrail so you will recognize it when you return.

3. Get a map of a strange country; locate your camp and study the drainage, possible landmarks, and trails in the regions in which you are going to hunt or fish.

4. When hunting in a new rough country, stay in one drainage^{area}, or at least remember it when you cross into another, keeping in mind ~~at~~ its location with reference to your camp. Many hunters lose themselves by believing their camp to be in the

canyon below when actually it is one or more ridges away.

5. Unless you are well acquainted with the country, follow convenient trail when traveling between points. Do not attempt to "cut-across" a strange region.

6. If you do get lost, keep your head. Before night comes, select a good camp, gather wood, build a warm fire, and wait for morning. Try to russle something to eat if it's nothing more than a pine hen. Attempt to recall the days journey and spot yourself on a map. If you can not decide exactly where you are, get on a creek and follow it down. Remember that men camp on creeks, and that it's likely there's a camp not more than a days walk below. Keep up your spirits; imagine you are playing a game — do your best and use your head.

9 A

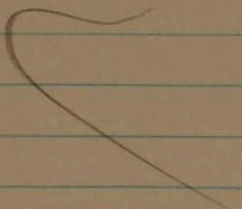
Jack Russell —

Practice Planting -

Feb- 14, 1936.

R.

Write notes



19 Feb 1936

Preparation of Rawhide.

Rawhide is a useful, tough, strong leather. On farms and ranches, it is serviceable for repairing leather goods or wrapping various handles and implements. Cut into strands, rawhide may be easily braided into lariats, halter ropes, bridles and hitch reins. Laced snowshoe-fashion, it makes attractive seats and backs for rustic furniture. The sportsman finds it useful in repairing his gear.

Rawhide is inexpensive and easily prepared. Farmers who butcher their own beef will find it profitable to make some of their steer hides into this serviceable leather. Others can purchase good skins for about a dollar each.

The hide should be freshly skinned from a fat, young beef. The loose edges of the hide — leg, head and tail, — are trimmed off, and small slits made at one foot intervals along the edge of the hide. A length of quarter-inch rope is now threaded through these slits and the hide stretched drum-head fashion on a pole frame.

Some of the excess flesh may now be carefully cut away with a sharp skinning knife. The stretched hide is then placed out of the direct sunlight and left to dry. Drying may take from one to two weeks depending upon the atmosphere.

When thoroughly hard and dry, the hair is removed by scraping the dry hide with an edged instrument. If a tanner's scraper is not available, a tool for this purpose can be made from a piece of thin iron or steel about two inches wide, one end of which is bent into a short hook, sharpened to ~~with~~ a beveled edge. With this instrument the hair is cleanly scraped by short, heavy strokes in a direction oblique to the hair. Frequent sharpenings of the tool is usually necessary.

The flesh side is also scraped until it is clean of all dry flesh and tissue.

The hide may now be used as rawhide or may be further improved by applying to both sides, several coats of hot tallow before it is removed from the frame.

Straps and lacings are cut from the hide in continuous, circular strips. Rawhide stretches ^{to} considerably ~~to~~ varying degrees depending upon its thickness (whether "back" or belly), and therefore the strips must be cut somewhat wider than the width desired for the finished product.

Before being used, the newly-cut leather must be soaked in water overnight then wrapped tightly around a log or barrel and allowed to dry. Such an operation is necessary in order to remove most of the stretch. Strips may be trimmed to a standard

width before being removed from the log or barrel.

The lacings — re-soaked until pliable — are now ready for use.

Rawhide, when dry, is hard and tough. Straps and braided articles can be "tanned" by drawing them back and forth through an auger hole or a staple. Oil may be worked into the leather in this manner.

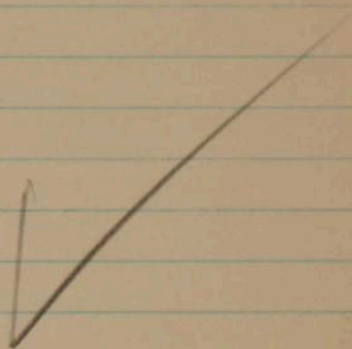
Rawhide wrappings on handles, or lacings of various sorts, are varnished for protection.

Jack H. Reveal

Creative Writing.

Feb 21, 1936 -

A



On Sledges.

No machine has yet been devised to entirely supplant the man-hauled sledge or runnered toboggan for snow travel, even though such men as Scott and Baldwin testify that "man-hauling" is a most severe form of human labor. In the snowbound backcountry today, isolated men still pull heavily loaded sledges as they did a generation ago. Contrary to the common conception of sledging, dogs are seldom used. Dogs are expensive and require much attention and training. The journeys of the modern woodsman are usually too short and too infrequent to make the keeping of dogs for that purpose practicable.

The amount of labor involved in man-hauling the sled depends upon three factors: first, snow conditions; second, topography; and third, the sled.

Man has no control over snow conditions or topography, except when it is possible to select choice days and easier slopes on which to travel. Except with a light load, "man-hauling" in the loose, early snow, is a heart-breaking task, indeed. It will prove easier to make several trips back-packing one's outfit rather than to attempt sledging it in bottomless snow. Toward the middle of the winter

However, when the snow becomes packed, heavier loads can be moved with relative ease.

Slope, obviously, plays an important part in sledding, doubling the slope at least squares the effort. Hauling across short, steep slopes is extremely fatiguing on the best snow. It is desirable to make a long circuit rather than to attempt a series of steep slopes.

The distance three men can haul a well-loaded sledge varies with the above factors. At the Antarctic, Scott considered ten or twelve miles an excellent journey. On some days he traveled less than three. In the Teton mountains, we have hauled loads over the same eighteen mile trail in from one to four days.

Experience in polar fields has developed an almost perfect sledge. Though of somewhat delicate construction, it can be built by a careful workman in an ordinary workshop.

For most purposes it need not be longer than eight feet, and preferably only eighteen inches wide so it will ride in a snowshoe trail. Ash is considered the best wood for sled construction.

The runners are three inches wide and an inch thick, being somewhat thinner at the tip where they are bent so as to give the superstructure a ten inch clearance. The bars which support the bed, are slightly lighter than the runners to which they are secured by four vertical, ten inch spokes.

Each runner member is constructed separately, then fastened together by four horizontal ^{bars} which form the bed. I prefer to supplement the bed by stretching a half-dozen strips of oiled raw-hide over the bars in lattice fashion.

With the exception of a bolt which secures the tip of each runner to its upper member, all joints are simply tailed together and lashed in place with wet raw-hide which binds tightly upon drying. This construction gives the sledge the flexibility necessary to withstand the strains and twists to which it is subjected.

To meet snow and trail conditions peculiar to the northwest, I prefer to add to the polar sled the handle-bars common to Canadian types. The handle-bars make it possible to push from behind. In rough country, pushing is highly profitable and less tiring. Where the trail is soft or crooked, the bars are the only means of controlling and guiding the sledge.

Although some men prefer braided raw-hide for tow ropes, a better selection, I believe, is a good grade of three-eighths inch hemp. Hemp freezes no harder and stretches much less than rawhide, which is also subject to gnawing by rodents.

Jack Reveel

Creative Writing

Sep. 19, 1936

✓ A

Clear. Information?

Very good except for 9 misspelled words 2 March 1936

The Relationship Between Predators and Game.

A-2

Compare and contrast

A most serious obstacle to wild-life conservation is the refusal of the sportsman to recognize the mutual relationship between game and predators. Of the eleven fur-bearers, only two — the muskrat and beaver — are acceptable to the sportsman on the grounds that they are vegetarians. The remaining nine species are outlawed as "vermin" to a greater or lesser extent, and these fur-bearers have been so greatly discriminated against in recent years that some are extinct in many localities. The result is a disruption of the biological factors governing wild-life.

The sportsman, being neither a biologist nor a student-observer of wild-life, does not realize that a balance of nature is essential, nor does he realize that the biological relationship between the herbivores and carnivores must not be ignored. Each type has contributed to the progressive development of the other and must continue to do so. For many ages, the carnivores have been building up a strong, alert race of herbivores by killing the weak and inferior individuals among the latter, just as the animal husbandman develops better strains of livestock by selective breeding. The predators, likewise, have built up their race by starving the weak, stupid ones of their numbers who are incapable of hunting their own food.

But the improvement of species is

not the only function of the relationship between flesh-eaters and plant-eaters. For without herbivores to feed upon, the carnivores will starve, and without carnivores to cull their ranks, the herbivores will multiply until they devegetate their range and die of starvation and of disease born of unsanitary conditions relative to over-stocking.

So it is that the life of the game animal parallels the life of the predator, forming a balance in nature - each being essential to the existence of the other.

Yet, such a balance does not always hold. In the past few years, the effects of an unfavorable carnivore-herbivore ratio, caused naturally and by man, have been noted. It would be well

here to point out several instances of this nature so as to illustrate the need of a balanced animal population.

Robert Marshall writes that in northern Alaska in 1930, the periodic scarcity of the snowshoe rabbit caused the fur catch for that year to fall off over two hundred percent. Trappers in that region say that the number of rabbits is governed by a cycle which reaches its climax in a abundant rabbits about every ten years and that the amount of fur caught is directly proportional to the amount, or density, of the snowshoe hare. In this way, the carnivore is dependent upon the herbivore for existence. It should not be gathered from such an example

that the scarcity of fur bearers, at ebbs in the rabbit population, is due to starvation. Rabbits are never that scarce. The carnivores merely fail to reproduce; they are under-fed. Obviously, it follows that an extended shortage of food would result in the extinction of the fur-bearer. Coupled with heavy trapping, such has actually happened generally throughout the United States.

Examples of disturbed carnivore-herbivore ratios are much more common among game animals. In recent years, the conservation of big game and game birds, for hunting and aesthetic purposes, has caused the creation of large areas for ~~the~~ the protection and propagation of desirable species. Sportsmen and conservationists used every power at their command to re-establish game. Rigid game laws were enacted to control hunting, and, to add greater assurance to the success of re-establishment, every animal thought to prey upon the game species was partially or wholly removed.

So far as the re-establishment of deer is concerned, the venture was successful, but only in terms of a greatly increased density. In Pennsylvania, for example, deer has become so numerous that a recent publication by the game department is entitled The Pennsylvania Deer Problem. It deals

not with the propagation of deer, but, rather, ^{with} how to manage the present vast herds which are devegetating their range and causing unsurmountable damage to farms and orchards. Not only are these Pennsylvania deer faced with starvation; disease is rampant among them. It is obvious, when comparing these deer with the original herds, that predators should have been left to range with them so that their numbers could be controlled and the weak, diseased ones removed.

A similar condition occurs on the Kaibab in Arizona. Since state and federal authorities regulated hunting and killed the majority of the carnivorous animals, the deer have become so dense that they starve by hundreds. Disease, as a probable result of unsanitary conditions relative to overstocking, is also common among Kaibab deer.

Such are the inevitable results when the balance of nature between herbivores and carnivores is disturbed. In game management, predators furnish the only natural means of suppressing disease and of regulating density to conform with the carrying capacity of the range. The harmonious relation is apparent to the naturalist and must be realized by the sportsman if American fauna is to be perpetuated easily and normally.

Hunters cannot supplant predators to the same end.

An excellent example of the relation between the two animal types is found on the Sheldon farm in Oakland County, Michigan. The farm is maintained as a hunting grounds and is kept heavily stocked with pheasant and grouse. Most of the birds breed at large, but each spring the field stock is supplemented by pen-raised birds, which results in maximum stocking. Ned Dearborn, of the University of Michigan, in a game survey of the Sheldon farm in 1931, reports that besides the game birds, there exists on the area such predators as minks, badgers, weasels, raccoons, skunks and foxes. These six predators, it was found, lived in apparent harmony with the pheasant and grouse. In a special study of the foods of the foxes and skunks on the area, Dearborn found that their ^{animal} food consisted almost entirely of rabbit and mice. Only on rare occasions did the fox feed on pheasants, and then only on chicks, and in only one instance did the skunk prey on game.

Conditions such as exist on the Sheldon farm must be studied as also must natural conditions. The correct ratio between game and predators must be determined and this knowledge ~~put~~ put into practice. How else can

sportsmen hope to perpetuate game unless natural laws are known and followed.

References:-

1. Marshal, Robert - "Arctic Village." 1934
2. Dearborn, Ned - "Food of Some Predatory fur-Bearing Animals in Michigan."; Bulletin Number One; School of Forestry and Conservation, University of Michigan. 1932
3. Pennsylvania Dept. of forests and Waters - "The Pennsylvania Deer Problem." 1934.
4. U.S. Forest Service. "Notes on the Kaibab Deer" Mimeographed.
5. Swapp, Ben - "Problems of the Kaibab Deer" Unpublished report to the Supervisor, Kaibab National forest. 1931.

6 March 1936

The fishing hole.

I like to recall when I ^{was} were a lad
~~of~~ all the happy times I had
A-swinging along to the fishing-hole
with a can of worms and a willow pole.

I'd pick a grassy place to sit
then on the hook a worm I'd fit
And there I'd wait 'till almost night
and never so much as get a bite.

But now, as a man, when fishing I go
it amounts to nothing but worry and woe:
I cut my boots and scratch my thighs;
I break my rod and lose my flies.

Though now I catch 'em by the score
I often think that, just once more,
I'll get some worms, a willow pole,
and fish in peace at the fishing-hole.

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Jack Reveal
Creator's writing

March 7, 1936 -

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Jack Ruseal
Cretin's Writing

~~February~~
March 5, 1936

