The King of the Olympics

By

E. B. Webster

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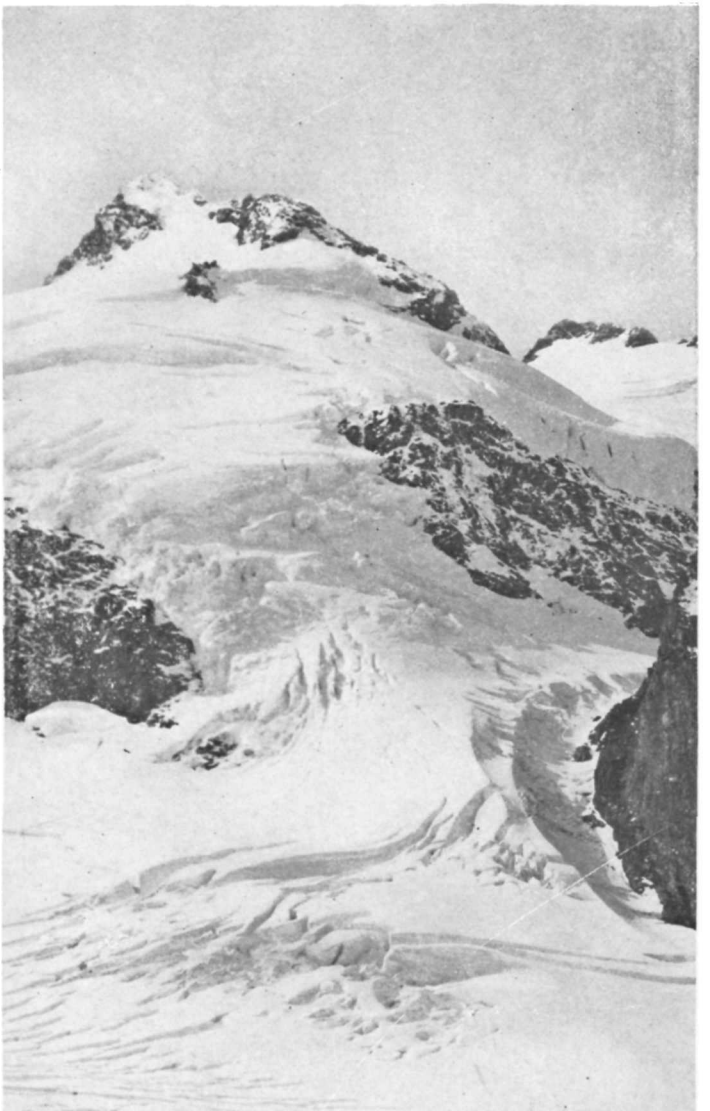

Courtesy "Seattle Mountaineer"
Mt. Olympus—"The Home of the Gods"

The
King of the Olympics

The Roosevelt Elk

and other mammals
of the
Olympic Mountains

By

E. B. Webster

Illustrated with Photographs by Wm. Everett,
George Welch, Grant Humes, and others

Port Angeles, Washington
1920

To
Mrs. M. A. Webster
My Mother
Whose Heart is Ever
in the Highlands

HERE'S HOW !

"They could find nothing whatever on the subject of the Roosevelt Elk in the Government Library, not even a mention of it. I am enclosing a memorandum which says that not even Roosevelt himself appears to have mentioned them. It is up to you to write that monograph yourself, and I hope you will be up and at it."

As president of the Klahhane Club (Olympic Mountaineers) it has fallen to my lot to prepare lantern slides illustrating the salient features of this exceedingly rugged and consequently little known section of The Last and Best West — the Olympic peninsula. Gradually there has been built up within this collection a series of over a hundred pictures of the Roosevelt Elk. As a matter of course, most of us who live here at the Gateway to the Olympics are more or less familiar with these noble animals. With the idea of adding something to this personal knowledge, for use in connection with the pictures, I endeavored to acquire such books as had been written on the deer family. There was little to be had, and of these only one, Roosevelt's own work, mentioned the fact that there were elk in the Olympics. Roosevelt wrote his book some time before the Olympic elk was found to be a distinct species and given his name. Having failed in my effort, I appealed to our good friend and companion on several outings in the Olympics, Dr. Cora Smith-King of

Washington, D. C., with the result as given above, and herein.

The monograph written, it seemed incomplete; so closely linked with the lives of the elk are those of the wolf, cougar, bear and deer, that it appeared necessary to include additional chapters on these animals. This done, it was but a step to the remaining mammals of the Olympics — some thirty-odd chapters in all.

The stories are not scientific — nor are they so-called nature stories, based upon tradition and embellished with imagination. They simply record the observations of a number of nature-lovers, men who have spent the greater portion of their lives in the Olympics, and whose interest and accuracy of observation is, I believe, beyond question. In addition to those mentioned herein, I wish to express my thanks to Dr. F. S. Hall, Prof. C. J. Albrecht, D. E. Brown and others of the Pacific Northwest Bird and Mammal Club, for valued encouragement and assistance. Particularly am I indebted to Mr. Brown for the loan of a series of skins of the smaller mammals of the region.

I trust my friends of the Upward Trail may find some small measure of pleasure and profit in this result of my year's work — and if you do, I ask that you remember to whom you are indebted, for verily, there was "a woman at the bottom of it."

E. B. W.

Port Angeles, Washington,
December 1st, 1920.

Klahhane Pack Train Leaving
for Olympus

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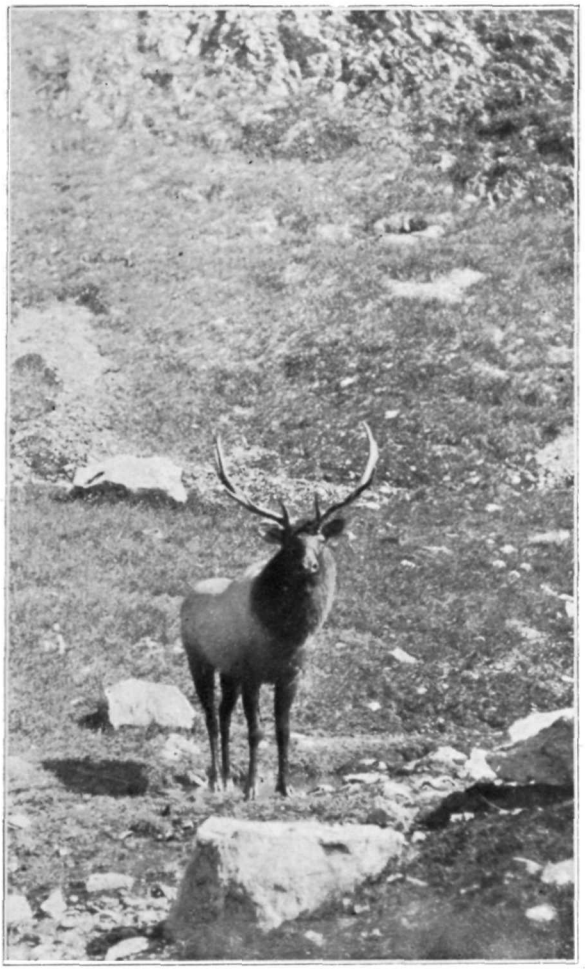


Photo by Everett

"The King of the Olympics"

The King of the Olympics

THE sportsman, the scientist, the nature lover, interested in the big game of the world, need only walk through the great halls of our National Museum to pass in review the principal animals of every continent. Here are gathered the deer and the antelope, the cat and the bear, apes and pachyderms—mammals, birds, reptiles, fish, crustaceans, and all the rest.

Especially complete is the collection of North American fauna, embracing hundreds of species. Whether it be a musk ox, a Kadiak bear, a kangaroo mouse, a pack rat, or what not, obliging attendants are always ready to direct one to the particular case wherein a group is displayed in its natural surroundings. Every form has been studied by the scientists and no single characteristic, no variation in structure, in shade of color or change of habit, in either animal or plant life has been overlooked in the splitting of species.

And yet, in all this vast collection one may look in vain for a single specimen of that most noble of all American animals, the Olympic or Roosevelt Elk. Even the guards know him not. "A Roosevelt Elk? There's the wapiti over there. Not that? That's all the elk I know of. Maybe

it is some new animal Roosevelt discovered in Africa?"

The hint gives you an idea and after persistent searching you wander over to the Roosevelt section, where are lions, giraffes, rhinos, and the various other beasts from the Dark Continent, all in their natural surroundings; that is, the lions scratching in the sand at a spring which the ungodly guard insists on telling you is only glass, the giraffe with its head in the clouds, and the rhinoceros with the little birds sitting on its back eating the ticks off its hide—the same guard insisting on explaining that the ticks are only tacks.

You walk down past the line of wart hogs, the famous hartebeest, the very animals pictured in Roosevelt's "African Game Trails," each with its printed label, "Great Game of the World." And here are zebras, antelopes of many kinds bearing horns of every conceivable twist—slender legs, trim bodies, pointed heads, brown eyes. You read the label, fix the animal in your mind's eye, and pass on. Another pair of slender brownish legs, a label reading

Great Game of the World
OLYMPIC ELK
Cervus Roosevelti (Merriam)
Olympic Mountains, Wash.
123,443

—your head snaps up and the space above seems to be fairly filled with antlers, for there towers "a mighty bull, whose proud carriage and lordly bearing make him the most majestic looking of all the animal creation"—a stranger in a strange land, the land of the elephant, the rhinocerous and the lion—yet every inch *a King!*

Speaking strictly by the card, our "elk" is a true deer and should be known as the wapiti, while the real elk is an European animal, closely related to our moose. The first settlers were not very particular in their nomenclature, calling the American bison a buffalo, the American wapiti an elk, and so on. We have a similar instance here in the Northwest where our Chehalis is commonly known as the "mountain beaver".

Massive Antlers Peculiar to the Olympic Elk

The Olympic Elk differs from the eastern variety in being considerably larger and lighter in color, as well as in having heavier, more massive antlers. Formerly all western elk were commonly known as Pacific Coast Elk, a variety which ranged from Vancouver Island to Central California, the southern animals being much smaller than those of the Rocky Mountains.

With the sending of the first specimen of the Olympic Elk to the National Museum, it was immediately apparent to Dr. Merriam that here was a variety deserving classification as a separate species, and he accordingly decreed that henceforth the elk of the Olympics should be known as "Cervus Roosevelti." This particular bull elk was a fair average specimen, while the largest wapiti from the Rocky Mountains in the American section of the museum is described as being "quite different, smaller, yellowish-brown, antlers shorter and not so spreading."

It is not claimed, however, that the Olympic

elk have as long antlers, nor that their antlers have as great a spread, as those carried by their eastern relatives, but rather that their antlers are far more massive and give an appearance of greater majesty.

Inasmuch as Port Angeles lies in the very shadow of the mountains, at the beginning of the Elwha river trail — the Trail of Mystery, the Natural Highway to the Heart of the Olympics — down which were brought nine-tenths of the trophies obtained during the open seasons of former years, it is but natural that here, in the club rooms of Naval Lodge B. P. O. E. and in the offices of business and professional men, should be found some of the most magnificent heads in the world. Few there are who, though passing these heads day after day, fail to pause, now and then, in admiration and wonder.

One of the finest specimens in the country, a head bearing long and wide antlers of exceptional massiveness and roughness, is that over the fireplace at Singer's Tavern, Lake Crescent. Walking up and down the lobby one late fall evening some four years ago, I spent considerable time sizing up and admiring that great head. That night we had our first snowfall, about four inches in depth, light and fluffy, and the following morning a half dozen of us started out on a tramp along the lake shore trail. A couple of miles from Singer's we came upon the fresh tracks of a large elk, and, the snow making a sound-proof cushion, we soon surprised the animal, standing underneath a high log; in fact, Mr. Morganroth was almost able to step up and slap him on the hindquarters, the only portion at first visible, before he realized our presence.

Photo by Everett

Massive Antlers of Olympic Elk

At first, in his fright, the bull plunged into the willows along the lake shore, apparently with the intention of swimming across. While we were hustling along to head him off, he thought better of the matter and turned back into the open timber of the mountain side, stopping at the distance of a few yards above, after the manner of a deer, to size us up. It was a moment of great suspense. We stood there too astonished to speak. I saw nothing, thought of nothing, save the grandeur of that head — and then I realized that Mr. Singer was saying to himself, almost in a whisper, "My God, what horns! My God, what horns!" He was expressing my thought, exactly. Never before had I seen, and never again do I expect to see such an elk.

"The Boulder Creek Herd"

Doubtless this old bull was a member of the so-called "Boulder Creek Herd," of between one and two hundred animals, which has its summer range in the meadows of the Boulder Peak and Happy Lake country, immediately south of Lake Crescent, and which, when winter snows become too deep, leaves these heights for the parks along the Elwha river bottom and on the benches above. Here, often only two or three miles from the Elwha bridge on the Olympic Highway, and not over ten miles upstream, at Humes' ranch, they are to be found from early November until late in the spring, sometimes in bands of from fifty to two hundred, but more often in small bunches of a dozen or more.

While not by any means half domesticated as are many of the winter-fed elk in Wyoming and Montana, the Boulder herd has little of that fear that inhabitants of the mountains ordinarily have of mankind. If they get the man-scent they will fade away in the timber or brush, it is true; if surprised, they will bound, or walk, for a short distance, generally not much further than out of sight. Seldom or never are they thrown into panic by the quiet approach of man. I once walked out on a gravel bar of the river bottom and up to a herd of forty-eight, trapped in a triangle, the sides of which were a big log jam and the white water of the river. While a trifle nervous, they stood still, milling slowly around when I took another step or two, until finally I could almost have touched the nearest cows. Meanwhile they were taking the water, one at a time, swimming part way across, walking through the more shallow water on the other side, then turning around to look, each one shaking itself like a dog, with the drops flying in all directions, before climbing the bank to an old clearing, where, there being no bridges within three miles, they were perfectly safe from further molestation on my part. Many times have I thus closely approached small bands of these elk, and this is the common experience of everyone who lives in or visits the mountains and who uses a little care and patience in making the acquaintance of the animals.

Protective Coloration

As a general thing both the mammals and the birds of the Northwest Coast are darker in colora-

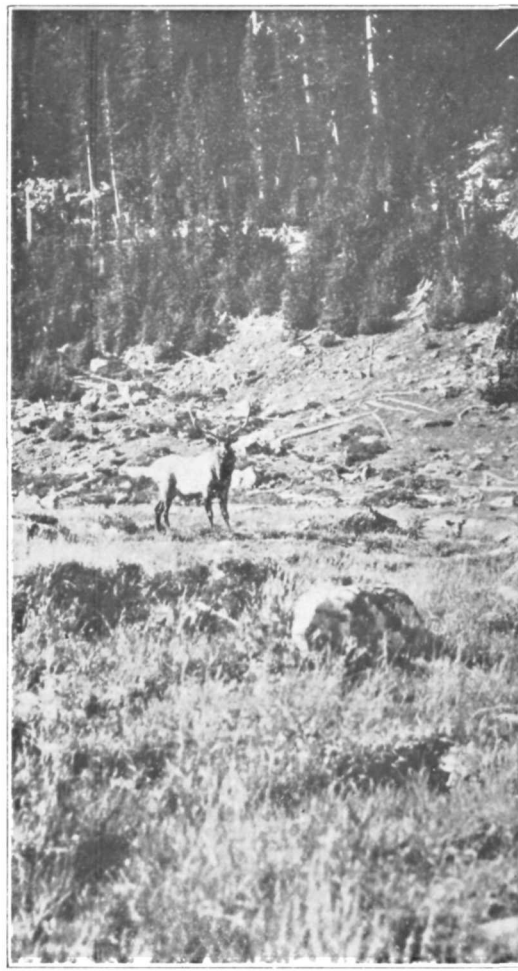


Photo by Welch

Two Elk Demonstrating Protective Coloration

tion than those of the central and eastern states. There appear to be just enough exceptions to prove the rule that the character of habitat controls color, and in the lighter colored body of the Olympic Elk we would at first thought seem to have such an exception. However, when we pause a moment and consider the outstanding features of the habitat of our elk, we are forced to the conclusion that here is one of the most notable examples of protective coloration in the entire Northwest.

Our forests are composed of trees having a rough bark exceptionally dark in color. Also, the greater portion of the weathered native rock of the Olympics is of a deep dark brown. Everywhere we go we find small pieces or chunks of this rock—on mountain sides, benches and even down in the valleys, fragments of great masses the frost has split from crests above. And so, whether the elk be lying or standing among trees, or areas of broken rock on the upper slopes, his head and neck are indistinguishable, while the antlers, when present, closely resemble small limbs or brush.

And the light greyish body, which has raised the question, is a dead ringer for both weather-beaten logs and stumps and the lighter hued rocks as well as the granite boulders of the river. The wood of the short, thick alpine tree is exceedingly dense, being little more than a solid mass of knots, and therefore moisture-proof. Uprooted by great winds, the tree lies on and among broken pieces of rock, where soil, nor moisture, nor lichen, nor moss may bring decay, and bids fair to last for all time—a silvery-grey trunk of medium-size, only short lengths of which are to be seen

between the brown rocks or between rocks and young fir. So, also, on the lower benches and river bottoms, where the timber is not too dense, the cedar, and to some extent other trees, lying on other windfalls or on rock, bleach in the same manner. Because of the growth of young trees and of brush and vines such logs are seldom seen in their entirety—only short lengths are here and there visible.

A party of some twenty members of the Klahhane Mountaineering Club of Port Angeles, taking their first "Annual Elk Trip" a few years ago, was crossing the Elwha by the cable bridge, about six miles above the Olympic Highway, when the first in line jumped a couple of deer. Interested in watching them, they did not notice the presence of a band of elk in a little park below, until some one saw that the animals were moving. Expressions such as, "Why, I thought those were stumps;" "I supposed elk were brown;" and others similar showed plainly that had the elk "frozen" the young ladies would have passed by without distinguishing them from the gray stumps and short lengths of silver logs visible in the thick undergrowth. For a moment or two the animals appeared to be milling about; then an old cow, as is usually the case, took the lead and presently there was a long line quartering the ridge a few yards ahead — and here came two additional surprises, for where the ladies had at first seen a dozen or so elk in the brush, fully fifty were now bounding along, and although they did not seem to be moving rapidly, it was found impossible to head them off or even to reach the hindmost, although but a short distance away on an open trail.

By repeated timing, I have found that a band of elk, travelling single file, will jump a log practically two seconds apart. Thirty of them will cross a ridge in very little more than sixty seconds, "a panorama of surprising brevity."

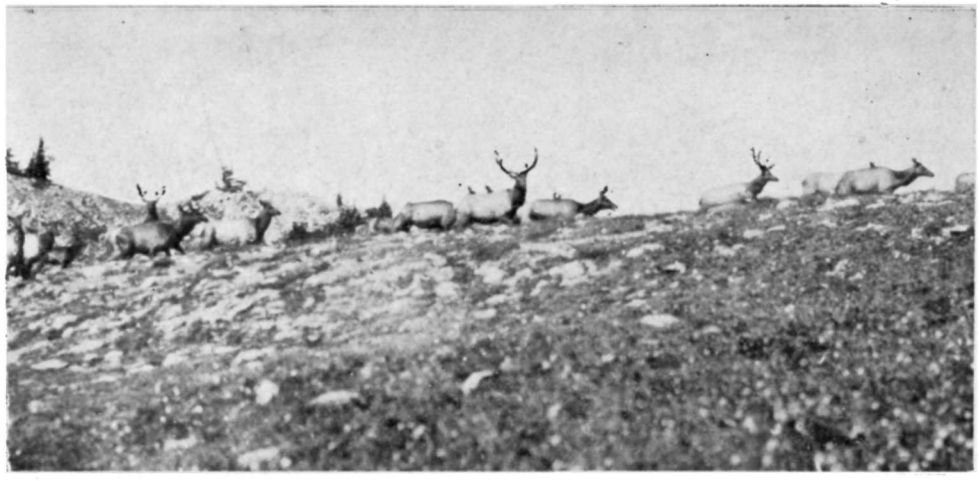
The Elk Trails

Elk, usually travel, not up the streams, but along the crests of ridges, where are comparatively few windfalls. Their main trails are as well defined and worn as deep as cowpaths. One acquainted with the lay of the land, proceeding gently and cautiously, can run nearly all the elk in a given area up over a certain trail, and that without unduly alarming them. Thus, by way of entertaining J. N. Bowman, of the State University, who had given a lecture on mountaineering for the benefit of the Klahhane club, a few of the members put on an "Elk Parade," marching eighty-five of the animals up the trail and within fifty feet of their guest.

The party had been to the Olympic Hot Springs, where Dr. Bowman had had the novel experience of diving from a seven foot bank of snow directly into a hot water pool. On the return a small band of elk was first rounded up, and when later, a couple of miles further along on the Hot Springs trail, four or five elk were seen lying down among the trees of the river bottom, two hundred feet below, the boys slid down and drove them back toward the main elk trail, while Dr. Bowman, my daughter Mae, and myself went back a quarter of a mile and took a position at the edge of the

ridge. The animals came on through the underbrush whistling to each other, and as each broke out from cover, it would stop for a moment to size up the intruders, who were standing some fifty feet distant. Occasionally one would crowd by another, looking over the other's back; sometimes four or five would be crowded together in a bunch. This is a characteristic habit of the elk, as is clearly shown in two or three of the accompanying illustrations. At one time there were nine in an even row, the first having stopped and each of the other eight having came on until its head was alongside of its companion. This was caused by my having gradually moved to within twenty feet of the trail; they stood for thirty feet and even for twenty-five, but twenty was over the line of safety and they side-stepped and circled around to gain their trail a few yards above. Finally two large bulls, carrying six-point antlers, reached the cross-trail, but refusing to cross or even circle the trail, started on the run alongside, bounding over small logs and sticks, while I kept even with and some thirty feet from them by running along the open and level Hot Springs trail.

On another occasion a few months ago, when returning from a trip to the springs, we had the novel experience of being surrounded by elk for half an hour. Noting two or three coming along the nearly level ridge, I went back to get the club's professional photographer, Mr. Crisler — recently from Florida and a stranger to the ways of the elk—and post him by a stump where he could not fail in securing one or more excellent negatives. Then, having lost track of those first seen, we went



Everett's Boulder Creek Herd

down into the brush to drive out others of the band; they came up to the pony trail, doubled back, and back again, and for some minutes one could not tell whether the noise twenty or thirty feet away in the dense brush of the burn was made by a companion or by one of the animals. When it was all over, we had a bull, one of the three or four first seen, standing by a ledge of rock two hundred feet above and refusing to move; a small band slowly climbing through the open timber of the mountainside above, and two or three dozen others gone, we knew not where nor how. Oh, the pictures? Well, because Crisler never dreamed of getting a snap closer than a hundred feet, his negatives were from seventy to seventy-five feet off-focus.

Once Common on Mt. Angeles

It has not been a great while since the Boulder creek elk, which still use the lower Hurricane Hill trails, travelled regularly along that high grass ridge, even to the head of the Dungeness river. They climbed the easy slope up the south side of Mt. Angeles and frequented the parks at the head of Little river and Morse creek. Two years ago I found well-defined tracks in Starvation Flat, on the north side of Mt. Angeles and not more than six miles in a straight line from Port Angeles; that same summer tracks were seen on top of the mountain by members of the topographical survey. Elk antlers and bones are to be found today along the First Peak ridge of the mountain.

For several years prior to the establishment of a continuous closed season on elk, there were

none north of Anderson's ranch, within at least ten miles of the Olympic Highway. Undoubtedly, with their continued if slow increase, and with the establishment of a game refuge or sanctuary extending from the northern boundary line of the National Forest and including all of Mt. Angeles, we might reasonably expect them to again become a fixture in their old-time haunts.

The Elwha Elk

The Boulder Peak-Mt. Angeles elk are especially interesting because of their range being on the very edge of civilization. They constitute, however, only one band out of the several hundred in the Olympic Peninsula, of which by far the greater number live on the West Side, in the watersheds of the Hoh and Queets rivers. A few small bands make their summer homes in the parks at the headwaters of the Elwha, such as the Basin and the Low Divide, while others frequent the alpine parks of the Goldie, Godkin, and other tributary streams. Possibly there are, in all, seven or eight hundred of these Elwha elk. In the late fall, as the snow deepens at high elevations, the various bands work down stream, even to Humes' ranch and below. Occasionally an old elk will remain well up river. Mr. Humes knowing of at least one instance where a bull yarded at the mouth of the Godkin, eight miles from Elwha Basin. But these are the exceptions and the herds will be found wintering from the mouth of the Hayes north at least to Geyser Valley. At Humes' and Anderson's, where are good-sized pastures and meadows, the elk make themselves nearly as much at home as they would

were they so many cattle. While they never actually mingle with the ponies, nor, in fact, come closer than one hundred feet, they do not appear to pay any particular attention to them; often they are within two hundred feet, just across a small stream which crosses one of the meadows. There is seldom a morning during the late winter and spring but that Mr. Humes can look down from his kitchen windows on a bunch of elk, and it has even become part of his daily round of duties to drive the more familiar animals off into the brush, that they may not force the ponies to go on short rations.

However, there is always something to offset the little trials and tribulations of life, and Mr. Humes tells of returning home one evening in April, a year ago, to find an entire stranger in the house already at home and busily engaged in preparing a dinner of spuds, rice, etc., as though camp cookery were to him the regular thing. The gentleman introduced himself as Bailey, a common enough name, and it was quite some minutes before Mr. Humes, so he says, realized he was entertaining Vernon Bailey, chief field naturalist of the government biological survey—or perhaps, in view of the progress toward dinner, it was Bailey who was doing the entertaining. He had taken advantage of a couple of days' spare time to come down for a close-up look at the Roosevelt elk and Grant was able to exhibit four bulls in his upper clearing the next morning, a sight well worth the trip and the ten mile walk from town; besides which Mr. Bailey saw a large number of others on his return trip down the west side of the river that day.

Although it is to be presumed that any animal will recognize as its home that particular section of country where it was born and where its first year was spent, and will be far more likely than otherwise to remain in that vicinity during the succeeding years of its life, it does not necessarily follow that any particular band of elk always consists of the same animals and their progeny. There is no evidence to show, and it would be a very difficult matter to prove, that the Elwha elk always remain on the north side of the Main Divide and that those to the south and west never get over onto the northern ridges and remain as members of the Elwha bands. Similarly, it cannot be known that all the elk of the Boulder, the Lillian, the Hayes, or other streams, always return to the old summer feeding grounds.

George Welch, of Port Townsend, who spends part of each year on a camera-hunting trip to the Mt. Olympus country, and who is familiar with the elk and their ways, says he "is convinced that the elk change their feeding grounds from time to time and doubtless for various reasons, such as slides blocking a pass to certain sections, too many human interlopers, and possibly at times the death of one of the older animals, during a long, hard winter, may throw the leadership to one who elects to lead the band, the following spring, up an entirely different tributary. In September, 1904, the Cat creek basin, though carrying old and deeply worn trails, showed no evidence of having been frequented by bands of elk for five years past, at least. In the same month of 1919 the old trails were regularly used and were crossed and paralleled by new trails made by bands of elk as large,

apparently, as those of the 'trailbuilders' previous to 1904."

Plunged Over Olympus Precipice

Mr. Welsh also tells an interesting experience had with a small bunch of bulls on one of the Olympus glaciers. He says: "Most mountaineers or hunters have heard stories of cornering animals in some peculiar pocket in the mountains, or at least they have had visions of some time, somehow, pulling some such stunt. There is, for instance, a good story, familiar to most of those who know the Olympics, regarding a pass on the south fork of the Hoh, where an ancient game trail up the valley passes through a gorge on a narrow ledge, which breaks off abruptly to the river one hundred feet below. The Indians, it is narrated, in the days when the yew bow served the purpose of the present automatic, located this natural death trap and utilized it in securing their annual supply of meat. This was done by blocking up the narrow ledge with debris, when they would locate a band of elk in the adjacent territory and rush them down toward the obstruction. The elk, in frantic efforts get over, would either fall down the cliff or be shoved off in the crowding. There would be waiting, below in the box canyon into which they fell, Indians armed with clubs to finish off those elk still alive and to gather them in until they had enough 'easy meat.' Some genius has in late years improved this story by laying freshly peeled cedar bark at the obstruction to insure proper functioning of the trap. Any one who has endeavored to cross a stream on a freshly peeled log may see some

humor in the addition to the story.

"Our experience with the bull elk on the Olympus glacier had its points of similarity. We had thrown off our packs and sprawled out in an inviting bed of wild flowers on the bank of a picturesque mountain lake, tired by the final pull over the sharp six thousand foot ridge between the North Fork of the Hoh and Mt. Tom creek. Here, we decided, was the last practical camp before beginning our climb the next day over Olympus to the Elwha Basin. Between us and Olympus was the lake and a long snow and ice field, the lower edge of which was fringed with outcropping black rock having almost perpendicular walls reaching down into a long ravine three hundred feet below. The nose of an old glacier blocked the upper end of this ravine, and its lower bank a rough hogback with some scrub trees and a very plain game trail on its crest, easily seen from our position a quarter mile above.

"We had noticed fresh elk sign on the grassy slope between us and the top of the ridge one hundred yards above, and were not surprised to soon locate five bulls gazing intently at us from a small bench at our upper right, where their massive horns had at first been 'camouflaged' by some dead snags. They disappeared for a moment, then reappeared, evidencing that some vital and violent action was about to be pulled. We realized then that we were sitting on the only natural route of egress of these old boys from their usually manless paradise.

"They quickly decided, and we next saw them swiftly negotiating a narrow ridge of rock at the

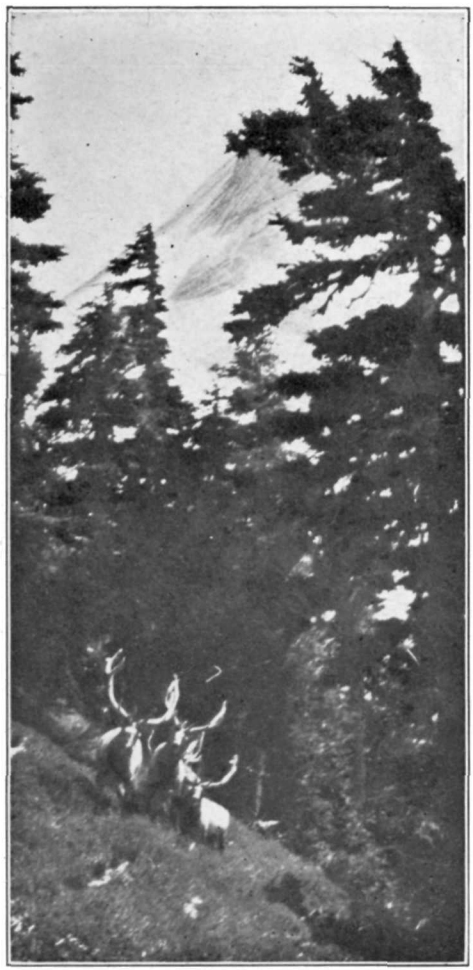


Photo by Welch
"Four Old Boys"

base of another pool above, soon reaching the long snowfield, over which they finally disappeared as mere specks on the horizon. It struck us then that the only outlet they had was the aforesaid trail below us. We looked up the ravine when we reached the bottom and saw them picking their way over the nose of the glacier at a lively and daring rate, apparently headed for the trail. We hurried for the hogback trail and arrived just in time to look the lead bull right in the eye.

"Now a great many sarcasms have been cast at the photographing of 'trained' wild animals of the Olympics. It has, for instance, been stated that a bull elk always stops for his picture when he sees you have the makings. This is truly a compliment to both the bull and the photographer, as those know who have had some experience in that line. Old Bruin, apparently totally oblivious to everything save the appeasing of his hunger with the tender shoots of mountain grass, catches scent of the intruder and, in reckless disregard for obstructions, disappears at a wild pace. But not so, these veterans bearing down with towering antlers fairly hanging over us, their tongues out from the exertion of the long run. They knew they were on the only outlet; they meant business. We got the photo, then draped ourselves around a friendly rock, thereby exhibiting an intuition the ordinary man has not forgotten even in this late day.

"Seeing that only four bulls were in this party and having plenty of time before making camp, we took up the back trail in quest of the fifth bull, apparently holding out on us. We found where they had slid down an almost impossible wall onto the glacier from the snowfield, which latter

we reached with great difficulty. We then tracked them down a short ridge overlooking a great serrated field of ice at the head of Glacier creek, soon coming to a point where they had evidently turned back, all save one. He, magnificent bull, had evidently got beyond good footing, lost his balance and slid over the cliff, which meant a clean fall of from five to eight hundred feet onto the blue crevassed glacier below.

"We were glad to reach terra firma and as there appeared to be no point from which we could view the spot on which the body would land, we silently made our way to camp, thinking of the many possible unheralded tragedies on those heights and among those grim canyons."

Elk Are Miscellaneous Feeders

The elk are miscellaneous feeders, eating not only grass and weeds, but browsing on nearly everything, even to stripping the thorny leaves from devil's club. Willow bark appears to be a favorite food, their chisel-shaped teeth being particularly adapted to the stripping of the trees. Grant Humes, who has seen them at work, states that they start low down, near the ground, choosing willows not more than two inches in diameter, and by shoving their heads upward with considerable force easily roll up a strip of bark. They also enjoy the roots of salal and Oregon grape. Dry ridges covered with salal bushes, such as "Salal Ridge" on Hurricane Hill, are favorite haunts. They work over the bench lands in heavy timber, leaving the surface torn up, much as would a drove of pigs, getting at the roots, young shoots

and certain mosses they like. Often, too, they will reach up for a mouthful of the usnea or bearded moss which hangs from branches in damp woods, sometimes standing on their hind legs, their fore-feet up against the trunk of a tree or upon a large prostrate log.

These notes on the feeding habits of the elk recall a story that appeared in Recreation several years ago, in which the contributor, desirous of obtaining a prize head of the Olympic elk — a cap sheaf, as it were, for his collection of trophies— came out to Washington and climbed to the summit of the coast range. Below him, he said, stretched a vast snow-covered plain, dotted here and there with occasional trees. Descending, he soon found elk tracks, the size of which would indicate that the Lord of the Realm had but lately passed that way. All day he tracked the animal without being able to approach within rifle range. Realizing his only hope of getting a shot lay in the possibility of keeping the elk on the move until hunger and weariness would cause his speed to slacken, the hunter followed him incessantly for two more whole days. Amazed at the ability of the animal to keep up the pace without food, the hunter began to notice things more closely, when he found the elk was cropping, as he ran, young shoots of fern which had come up through the snow, thereby maintaining his strength and courage. Grievously disappointed, the hunter retraced his steps across the plain, again climbed the range, and descended to take the steamer for civilization and home, a sadder, and according to his own story, a wiser man.

For the benefit of eastern readers, if such there may be, it should be stated that this story in Recreation might possibly have been true — with one or two exceptions. The writer thereof would not have crossed the mountains in order to reach the interior; he would not have found a vast plain, but a mass of mountain ridges having slopes of forty-five degrees or better; their lower slopes would have been covered, not with scattering bushes, but with a carpet-like forest composed of trees ranging up to twelve feet in diameter and averaging from one hundred and twenty-five to one hundred and fifty feet in height; with the exception of a few small gravel flats along the streams, he could have thrown a rock across any level spot within the Olympics; should he have found snow in the valleys, there would have been no fern growing up through, and had there been, the elk would not have eaten it.

Have Great Craving for Salt or Other Mineral Matter

During the average season, when there is little or no snow in the lower river valleys, the elk come through the winter in fair condition, but when the snowfall is heavy and lasts for some weeks they grow thin and often become so weak they lie down for the last time. Many young animals as well as older bulls die in this way, while others meet with accidents of one kind or another. Now and then one is drowned while attempting to swim across the river above a canyon, or, in the case of very young calves, in attempting to swim the swollen streams in June, before they

Photo by Welch

In the Mt. Olympus Country

are strong enough. Mr. Humes reports one instance of an accident, that of a young bull having broken a stifle joint, doubtless in jumping over a log. He was very poor, badly infested with ticks and barely able to stand, weaving back and forth. When attempting to clear a log he would fall forward on head and shoulders, being unable to direct himself with one hind leg. Game Warden Pike was called and shot the animal, such flesh as there was in the carcass being used for cougar and cat bait.

Mr. Everett tells of occasionally finding dead elk, covered with wood ticks, and so thin they appeared not to have a pound of meat on them. He would recommend the use of rock salt — believes the Forest Service should keep quantities of it in certain localities where it would be always accessible. Doubtless in an early day the elk came down to salt water occasionally during the winter and spring months and fed for some little time on the salt grass of beach and sand spit. The prairies, such as that at Sequim, were favorite resorts, and, in fact, they travelled up and down every stream. Possibly it was instinct, possibly remembrance of such visits when the world, to him, was young, that brought a bull elk down from the hills to the base of Ediz Hook spit several years ago. Anyway he came and wandered out along the four mile strip forming the outer edge of Port Angeles bay, and even to the lighthouse at its end. Here, cornered and frightened by the keeper, who possibly might have enjoyed his presence all winter, the bull took to the water, swimming two and a quarter miles across the bay to the mouth of Ennis creek. His approach was seen by boys, who gave chase

with a dog, and in a moment he was on his way to the protecting arms of Mt. Angeles.

The elk and deer licks, most of which are found along the rivers, where blue clay is present, are much frequented, there evidently being mineral salts in both clay and water. Game paths lead to them from different directions and one has only to get the direction of the wind to approach quite closely to the elk, or to sit down near by and await their coming. Notable licks are those on the hot springs side of the Elwha, and at Crackerville near the mouth of the Godkin. Although both deer and elk frequent these places, the deer never mix with the elk; always there is evident a certain aloofness, the deer keeping a hundred feet or so beyond and uphill.

More peculiar by far than the licks are the cavities the elk have dug underneath the roots of the larger trees along the mountainside above "Smoky Flat," and in other locations. Here the soil appears to be close-grained clay, and to have been scooped out by the tongues of animals, both elk and deer. Some of the cavities, of which there are many, are four inches in diameter, some eight and ten, while others are as large as a bushel basket, doubtless the work of many elk, extending over a long period of years.

In the Anderson field, where Mr. Humes has made a practice of salting his horses, there are pot holes a foot in depth. The elk find the salty spots and when the ground is soft after rains they follow the dissolved salt down to get the last little taste. As Mr. Humes says, their taste must be very fine to enable them to detect anything at the

Photo by Welch

Rovers of the High Places

depth of a foot, when the horses had practically licked the ground clean.

Elk Known to Eat Their Antlers

One of the most interesting, and even today least understood, things concerning the elk is the fact that they, as well as all members of the deer family, including the moose, shed their antlers annually, growing a new set within the short time of four months, the outer portion being ivory-like in its density. They grow from, or on, two-inch high pedestals which are part of the bony structure of the skull. Shedding usually takes place early in April, occasionally both antlers dropping off within a few hours. Mr. Humes says he has known of four instances only where the antlers dropped within a few feet of each other, in one case nine and in another twenty-one feet apart. Generally an animal will move around to a considerable extent in the course of a few hours, making the possibility of finding a second antler very remote. I happen to know of one such instance, when Dr. Young of Seattle found, well up on the mountainside, a fine antler and brought it down to camp at Crackerville where it proved to match perfectly with one secured, a few days before, on the river bottom. Few antlers are to be found that have not already been ruined by the mice and squirrels, which gnaw the smooth tips of the tines and soon spoil their beauty. Mr. Humes has seen squirrels thus perched on and gnawing at the end of tines at the Crackerville camp. Being composed largely of animal matter — 39 per cent.

to 61 per cent. mineral—such antlers as lie around in damp places soon begin to decay and the harder outer surface once breaking down, disintegration is fairly rapid. The tines soften and go first, until finally there may be only from four to eight inches of the heavy stub left, which naturally resists for a long time.

According to Mr. Humes, elk often work for hours on old antlers, scraping off the surface with their chisel-like teeth. He has antlers which show marks of their incisors, and occasionally the story of their work is found plainly written in snow or moss where they have shoved the antler around. An assistant of Mr. Humes, Lewis Isbell, on one occasion, by taking advantage of the cover afforded by large trees, actually approached within twelve feet of a bull which was so busily engaged in thus scraping away that he had not noticed the intrusion. Certainly there is something in the earthy or mineral material that the elk like and which their systems require.

The Growth of New Antlers

Within a few days the pedestal or disk upon which the antlers grow is covered with skin; this gradually swells into a bulb which becomes, within two weeks, the size of one's fist, and which is enclosed in a thick, soft, velvety skin, covered thinly with quite short hair. The antlers now make a daily growth of at least a third of an inch, until, by the latter part of July, they have attained their full length. The tips now take form, blunt ends gradually shrinking to sharp points, and the shrinkage

continuing on down to the base of the antler. By late August or early September the velvet is dry and is scraped off on young saplings, many of which they rip into shreds or tear out by the roots; also, they plow up the ground, polishing the ends of the tines. Soon their necks begin to swell, they become pugnacious to a degree and are continually bugling and seeking combat.

The calf or elk of the first year has no antlers; the yearling has single pointed spikes from eight to sixteen inches in length; the two-year-olds have two or three points, and the fully matured Roosevelt bull has from five to seven on each antler, six, perhaps, predominating. After an elk has reached the age of four or five years, the number of points or tines on the antlers do not with any accuracy indicate the age of the animal, a fact quite commonly misunderstood. Occasionally there are freak antlers having eight or nine points, and in later years when their vitality is reduced the antlers may be considerably smaller than before.

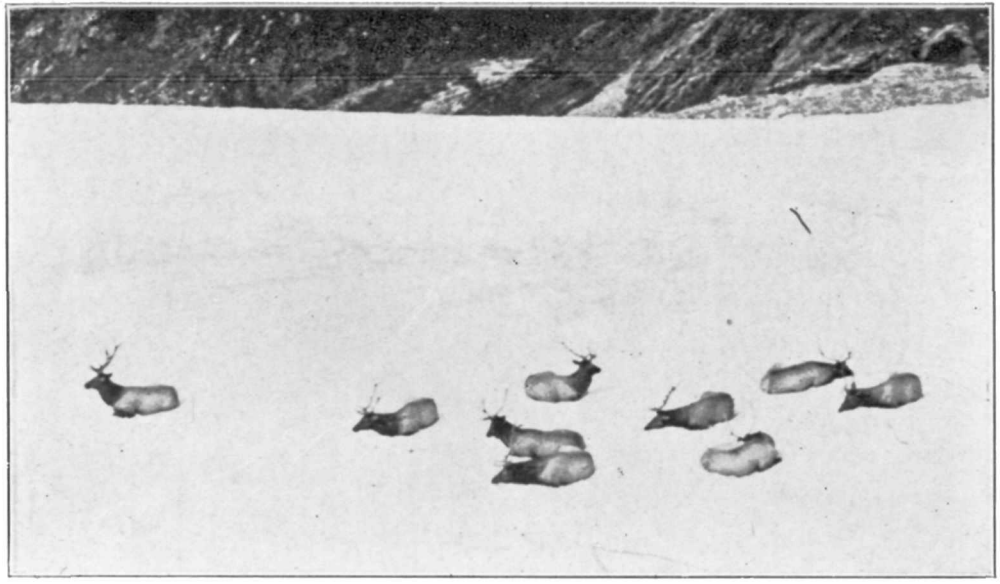
Bulls Herd Together

During the time their antlers are in the velvet, the bulls, taking no chances on bruising anything so tender, lie around in the high mountain parks, swampy places where there is good feed and the best of cover or shelter, to which they retreat on the slightest indication of danger. Accompanying illustrations show several small groups of bulls, as well as herds of cows in which there are no old bulls. It will be noted that in a number of instances the elk were either on or near snowfields, where the open character of the country made ap-

proach difficult, and doubtless they thus find relief from the savage flies that render life a burden in the summer at these high altitudes. One picture, by Prof. J. B. Flett, ranger in charge of Rainier National Park, shows a herd or group of nine bulls; it has been enlarged so many diameters in order to bring out the elk and their antlers that the beauty of the view is lost; the original photograph shows the mountainside — Mt. Barnes — even to its crest, but in it the snowfield is a detail and the elk mere dots. On this trip (to Olympus) Mr. Flett and I found, particularly in Queets valley, evidence on every hand of the presence of elk, even to fresh beds in the long grass, but the wind being wrong we had never a glimpse of one. How so large an animal or animals can slip out of an open park and away so carefully as not to be seen is a mystery, in fact, positively uncanny until one makes their closer acquaintance. I have even seen the grass rising in a bed which an elk had left; tracks in which water was dripping indicated the direction taken, but no glimpse of him was to be had. Speaking of the number of bulls comprising these groups, Mr. Humes states the most he has ever seen was fifteen; this was in the spring, April 17th, and all of them were still carrying antlers, which was very unusual so late in the season.

Elk Are Polygamous

Elk are polygamous, each herd being headed by one bull only. At the beginning of fall, soon after the small groups of bulls have joined with the larger ones of cows and yearlings, trouble begins. The mild, retiring disposition evidenced during



Flett's Nine Bulls on Snowfield

the summer months changes to one of extreme pugnaciousness. The stronger, experienced fighters appropriate their herds of cows and the band is broken up into a number of smaller groups, each composed of as many cows and calves as the bull which has them in charge can control. Meanwhile the other bulls hang about, one after another trying his luck with the head of the herd. He, beside himself with rage, jealousy and passion, acts like a crazy person, making charge after charge toward the other bulls. Many of these mad 50-yard rushes are clearly unnecessary, being pure bluff on his part, although he is ready and willing to fight when necessary. After two or three weeks the strongest bull, unable to eat or rest, gradually loses strength until he is worn out, defeated, and driven off, sometimes deeply gored, to go limping about or lying sulkily in the forest glades — an outcast for the year, if not forever.

A Challenging Bull

The challenging and bugling of the elk during the breeding season is interesting and thrilling. Roosevelt describes it as "a succession of hoarse whistling roars, ending with two or three rasping grunts," while Hornaday would compare it to "a shrill shriek, like an English locomotive whistle, sliding down the scale into a terrific bawl." Occasionally the challenge will be given in a rising scale, different individuals having their own calls. Always it is startling, says Mr. Humes, who has been quite close to them on many such occasions. Grant also tells of a unique experience, that of a bull challenging during the night and from the

distance of only a few feet. He was camping with an army captain, near a mudhole just below timberline, when a large bull elk came within fifty yards of their camp. "From time to time," says Mr. Humes, "the bull would bugle and challenge, being answered by another bull over a neighboring ridge. Then he would hook and tear up the soft earth, grunting and snorting meantime; I could hear the tines ripping the grass roots. I took the electric flash and went still nearer, shining it towards his eyes, which glistened like two orbs of fire, at about one hundred feet distance. Finally he left in the direction of the other bull and I could only guess what ensued."

Sole Spectator at an Actual Fight

Occasionally it has been Mr. Humes' good fortune to be a spectator at an actual fight. To one such, which occurred near Crackerville in the middle of October, two years ago, he was attracted by the sounds of crashing antlers, which he heard at the distance of two hundred yards and which sounded as though two men might be actively sparring with heavy bones such as the femurs of horses. The fight was staged on a gently sloping side hill, forested and covered with salal and huckleberry brush, being, in other words, a comparatively open spot. Mr. Humes slipped up to a box seat in the lee of a good-sized tree from which point of vantage he watched the fight, which went on all over an acre of ground, the contestants being at times two hundred feet distant and at others little more than fifty feet away. In their struggles back and forth, lasting ten minutes by

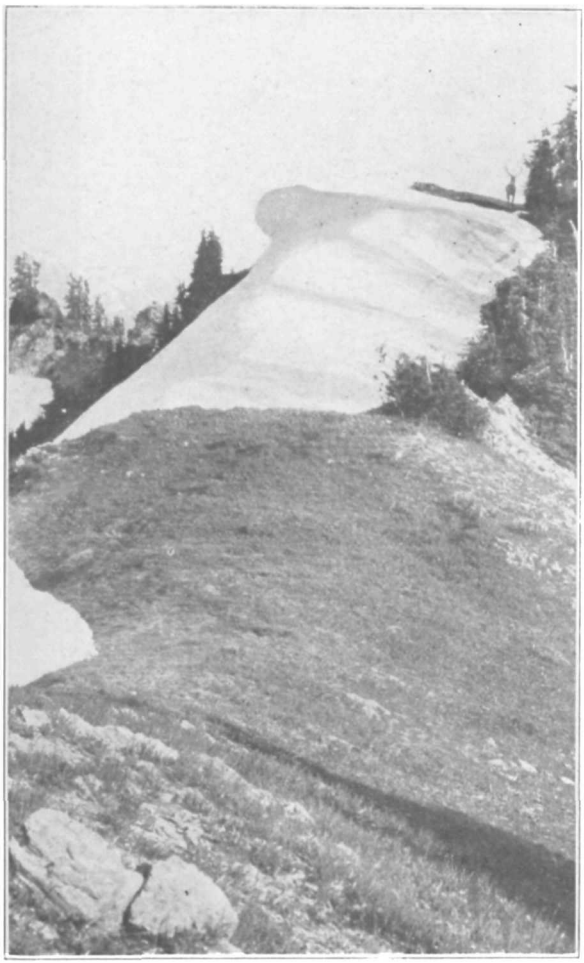


Photo by Welch

The Sentinel

the watch, for Grant was particular to time them, they thoroughly uprooted the ground, the brush being actually torn out and old logs flattened and the pieces strewn about. The thick brown hair on their shoulders stood erect as they lunged at each other, shoving with their full strength and endeavoring to twist each other about. Occasionally one would be able to shove the other uphill, but as a rule the advantage lay with the uppermost. Their eyes were glassy-green with rage and he fully expected to see them try to gore each other whenever they broke away, but each seemed to be trying to wear the other out and if either momentarily had the advantage he never attempted to follow it up. For one thing, the exertion was terrific; their sides were heaving like huge bellows while their mouths were open with tongues hanging out. Besides, Mr. Humes says, it was very striking to see them wheel their hind legs whenever a flank was exposed; they were very agile and would whip themselves into line as quick as a flash. They would walk deliberately toward each other with heads well down so that their noses were tipped back out of reach of the frontal tines, until their antlers locked and the struggle would be on again. At one time, for at least fifteen seconds, their antlers were locked around a two-inch hemlock, neither being able to break away. Finally they worked further and further away till the end of the fight came over the curve. Mr. Humes could have been present at the finish, but he fully expected them to work back. One of the contestants had disappeared, while the other, his sides heaving and eyes still glassy, had evidently had more than enough. No cows were in

sight, the bulls travelling through the brush alone and one answering the other's challenge until they came together.

Skull Broken in Fight

A most unusual occurrence was the result of a fight on one of the ridges above the Olympic hot springs, a year ago, in which one of the bulls had his skull cracked lengthwise, so that the antlers were folded together, as shown in the accompanying photograph. The noise of the combat was heard by Mr. Everett when fully a half mile away, but he was unable to reach the scene before the climax. Whether the skull was actually broken during the conflict, or whether the bull was hurled down with such force as to leave him thus twisted and doubled up will never be known. Mr. Everett believes their antlers became locked and that the dead bull's neck was broken in the twisting, the skull being split by one antler striking the ground as he fell.

The exceptional length and weight of the antlers may have had something to do with the result in this instance. They measured forty-seven inches, or almost four feet in length, with a spread of four feet six inches. This would be far from being a record head in comparison with the antlers of the eastern species, which are long and slender, but the great roughness, massiveness and weight of the antlers of the Olympic elk must be taken into consideration. Mr. Everett says he has known of but one larger set, it having a spread of four feet eight inches. Mr. Sheard, for years a fur dealer of Tacoma, offered $500 for an elk's head having antlers

Skull Broken in Fight

with a spread of five feet or better; it was a standing offer and I believe was never called for.

One will gain some little idea of the great size of these antlers if he will compare the length of his hand and forearm with the brow tines of a convenient elk head. In the average man the length from tip of fingers to elbow will be found to be about sixteen inches, which is just the length of the brow tines of this big elk. The main shaft, between tines, is nineteen inches in length and has a circumference of eight inches, while the circumference above the bur or crown is twelve inches. While you are comparing the length of your forearm with the brow tines of that elk head you have so admired, and while you are considering how long those antlers would be if they measured nineteen inches between tines, you might also wrap a twelve inch strip of paper around just above the bur; the chances are you will realize that the head you are looking at is a puny specimen, indeed.

This same ridge, on which the big bull was killed, has been the scene of many a battle in the past; in one other recent instance an elk had one of his antlers broken off. This occurs sometimes, though seldom, when as a matter of course the vanquished bull must wear the stub until shedding time the following spring. There comes a time, just before the antler falls, when it might easily be pushed from the head with one's finger. Occasionally the base of the antler shows a trace of blood, but no bleeding accompanies the shedding. Never is an antler known to break loose from the skull during a fight; always the break occurs above the attachment to the pedestal. And, as we have seen in this case, when something *must* give and

the antlers are too heavy, too massive to be broken, the inch-thick skull splits and the neck breaks before an antler will part from the pedestal.

Young Elk Are Spotted; Born Along the Rivers

The young, most of which are born in the thick brush along the river bottoms, are very pretty, being spotted like the fawn of other deer. For two or three days they lie quiet and the mother remains close by, but soon two or three or more cows may be found together, with the young playing in the grassy openings, where they may easily be caught and petted.

It is claimed, so I have read, that the calf elk gives off no scent; that a wolf or cougar will pass by within a few feet and not know the little one is there. It may be true, but I have never seen nor heard the statement made by one who claimed to know, of his own experience. And if a man were to state he had actually seen a wolf pass by a bunch of brush or alongside a log where a calf elk was known to be hiding, we probably would call him a nature faker and let it go at that.

Inasmuch as the elk are generally born in dense thickets, where no wolf nor cougar would be likely to be prowling about, and where there would be no necessity of their going when they can so easily pick up young elk and deer along the trails or in the open timber, it would seem to make little difference whether or not the calves gave off scent during the first few days. Also, as the calves do not move around, undoubtedly their leg glands are not active.

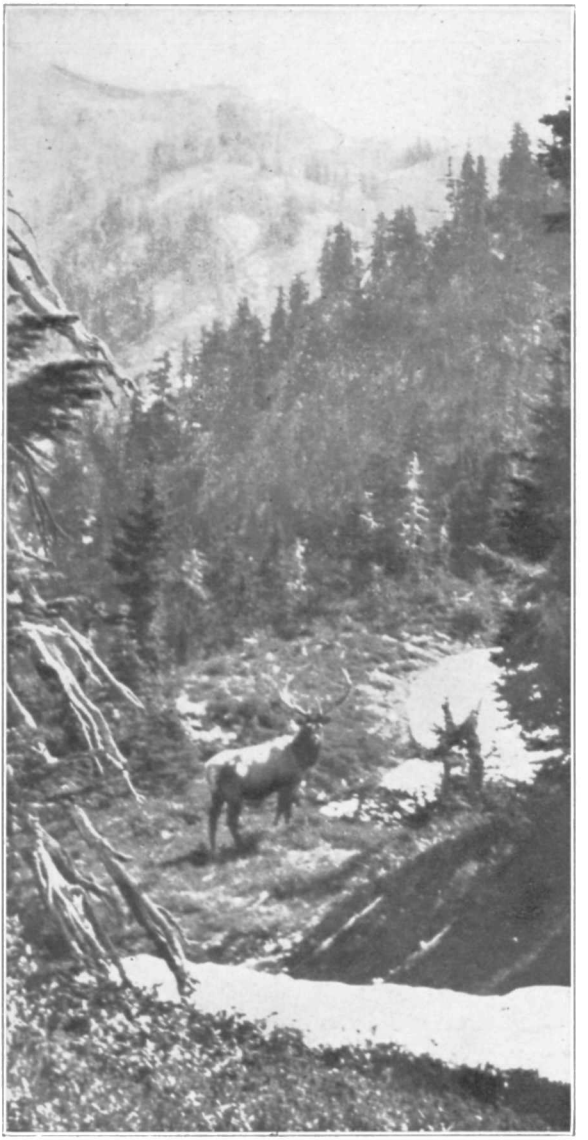
I asked Mr. Humes what he thought of the published statement. "Most remarkable, if true," he replied. Mr. Everett thought there might possibly be something in it, at least to the extent that the scent would not be very strong. He had personally seen his hound, trained to the tracking of cougar and other predatory animals, completely baffled through the lack of scent left by a tiny fawn, which scooted around a thicket of small trees, in plain sight of the dog. All efforts on the part of the dog to follow the fawn or pick up the scent proved unavailing.

In this connection, Mr. Everett tells of seeing and hearing an elk cow warning her calf to hide, much as a grouse will warn her young when danger threatens. And just as the grouse chicks will fly a yard or so and alight in plain sight and yet be perfectly concealed the moment they strike the dead leaves, so the elk calf disappeared right in its tracks. It seems Mr. Everett had formed a partnership with Slim Farrel and Charley Anderson for the purpose of locating the Boulder creek hot springs, now known as the Olympic springs, some six miles up the Boulder from the Elwha river. They were on their way from Anderson's place, across from Humes' ranch, to the mouth of the Boulder. This strip of bench land above the canyoned river is an old burn, covered with criss-crossed logs and brush and has always been a favorite resort for elk during the calving season. In fact, about three square miles along the river, entirely worthless for any other purpose, should be set aside as a game refuge or sanctuary. The men had reached FitzHenry creek and sat down to rest, with their backs against a large log, when a

small bunch of cows and calves came up out of the fifty foot gulch, passing in front of them. As they came alongside and saw the men, the nearest cow put her nose down on her calf's back and blew out her breath in a short, sharp warning; the calf never moved in its tracks, but as far as they could see simply vanished into thin air, while the mother went on with the others. Mr. Everett then went up and got the calf while Slim found another; the little animals were perfectly tame and they played with them for some time.

The Toll Taken by Predatory Animals

Practically speaking, the elk have only two enemies, the timber wolf and the cougar, but because of the depredations of these, only a small percentage of the calves attain maturity; in fact, Mr. Humes believes that at least nine-tenths of of the calves are killed during the first months of their lives. Undoubtedly each adult cougar and wolf kills at least one young elk or deer a week; sometimes they return for additional meals from the carcass, while again they find game so plentiful and easily secured that new kills are made each day. The cougar doubtless works ahead of a herd on the side hill and lies in wait until an animal of the proper size wanders out from the herd and comes within reach of his rush, when he springs upon his victim's back and bites through the back of the neck, or crunches the bones of the face from nose to eyes. In one instance, last winter, Mr. Everett surprised a cougar in the act of eating a meal from a young elk which he had doubtless killed two or three days previously, as the carcass



A Lone Bull

was half gone; the dogs put him up a tree within a few yards. Upon looking around, Mr. Everett found evidence that the cougar had not only killed the yearling, but had jumped upon and severely clawed another and older elk, which, after carrying its assailant a few yards, taking prodigious jumps the while, had made its escape. The hair of the elk, which is hollow, brittle and coarse, is long and thick in the spring, and comes out easily.

Elk the Natural Enemy of Dogs and Wolves

It should not, however, be inferred that the elk are absolutely helpless, even though they carry no antlers. With their trim, sinewy legs, they are exceedingly nimble, and a blow from their hoofs, landing fairly, is more than likely to put either wolf or cougar hors de combat. It is doubtful if a wolf is ever able to pull down a full grown elk, unless it be one that has been accidentally injured or which has lost a considerable portion of its ordinary vitality. Judge Caton, author of "Antelope and Deer of America," kept a number of varieties of deer and elk for years, while making a study of their habits. He early learned that the entrance of a dog into the elk park was a signal for an immediate charge on the part of the cow elk, when the dog or dogs were speedily put to rout. G. W. Russ, an Ozark mountain rancher, writes of having suffered great losses to his flocks of sheep and goats until he learned that the elk is the natural enemy of dogs and wolves. He found that a few elk in a thousand-acre pasture would

absolutely protect the flocks therein. His own dogs were so well aware of the danger that they could not be induced to enter the park. Judge Caton also wrote of having seen a strange dog enter his park and immediately tear off after a small herd of deer; desperately frightened, they ran to and among the elk for protection, when the chase was speedily reversed, the dog gaining shelter beyond a fence in the nick of time. During the incident two or three bull elk looked on as though only mildly interested.

The Domestication of Elk

"The flesh of the elk is superior in flavor to most venison and it is believed that large areas of rough lands in various parts of the United States could be economically used for the raising of these animals. The herds that summer in Yellowstone National Park and in winter spread southward and eastward into Wyoming, are said to number about thirty thousand head," according to D. E. Lantz of the Biological Survey, "and constitute the only large bands of this noble game animal, which at one time inhabited all of the country except the treeless portions. Smaller herds occur in Colorado, Idaho, eastern Oregon, Manitoba, Alberta and northwestern California. A band of the small California elk still inhabits the southern part of the San Joaquin Valley.

The Cougar

Olympics, Olympics, thy fortress of fir,
Thy cavernous hemlocks where world clamor stills,
Where never an elk hears the arrow's weird whirr,
A wilderness peace till the fierce cougar kills,
The fierce cougar kills,
His blood lust fulfills,
Thy shroud for the timid—
Gray flags of the hills!

—Meany.

The Cougar

HAVE you sat by the dying embers of the mountain campfire, where the stream was crooning its weird melody and gusty winds were moaning through the fir tops, and listened to the telling of ghost stories? the headless horseman, the rattle of chains, the dog's bristling mane, the terrors of the Hound of the Baskervilles?

Have you waited while the fire burned low, knowing that in a few minutes you would have to leave its comforting glow for your couch of boughs out beyond, in the darkness?

Have you felt the cold shivers up and down your spine, and your very hair rising as a particularly thrilling story reached its climax in the hopeless, unearthly cries of a woman done to the death? the wail of a lost soul? the chuckling, gloating laugh of a devil who has won in his fight with the influences for good?

No? You are a stranger to the mountain campfire? Then how can I tell you of the scream of the cougar, so you will appreciate and understand?

The first time I heard a cougar, in the late autumn some twenty-odd years ago, when wild animals were more plentiful in the Olympics than now—the first time—I can shut my eyes and hear that self-same cry today.

Night after night, at about the same hour, would come the series of cries. At first low, as though the animal were trying out its voice; a throaty call, possibly it might be termed. Then louder and louder, a cry you instinctively felt might be clearly heard for miles; one that neither stone wall, nor heavy forest, nor mountain ridge, might shut out.

Sometimes it came on the night winds from over the ridge in front; more often from the right, or the left. Sometimes it sounded as tho far away; again it was right there, right over there!

Was I frightened? Well, not exactly.

You see, the cougar—and a big brute he was—had just been trapped and was on exhibition in an open cage out on the sidewalk, in Port Townsend.

And I, I was working in the office of the Morning Leader, around the corner and two blocks away.

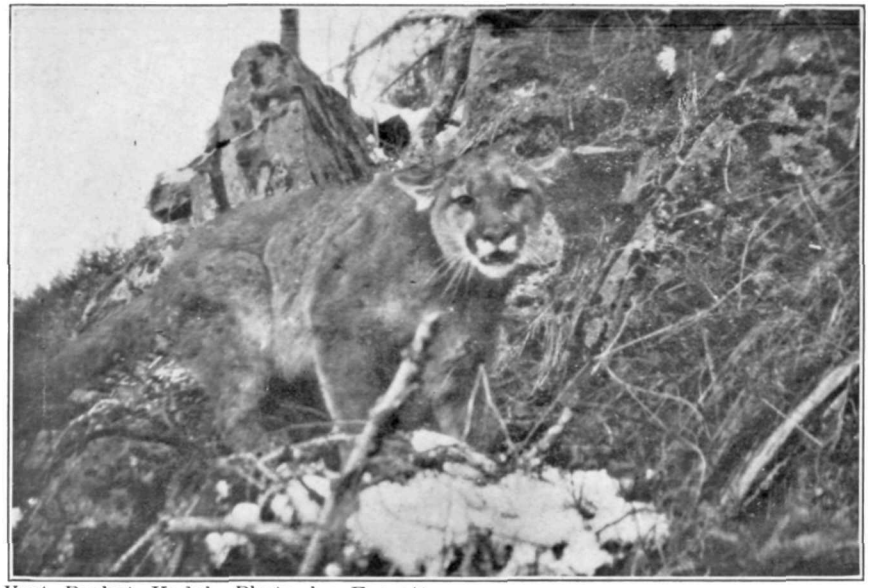
But, believe me, in those days Townsend was a quiet place, as quiet as the dying campfire on the mountainside, as quiet as a graveyard in the dark of the moon—aye, for weeks even the ghost had failed to walk.

And, almost, that cougar's cry would awaken the dead!

Terrifying Cries Not a Feature of Mountain Outdoor Life

Now, mind you, I do not say that the cougar's scream is a feature of outdoor life in our mountains. Moreover, I do not believe there is any truth in these tales of their terrifying cries. I have never heard a cougar scream, when out in the hills, nor have I ever known of anyone who has.

A hunter, prospector, cruiser, or camper, will lie



Vest Pocket Kodak Photo by Everett

Cougar Brought to Bay

down under any convenient shelter, beneath a large log, up beside a big tree, or out in the open, as the case may be, without a thought other than the comfort of his bed and a reasonable degree of protection from rain or heavy dew. There may be cougar in the immediate vicinity; he never thinks of them and wouldn't bother about them if he did. They may at times, though certainly very rarely, and then out of pure curiosity, come up within fifty feet or so and take a look at his fire, but they leave as silently as they came.

Several years ago D. W. Young wrote to a number of the best known guides and hunters of Wyoming, Colorado, Oregon and Montana — men like S. N. Leek of Jackson, Wyoming—asking as to their experience with cougar. None of them had ever heard a cougar scream; none of them believed there was anything in the story. Elkins, of Mancos, Colorado, wrote that he had hunted for twenty years, but had never heard the scream of a cougar, though he had killed over a hundred. Leek believes that all such stories come from tenderfeet, men who had heard a coyote, or possibly an owl. (Outing, July, 1917.)

Neither Mr. Everett nor Mr. Humes have ever heard a cougar make a noise that might be called a scream. Of course the cats all have their mating calls and their calls to their young, and, doubtless, like the bobcats, as well as the festive tomcat with which we are all more or less familiar, they grow real sassy at times in their conversation with each other—but none of these could be called a scream. As to the caged cougar above mentioned, while his call was hardly a scream, yet a nervous person might easily imagine it to be such. Doubtless the

popular belief was based upon cries uttered by a recently trapped and caged animal.

Glimpse of a Cougar Only to be Obtained by Chance

Neither may any man take unto himself credit for catching a glimpse of a cougar in its mountain home.

With dogs, one may follow the cougar's trail until the animal is overtaken and treed. The credit goes to the dog. One may, though rarely indeed, catch a glimpse of the big cat as it climbs or crosses an open ridge to shelter more secure. Now and then comes report of one of the animals having been seen trotting for a few yards up a mountain road, or of one being seen beside a stream.

Not that the cougar is a rare animal in the Olympics, but that he has learned well the lesson of self-preservation. By nature and by instinct, cowardly, sly, sulking, stealthy, and by education wary and suspicious, he finds little difficulty in maintaining complete seclusion.

A man may go into the timber or up on a mountain, find and stalk deer or bear, and claim and be entitled to a full measure of credit for his knowledge of the animal's habits and for his skill in hunting, but not so when it comes to the cougar. To chance, and chance alone, goes such credit as may be due for the obtaining of a close-up of one of these animals.

One of the best instances, coming to mind at the present time, of a chance glimpse of a cougar, was the experience of the passengers on one of the Sol Duc Hot Springs steamers several years ago.

They were coasting down from the springs in the early morning when the driver caught sight of a cougar as it was about to cross the road, several yards ahead. The engine shut down, their approach had been noiseless and, while the animal had seen them and was watching, it had not been frightened. Evidently the pangs of hunger were greater than inherited caution, or possibly there were hungry kittens and the all-compelling force of mother love outweighed personal consideration, for after a moment of suspense the cat crossed on its way down to the river, where, soon after, the passengers saw two deer which the animal was stalking.

Again, Mr. Morganroth, forest ranger in charge of this district, tells of seeing a cougar out in the open a couple of years ago, and no further from town than the southern slopes of Mt. Angeles. A new trail had been built up Little river to the park at the head of that stream, thence doubling back to the summit of Hurricane where are grass ridges miles in length, the feeding ground of hundreds of deer, and consequently the natural summer home of the cougar. Mr. Fromme, in charge of the Olympic Forest, had come down to go over the work with Mr. Morganroth, and they had reached the open country when a cougar, small, and doubtless possessing less caution than a larger and older animal, trotted across the trail in front of them—another chance encounter, such as Mr. Morganroth and others who spend much time in the hills experience, but which the average hunter or outdoors man may consider himself lucky to have once in a lifetime. Mr. Morganroth immediately gave tongue like a hound, in hope of putting the

animal up one of the scattering trees of the mountain slope. Instead, the cougar dove into a dense bunch of alpine firs, those trees whose tops may often be reached without standing on tiptoe, yet whose gnarled and twisted trunks are over a foot in diameter at the base, and whose lower limbs, resting on the ground, attain a length of from twelve to fifteen feet. Such cover is almost impenetrable; nor can one see into it, even to the depth of a single yard. Neither of the forest officials had a gun with them, and as neither of them cared to go in, pull the cat out and beat it to death, they forebore adding another trophy to their collections.

A Cowardly Animal, Having a Wholesome Fear of Man

Many stories have been told of the cougar's attacking people, especially children. Doubtless because the cougar is often spoken of as the "mountain lion" and quite closely resembles the female of the big African cat, it is taken for granted that he must be a courageous and dangerous beast. Certainly he is "King of the Forest" on the Pacific slope. Certainly he is far more common, even abundant, than the uninitiated would think for. Yet hunters and outdoor men unite in the opinion that the cougar not only has a wholesome fear of man, but that he finds a dog an object of special terror; moreover, that the cougar is so cowardly he will seldom attempt to attack a grown animal such as an elk, moose, or bear, or even a horse or cow. Mr. Roosevelt made a special investigation of this point, in the Rocky mountain states, finding a

Photo by Everett

In Situ

unanimity of opinion that no cougar ever had the temerity to attack a man by springing from a tree, nor in any other way, unless cornered where it had to fight for life or in defense of its young.

An illustration used in an advertisement by one of the small arms manufacturers and published in every magazine and nearly every paper in the country, a few years ago, probably had more to do with making the hills a fearful place than all the stories that have ever been told. A hunter lying in his sleeping bag under the shadow of the trees, awakens in time to see a cougar, crouched against the starlight, ready for the spring. Unarmed, the man's jugular vein would have been torn out in a moment—but he had his trusty Winchester, Remington or Savage alongside, the inference being that you might never need a gun, but should you need one the best and most dependable would be none too good.

A Wild Country, Filled with Wild Animals and a Wilder People

No wonder so many city dwellers look upon a trip back into the hills as next thing to suicide, and come down on train, steamer, or car, loaded with weapons. It is a common thing to see a man, in the middle of the closed season, strike the town wearing a belt filled with cartridges and supporting on one side a revolver of large calibre, while a huge bowie knife depends from the other, and carrying both rifle and shotgun in a bundle with his fishing rods. Doubtless he had been spending his leisure hours reading facts about natural history, posting himself on conditions in the Olympics—

as imagined by Eastern contributors to Eastern sporting magazines.

Not many are there who are able to appreciate that the mountain lake, the river trail, the angler's camp, the Upward Way—the land of elk and bear and deer and cougar and golden eagle — is incomparably safer than the crowded streets of the city or the automobile highway, or that a month spent in the wild will add fully a year to the span of any man's life.

Mr. Morganroth tells one unusual cougar story, however, which he received at first hand, and the truth of which he does not doubt. It was in the early days of the settlement of the peninsula, before the cougar, and other animals of the mountains, had seen much of the white man. An Indian, paddling down the Hoh, had wife and baby in his canoe, and up in the bow, high on a pile of duffle, a small dog. As the canoe passed under a low overhanging limb a cougar reached down and swiped the dog, whereupon the Indian shot his canoe back upstream, reached for his fish spear and, so he told Mr. Morganroth, not only rescued the dog, but also killed the beast.

Most Cougar Stories Made Out of Whole Cloth

Most cougar stories, nevertheless, are made out of whole cloth, like one related to me by a lady member of the Seattle Mountaineers, on their first outing to Mt. Olympus. She thought I should not knock about alone, especially without carrying a gun, and to put the fear of the wild into my soul, told me of her experience on the road near Sappho,

west of Lake Crescent, a short time previous. She was down from Seattle on a visit and as she and her friend were returning home from a neighbor's one evening, they saw a few yards ahead, a cougar as big as a lion—or a load of hay, maybe. It crossed the road and gave two or three fearful cries. Finally concluding it had gone on and being more afraid of the animal's stalking them where they stood than of running toward it, they tore down the road for dear life. This move, unexpected on the part of the animal, was executed not a moment too soon, for, would you believe it, they could hear it bounding along the other side of the fence all the way to the door—and possibly until they were under the covers of their bed.

On the return trip down the Elwha, a few days after telling me the story, the lady's contention was fully verified, for the entire party was treated to a sight of a cougar that had killed a calf at the Humes' ranch and had, moreover, severely clawed the cow when she came to the defense of her young. It was the greatest wonder in the world that I hadn't been eaten up by that same cougar, for I left in advance of the party, walking down river alone! Verily, people who persist in taking such awful chances should be placed in charge of a guardian.

Yes, and there is one other true story I would tell —one of a considerable number of similarly true stories that we have published in our newspapers during the past twenty years. In the east end of the county, a year or two ago, a young man and his sister were driving down the hill road with a can of cream when the horses bolted at sight of a cougar. They managed to stop the team, and

taking the crosscut saw, the only weapon available, the young man went back and rescued the can, for the cover had come off and the cat was lapping up the spilled milk. Putting the can in the wagon, they drove on, followed by the cougar. Shortly after, they arrived at a neighbor's where they got an axe and went back—my memory as to details is a trifle hazy now, but we'll assume the cat was waiting for them and that they gathered him in.

Success Depends Upon Nerve of Dog and Ability of Man

The cougar is said to have no permanent home, no place to which he returns night after night, or day after day, as the case may be. He is known to cover considerable distances in a short time, say twenty or twenty-five miles in a single night. Some have declared him to be a confirmed wanderer, travelling from point to point without thought of returning to his or his children's birthplace. Billy Everett, with a string of seventy-eight cougar to his credit, has proved to his own satisfaction that there is no truth in such a statement, at least in this country. When he takes a week or two off in the fall and goes hunting cougar, he first examines the mud or moist sand at the mouths of the streams, along the Elwha, the Hoh or the Soleduck. If he finds tracks, he knows that a cougar is making that particular portion of the river a regular hunting ground. By continued observation, extending over three or four days, possibly, Mr. Everett is able to ascertain whether there are one or more of the animals, and whether they go up or down river in morning or evening;

Photo by Everett

A "Good" Cougar

moreover, he is able to tell by the freshness of the scent at about what hour the animal passes that point. It is then a simple matter—a simple matter to Mr. Everett, tho possibly not to you or me—to "happen" onto a warm trail and carry matters to their inevitable conclusion.

Not every dog can follow a cougar trail, and not every dog will do so. A cold trail, according to Everett, is exceedingly difficult; even the best of cougar dogs will lose out in a short time. And a warm trail, well, most dogs don't care much for cougar, nohow. They will follow a short distance until they realize the scent is neither that of bear nor bobcat. Then it is all off. Possibly several dogs might lend each other courage, but while he keeps one or two hounds in training, he has always made a practice of hunting alone and with one dog only. With him two, man and dog, is company, and three is a crowd, no matter whether the third be human or otherwise.

Cougar Hunting Not Always an Unalloyed Pleasure

Everett trains his dogs to take the trail, tree their quarry, and stay right there, whether it be one day, or two, or three, until his arrival. Such training takes months, even years. It would be impossible so to train a pack of dogs. And meanwhile, it is up to Everett himself to find the dog within that limit of time. In the first place, he knows the country; in the second, he knows the habits of the cougar, and in the third, he can cover the ground almost as fast as either cougar or hound. Having a pretty fair idea as to where the

cougar is going, and as to what the animal will do when it finds the dog is on its trail, and being able, by reason of his thorough knowledge of ridge and canyon, to take advantage of all available short cuts, he generally manages to be in at the finish, that is, before the hound stops baying and settles down to the task of watchful waiting. But even Billy is not infallible; it sometimes happens that he has misjudged, and after two or three days the hound, tired and gaunt and soaking wet, returns to camp or to the Hot Springs, thoroughly disgusted. At other times he finds the cougar has taken refuge in a place from which it is almost impossible to get him and the dog, without a long roundabout trip. Then he climbs the canyon walls, pushing and pulling the dog up from ledge to ledge, working through places that no ordinary man would attempt to penetrate, taking chances that only hardened climbers fully appreciate, to save a few miles, or the spending of a night in the rain-soaked hills.

Occasionally a man, stranger to Billy and his ways, will ask the privilege of accompanying him. After a time the stranger feels the need of a smoke, or perhaps he feels a sense of oppression in the cloud-filled timber and would talk, or it may be he is not quite as good a traveller—at any rate, he is, ere long, apt to find himself as much alone as the setter dog that has set his heart on catching a jack rabbit of the plains.

The Windup of a Cougar Hunt

A couple of years ago, a party of us out at the springs in the winter time, learning that Billy had been down on the river three or four days studying

the habits of an old friend he called the "small cougar" and was about due to round him up, went down that way on our return home. There was an immense and very long log lying out from shore to a sandbar, but not reaching quite across the stream. Just as we got down to Smoky Flat the dog gave tongue and we broke into a run in order to be in at the finish. It was an easy matter to take advantage of the diagonal sandbar and a small maple that had been felled across the side channel and thus not get in over one's boot tops, but two of the ladies of the party, becoming greatly enthused, plunged in on reaching the end of the big log and in a moment were wet to their waists. Their disgust upon finding that the dog had been enjoying a little sport on the side by chasing a young elk may easily be imagined. Nor was it lessened to any great extent by the realization that they had to dry out at an open camp fire, as they had brought blankets with the intention of sleeping in an old shelter on the river. Our party went on up to Dr. Ludden's Geyser House, Everett pointing out the tracks of the cougar, hardly larger than those of a big bobcat, along the way. He was able to show us where the animal had left the trail and the next morning, when he and I came down from Grant Humes' to join our party, showed me where the animal had again passed down the pony trail, early that morning, and the scent was already so cold that "Old Babe" was not interested. "It is evident," said Billy, 'that he goes up and down the trail regularly, very early and very late. I have been hoping to get him without sleeping out, but I guess I can't do it." Two or three days later he came in town with the skin, the seventh for the

season, and with photos, reproduced herewith, of the animal taken in situ.

Not so many years ago it was quite a common thing to see two or three fresh cougar skins lying on the sidewalk in front of some one of the stores in Port Angeles, but of late the cost of raising and training and keeping dogs has increased to such an extent that the bounty, together with the value of the skin, is insufficient and the cougar is left undisturbed over the greater part of his range. Occasionally one will venture far down the valleys and kill a few sheep, as did one on Mr. Babcock's ranch, within the city limits of Port Angeles, only last winter. But these venturesome animals are quickly trailed and killed.

Cougar Never Spring from Limb Onto Their Prey

The cougar secures its prey by stalking, getting within two or three long leaps, when it strikes its quarry down before it can escape. Occasionally one may jump upon its prey from a slight elevation, such as a rock or low log, but never, so far as is known, do they spring from a limb. Sometimes they kill merely for the blood, but usually a part of the carcass is eaten; it is then covered with snow or an attempt is made to cover it with a few leaves, when it will serve for another meal if necessary. All small animals are eaten, but young elk and deer are so easily secured that they must comprise the greater part of the cougar's diet.

Mr. Everett tells of one occasion when his dogs trailed a cougar which came to bay at the

Everett and Babe After Cougar

foot of a tree, refusing to climb. Opon being skinned it was apparent the animal had been fighting, doubtless for the favor of a female, and had been so clawed about the shoulders that it simply would not climb. One can easily imagine the caterwauling that preceeded that fight.

The young, of which there are two or three, are spotted and barred when born, but these markings soon disappear. Evidently the cougar was at one time barred as is the tiger, or spotted like the leopard. The kittens are sometimes kept in captivity, but become treacherous as they grow older.

Formerly the cougar ranged from the Atlantic to the Pacific, but it is now found only in the West and in Central and South America. There are many varieties or subspecies, due to environment. The cougar of the Olympics is known as *Felis hippolestes olympus* Merriam. The type specimen was collected at Lake Cushman in 1896.

The Daddy of His Tribe

The True Mountaineer

"A lofty vale I seek—
Where mountain pine makes air like wine,
And sunlight kisses crag and peak."

—Stromme.

The True Mountaineer

(Marmota Olympus)

HIGH up on the mountain ridges—a mile above our homes along the straits — where the short grass, filled with alpine lilies and bluebells, takes the place of the dense forest of the lowland; where the few trees are drawfed, knotted, twisted; where cliff, rockslide and boulder are interspersed with fields of receding snow; where

"Mountain pine makes air like wine
And sunlight kisses crag and peak,"

lives the true mountaineer of all the four-footed tribes.

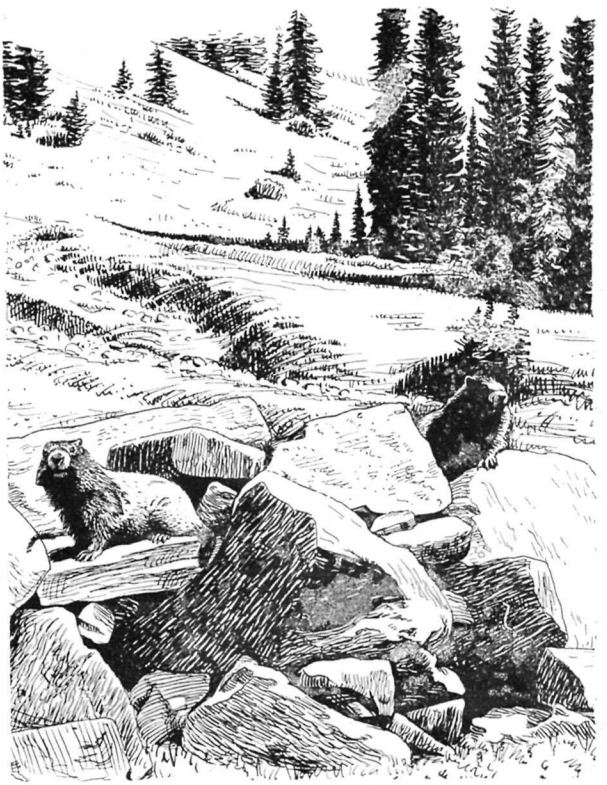
Elk, deer, bear, cougar, gray wolf—these come and go according to the season and the whim of the individual; their footprints are always present in the river valley trail. But the hill-born whistling marmot, lover of the open space above the clouds, seldom deserts his mountain home. Other so-called mountain animals, as the mountain beaver, may spread over the lowlands, even down to the edge of the great whulge, but the whistler and the heather are practically inseparable.

His loud, clear, ringing call welcomes the lover of the upward trail as he emerges from the scattering trees at timber line, cheering him with the glad news that he has at last come to the end of

the tiresome way and has but a few steps to take thru a lovely mountain park ere he may top the crest and view the glories of snow-clad peak, foam-filled valley and green-carpeted hillsides, stretching away to the blue of the Pacific.

At first, unless one has learned on previous visits just where the whistlers make their homes, the call is deceptive. It comes loud and shrill from beneath a boulder directly in front; it challenges sharply from the cliff wall at the left; its quavering warning note is repeated from a bunch of alpine fir a half mile on the other hand. The deer tip forward their ears, daintily stepping to the edge of copse or cliff, there to await further evidence of the intruder's approach. All animal life is at once on the qui vive, then silently and quietly retires to shelter more secure, to roots, or logs, or rocks from which it may watch unseen the approach of the stranger. As partridge and quail of the woodland road are warned by the whistle of the brass-buttoned, blue-coated jay, or the loud rattle of a nervous little pine squirrel, so the blue grouse of the mountains takes heed of the whistler's call and fades into thicker covert. He is a wise sportman and a careful one who can reach the crest of the ridges without attracting the attention of these khaki-clad sentinels, but it can be done if one knows how.

I, once upon a time, owned a tame crow—an eastern crow, which in point of size stands midway between the big raven and the small fish-crow of the northwest. For over seven years Billy lived in an old apple tree whose branches covered half the yard and house, and during those seven years he learned many things. The story of



Courtesy "Seattle Mountaineer"

The True Mountaineer

his life, written merely for the presentation of additional evidence as to the degree of intelligence acquired by some of the lower animals, of itself made a fair-sized volume. His ability to "talk," his understanding of words—but suffice it here to say that he had a wide and varied language, all comprised of words of one syllable. By his calls we could tell, not only when he was hungry, or thirsty, when he wanted to play, to have his head scratched, to come into the house, but we could also tell whether it was the neighbor's cat or our own, or a strange cat, or a strange dog, that he was berating. Infallibly my mother could tell whether my father or myself were coming home from town, or whether the group of kids homeward bound were girls or boys. A gun, another crow flying over — altogether there were some twenty easily recognizable "caws," as well as a variety of other minor notes, each with its meaning.

This seven years' study of crow language—nearly forty years ago—has caused me to pay rather more attention to the songs and notes of birds and mammals than I might otherwise have done. Unquestionably each has its language, and equally without doubt the call of warning is the leading word in the chinook of the inhabitants of plain and mountain.

Averaging about twice as large as its cousin, the eastern woodchuck, occasionally an individual —doubtless the granddaddy of his tribe—will attain the size of a water spaniel. These big fellows often appear, at least, to be three feet in height as they sit upright on their haunches, motionless as a concrete post for an interminable time, watchdogs for the colony. Usually the big fellows are

found occupying commanding positions among or upon the rocks; seldom down in the alpine meadows or in proximity to the timber line. Doubtless the security of their chosen location has had much to do with this longevity.

Theo. Rixon Tells of First Experience in Mountain Parks

Theodore Rixon, superintendent for the Lacey Timber Co. in the Olympic peninsula, tells of his first experience with the whistler, when Dodwell and himself were engaged in making the Dodwell-Rixon survey of the Olympics for the government. They were just getting into the mountains, reaching timberline at the headwaters of the Quinault, when they heard a loud whistle. They had not been expecting to see anyone, for there were no trails and few people in the mountains in those days, nor had they seen any tracks or indications of the presence of others than those comprising their own crew. In a few minutes another whistle sounded, by this time puzzling them not a little. It was uncanny, coming from the air, not from the ground, nor the timber, and, moreover, they had no thought that a clear shrill whistle could be made by any other than human means. Finally, they approached closely enough to locate the source, a big whistler sitting on top of a large rock or pinnacle.

Those of the marmots living among the rocks and at the upper edge of the alpine parks or grass ridges, are out early in the spring, at which time they make roads across the snowfields to feeding grounds and to the homes of their neighbors.

However, the greater number of individuals having their homes on the grassy slopes and in the alpine parks, do not wait until the snow has disappeared but dig themselves out by the last of May or the first days of June, when the spring sun soon widens their burrows to circular wells of considerable diameter. One standing on the ridges may observe them playing on the snow about their homes, appearing in the distance to be no larger than baby rabbits.

As they do not store up plants and roots for winter use, but instead indulge in the long hibernating sleep, they have the great excess of fat acquired during the fall months to draw upon for partial sustenance until the new grass appears.

The Oddest Sight Supervisor R. L. Fromme Ever Saw in Mountains

Speaking of the whistler, Supervisor R. L. Fromme, in charge of the Olympic National Forest, says the oddest sight he ever saw was something that occurred up on the Soleduck Divide in May, 1918, when Chief Ranger Ch. Morganroth and himself were crossing to the Mt. Olympus ranger station. The Soleduck park is a beautiful grassy slope, a mile or more in diameter. There are tiny streams, and waterfalls, and lakes, but during winter and early summer it is covered by from seven to twelve feet of snow. They had ascended the steep, narrow valley, threaded their way thru the tangle of mountain alder and willow always to be found at the swampy lower edge of a timberline park, and were climbing the snow slope. It seemed as tho everything were covered with snow,

when suddenly they heard a shrill whistle from one side of the park and after a moment or two a big whistler came into view. He whistled again, when another whistle, or an echo, responded from below. In a moment he started down the snow field, stopping to whistle again. This time there was no doubt about the answer for another marmot came out from behind some brush, still farther down. Instantly they started running, and when about ten feet apart each of them reared up on his hind feet and walked or ran the remaining distance upright, waving their forefeet in the air. They were not far away and were very plainly outlined against the snow, so that they were clearly seen to be cuffing or slapping each other's faces as they came together. "Fighting?" I asked Mr. Fromme. "Not at all. Doubtless either one or both of them had that morning tunneled out thru the snow and they were so glad to see each other they just didn't know what to do."

Had $150 Worth of Whistlers Where They Couldn't Get Away

As the marmot makes a fairly large mark, even at some little distance, they are easily shot, but the burrow having nearly the diameter of a man's body and descending at a steep slope, it is necessary that they be killed instantly if they are to be secured. Seldom, indeed, are they to be caught away from home. Wm. T. Hornaday, director of the New York zoological park, in his "Hunting in the Selkirks," mentions the whistler as being a rare animal and one extremely difficult to capture, an offer of $15 each for live specimens

Whistler Caught Away from Home

bringing no response. Quite different was the idea of the writer's small son when he first saw the whistler, on a trip to the headwaters of the Elwha river in 1913. After taking a tramp thru the upper park or basin, where the animals were abundant, and returning to camp, I missed the kid. A few moments reflection sent me back to the falls, where I found him, busy as a squirrel, plugging up the several entrances to the whistlers' home, down in the creviced rocks. "I've got them; they can't get away," he shouted — and I guess he was right at that.

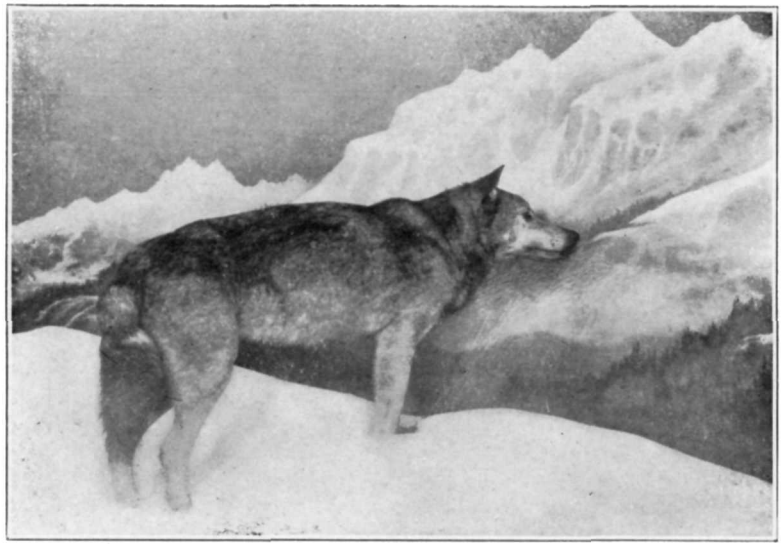
Insofar as the writer's knowledge goes, the only whistler ever treed was an old one which took refuge in a crack in the rocks when John Schweitzer, then forest ranger at the upper Soleduck station, chanced to surprise him away from the shelter of his home. The crevice being only two feet in depth, Schweitzer could have reached down and pulled the animal out, but he was free to admit that if the whistler had come out of his own accord he would have gotten out of the animal's way, for not only did he keep up an incessant barking, but actually went into a frenzy when two or three little stones were tossed in upon him.

No Two Persons Will Agree on Color of the Marmot

The marmots, of which there are between twenty-five and thirty species and sub-species, vary greatly in size and color. The Olympic marmot, one of the largest, is of a brownish-drab, lighter underneath; the long hairs are of a glossy, blackish-brown mixed with more or less pure white

ones. Top and sides of head blackish-brown; broad white patch in front of eyes; sides of nose and chin white; legs brownish-drab; tail clove-brown, tipped with light-pinkish cinnamon; under parts brownish-drab mixed with white. (Description by the U. S. Biological Dept. from specimens collected in the Soleduck Basin and at Happy Lake.) Later in the summer the general tone of the upper parts is pinkish-buff, varied with russet; feet chestnut-brown; tail cinnamon-buff mixed with snuff-brown. Young: Grayish-brown becoming cinnamon on rump; underfur hair-brown at base, tipped on foreback with white, and on hinder back with cinnamon or cinnamon-buff; top and sides of head and forelegs bister; feet dark clove-brown; underparts light clove-brown mixed with white or pale buff.

The Timber Wolf



Courtesy C. J. Albrecht, Curator U. of W.
The Timber Wolf

The Timber Wolf

A MAGNIFICENT animal, the big gray timber wolf of the Olympics! Standing hip-high at the shoulders, he is the peer of any of his tribe that roam the Russian steppes or the barren lands of British North America. At one time fairly numerous and correspondingly bold, of late years with the decreasing number of deer and the great increase in the number of visitors to the outer edge of the Olympics, they have been thinned out and driven further and further back into the inmost recesses of the Main Divide, that wilderness of jagged cliffs, crevassed glaciers and deep canyons set aside as the Mt. Olympus National Monument—the Last West and a region which for wild grandeur of scenic beauty is without a peer within the confines of the United States, if not the continent.

Having become shy and cautious in the extreme, it is indeed seldom that a glimpse is caught of one of the small bands, each now limited to a family of six or eight individuals, that course the game trails of the high grass ridges connecting the main peaks of the range, and still more seldom that individual wolves are seen along the streams in the valleys below. Indeed, were it not for the big footprints in the moist soil of the trail, or perhaps in the dust where a grouse has been scratching, or were it not for the occasional disappearance of

some favorite hunting dog which in its enthusiasm in trailing bear or cat has wandered too far from camp or home, the fact that there are timber wolves in this country would be almost forgotten.

For years the timber cruiser, hunter and prospector, inured to the hardships of the wilderness and on near-speaking terms with all or nearly all of Nature's children, has started on his trips with little else than a single blanket, a skillet, bacon and flour, and the ever-present flies hooked in the band of his old hat. The city man, fed up on stories of the fierce "mountain lion" and the black bear that always has a brace of cubs to be protected to the last drop of her heart's blood—the city man with his heavy pistol and holster, rifle on shoulder and bowie in teeth, has been an unending source of quiet amusement to the old timer, who rolls up in his blanket at the base of a tree or in the shelter of a rock and sleeps the sleep of the muscle-weary without giving a thought to the life that has just awakened all about him. Well he knows that lion and bear and all other animals are constantly on the qui vive for the slightest indication of the presence of human beings and that with the first faint scent they fade away to hiding place or look-out point from which they can bolt should the menace prove a real danger.

For more than twenty years has the Humes ranch, at the end of the first day out, been the Mecca of the festive angler, who has whipped the stream at Geyser valley, thoroughly enjoying the quietness and wild beauty of the canyoned river, the while filling his creel with two- and three-pound rainbows and cutthroats.

But even as there is an exception to every rule,

Photo by Humes

Trapped Wolf a Whipped Cur

evidencing its truth, so has the timber wolf proven the rule of man's comparative safety in the mountains.

Treed by Pair of Wolves

It was late in the afternoon of a warm June day that Chief Ranger Ch. Morganroth, of Port Angeles, walked up to the Lillian to meet a Forest guard on the latter's return to Humes' ranch. A log, possibly four feet in diameter, spans the canyon, there about a hundred feet in width. For many years had the old tree been used as a foot log, but recently a new trail, on a longer and easier grade, had been put in just above. Mr. Morganroth sat down over the stream in the sunshine and improved the time looking over some papers until convinced that his man must have taken the upper trail, when, still absorbed in the matters under consideration, he slowly and quietly climbed the short sharp zig-zag to the top of the canyon.

Just as he reached the crest, there confronted him, only a few yards distant, an old timber wolf, a giant of his race, an animal that had pulled down hundreds of animals in his day. Silently he faced Morganroth, while a second and smaller animal as quietly circled around to the rear, in pursuance of tactics they doubtless had found universally successful. Without a gun, not even a walking stick, Morganroth cast about for something in the way of a weapon; picking up a couple of pebbles, the largest he could find, he dropped them into his pocket and tried one dead branch after another; all were brittle or rotten. Meanwhile the big wolf edged a little closer, again waiting. Mr. Morganroth yelled, waved his arms,

threw his hat, tried everything he could think of, to no avail, and finally was forced to take refuge at the top of an old smooth, jagged-topped stub, whereupon the wolf came up and sat down underneath, evidently with the intention of loafing around until his quarry slid to the ground.

All efforts, vocal and otherwise, having failed, and his grasp on the smooth limbless stub gradually slipping, Mr. Morganroth reached in his pocket for his clasp knife, intending to slide down and give the old devil as hard a tussle for life as might lie within his power. But fortunately the small rocks had gone into the pocket containing the knife; the first one thrown, the wolf being directly beneath, struck him on the head; surprised, he jumped aside, whereupon Mr. Morganroth dropped with a yell and chased down trail as only a man whose life depended upon his feet could run.

For some reason the wolves avoided the trail, keeping alongside in the low brush until Morganroth, out of wind, was forced to climb again: this time, however, he was able to pick up a club and thus keep the wolves a short distance away until he was again ready to run. A better club, hastily grabbed as he flew along the trail, gave him greater confidence and the next time he stood at bay at the foot of a tree. The wolves seemed to realize that he was now armed and soon left, Mr. Morganroth making the next two miles or so down to the ranch without catching another glimpse of them.

Just why they did not rush him as he came up out of the canyon, Mr. Morganroth cannot imagine. Doubtless they had reached the point where hunger and fear hung in the balance; certainly they were waiting to study mankind at close range and learn

The "Morganroth Stub"

the limit of his ability to defend himself. Since this happening of the unexpected, Mr. Morganroth says he has concluded a revolver has the same value in the Olympics today that it once had on the Texan border—you may never need one; but should you, you will want it mighty bad.

I wish I might close this story of the wolf with this one exception to the universal fear of mankind, exhibited by the wild animals of today, and I could, were it not for the shreds of clothing and the clean-picked bones scattered between three dead wolves that Government Hunter Hammersley, near Goldhill, Oregon, got before his ammunition gave out, in January of last year. The tale is too grewsome for telling.

Trapped Wolf a Whipped Cur

That the wolf has in his nature the cowardly streak common to all members of the family is clearly shown by those caught in traps. While the trapped cougar is full of fight, so that one naturally approaches him with circumspection and a glance to the rear to be sure the coast is clear for a quick getaway, should chain break loose, the wolf, according to Grant Humes, is simply a whipped cur, waiting with his tail between his legs for the just retribution that has already been too long delayed.

The trap, it would appear, is the only means of still further thinning them out, as may be realized when it is known that Billy Everett, with Old Babe, cougar dog of renown, whose equal has never lived in the Olympics, followed a big timber wolf fully five hours one day last February, only

one glance being obtained of the quarry. Younger hounds and airedales take up the trail and are seen no more; wolves have even killed young dogs, in the winter, at the very doors of the Olympic Hot Springs. Yet they are really a rare animal now.

Dogs No Match for Timber Wolves

At Elkhorn, on the Elwha, I met Charley Anderson, hunter and forest ranger, whose two dogs were barely able to walk, great ridges having raised on their sides and backs where they were slashed by wolves. Charley had been up to the head of the river hunting, had missed his hounds and after waiting a day or two without their putting in an appearance, returned to Humes'. A Dr. Young, of Seattle, who with his wife was camping at Crackerville or Letha creek, told me of having taken a trip across river in the hope of securing some grouse, and of being in the thick timber and brush when the dogs broke through, closely followed by two wolves, the leader slashing one of the dogs just as they reached a log a few feet from the doctor, but slinking away at his first shot. As the dogs had been without food for three days, Young was kept busy catching trout, which they at first bolted practically whole as soon as thrown upon the ground.

Learned to Respect Heels of Elk

After sixteen years of waiting and watching for a favorable opportunity that would permit him to make good the promise of "the next wolf skin" to a friend, Grant Humes shot an especially fine speci-

Wolf's Jaw Smashed by Elk

men this past winter. He had planted an old horse, as wolf bait, just over a convenient rise or knoll and daily went out to take a look at the carcass. This day, he chanced to reach the spot and make the crest just as a wolf came walking briskly along in the timber, his big bushy tail extending straight out behind and slowly waving from side to side. A sharp whistle stopped the animal between two trees and one bullet from a 32 was sufficient to drop him in his tracks. He was a big fellow, six feet in length, and it is not at all unlikely that he was the identical animal that treed Mr. Morganroth. In roughing out the skull Mr. Humes found the wolf had suffered a fracture of the lower jaw, the bone having been bent inward and the line of fracture being plainly evident. One of the canine teeth, an inch and a half in length, had been snapped off at its base, also the point of one on the opposite side; three or four of the smaller teeth had also been broken out. "Kicked by an elk" was Mr. Humes' verdict; he has seen old elk deliver a smashing blow at a dog and has no doubt this wolf got his in the same manner.

Wolf the Acme of Treachery and Cruelty

Speaking of the nature of the beast, W. T. Hornaday, director of the New York Zoological Gardens, says: "There is no depth of meanness, treachery or cruelty to which the wolf does not cheerfully descend. They are the only animals on earth which make a practice of killing and devouring their wounded companions, and eating their own dead. I once knew a male wolf to kill and half devour his female cage-mate with whom he had

lived a year. In captivity, no matter how well yarded, fed, or comfortable, a wolf will watch and coax for hours to induce a neighbor in the next cage to thrust through tail or paw, so that he may instantly seize and chew it off, without mercy. But in the face of foes capable of defense, even gray wolves are rank cowards, and unless cornered in a den, will not even stop to fight for their own cubs. Powerful teeth, strong jaws and wide gape enable them to bite with great cutting power. Every well-aimed snap means a deep wound or a piece of flesh torn out.."

The Gray or Timber Wolf is known to attain the age of twenty years; a good-size male will weigh 125 pounds, stand thirty inches high at the shoulder, and measure about six feet in length. The bushy tail is from ten to fifteen inches long. The fur is long and coarse in winter, dark on the back, gray about head and flanks, and lighter underneath.

The young are brought forth in a burrow on the mountainside, or in a hollow log or crevice in the rocks; they are born blind and are jealously guarded by their parents until they have attained a fair size.

The Mountain Woodrat

The Mountain Woodrat

"I'M GOING to get the son-of-a-gun if it takes all night," said Prof. J. B. Flett of Tacoma, as, armed with a long club, he lay full length on the big round table at Williams' cabin, now Klahhane lodge, one July evening some years ago.

In those days, and even for some time after the cabin became the home of the Klahhane mountaineering club, a family of woodrats lived in the pile of bowlders that had once been laid up as a fireplace.

Everyone who has camped in the mountains or along the rivers knows the woodrat—knows him, not as a stranger, but as an old and familiar acquaintance, too familiar by far to be listed among one's friends. And knowing him, they will be able to appreciate the grim determination with which the noted Scotch botanist, though sadly in need of rest after a strenuous day on Mt. Angeles, proposed to sit up half the night, if need be, to cash in "that damned rat."

Not that it is at all difficult to kill a woodrat—far from it. But to kill the particular rat that one must dispose of — the last rat — is quite another matter.

Western Bushy-tailed Woodrat; Neotoma cinerea occidentales

Woodrats are squirrels, not rats. It is true that in size and color they are somewhat similar to the common or garden variety of rat, but there the resemblance ends. The common rat, like many of our pests, both animal and vegetable, is not native to North America, but was introduced from the old world. Thc woodrat, being nocturnal, has large eyes—they are his most prominent, most noticeable feature. His ears are also large and round. His tail, instead of being scaly, is squirrel-like, thickly covered with long soft hair. In color he is velvety-gray above, lighter beneath, being really one of the most beautiful of the squirrel family.

Oh, of course, scientifically speaking, the woodrat is not a squirrel. He belongs in the Muridae, or mouse-and-rat family, his nearest relative being the vole; thus he might be said to be an overgrown fieldmouse. However, in intelligence he ranks with the squirrels; in fact, it would be an exceptionally bright individual of the squirrel family that could compare favorably with the average adult woodrat. One thinks of the squirrel with pleasure — as a playful, intelligent, likable little fellow; while, on the other hand, both mice and rats are very much in disfavor. The scientific sharp may include the woodrat with the muridae if he so desires, but here in the West we who know him best assert that he is very much a squirrel—and that settles it!

Of Nocturnal Habit

In the mountains, the woodrat lives among the rocks, making his home in crevices or under piles

of loose rock. Along the fringe of civilization he pre-empts every cabin and log house, having his burrow underneath and using floor and roof as his promenade. And believe me, the woodrat is some little promenader. With the coming of dusk he may be noticed just outside the entrance of his burrow, taking his evening meal of tender new leaves and buds, after which, and for a long time thereafter, he indulges in his revels by night.

Harry Lauder, in one of his monologues, tells us he is a very light sleeper, "oh terribly light." He goes on to say, "If a cat happens to be chasing a mouse in the night and they should cross my face, I'd be awake in a minute." Harry would have a sorry time were he to take a hunting trip in the West and be compelled to seek shelter from the rain in an old cabin where a large and prosperous family of woodrats of all ages are accustomed to chasing each other back and forth, up and down the walls, and across the ceiling. Such buildings usually contain a bunk, a rusty camp stove, table, box or two, several shelves and a pile of wood or bark, affording ideal exercising grounds and every opportunity for standing broad and high jumps. A man more or less is merely so much more rubbish; his face a shining mark for an athletically inclined woodrat. I have even had one jump thru a hole in the roof of a two-story building and alight squarely on the pit of my stomach — and a large, fat woodrat is no bunch of thistledown.

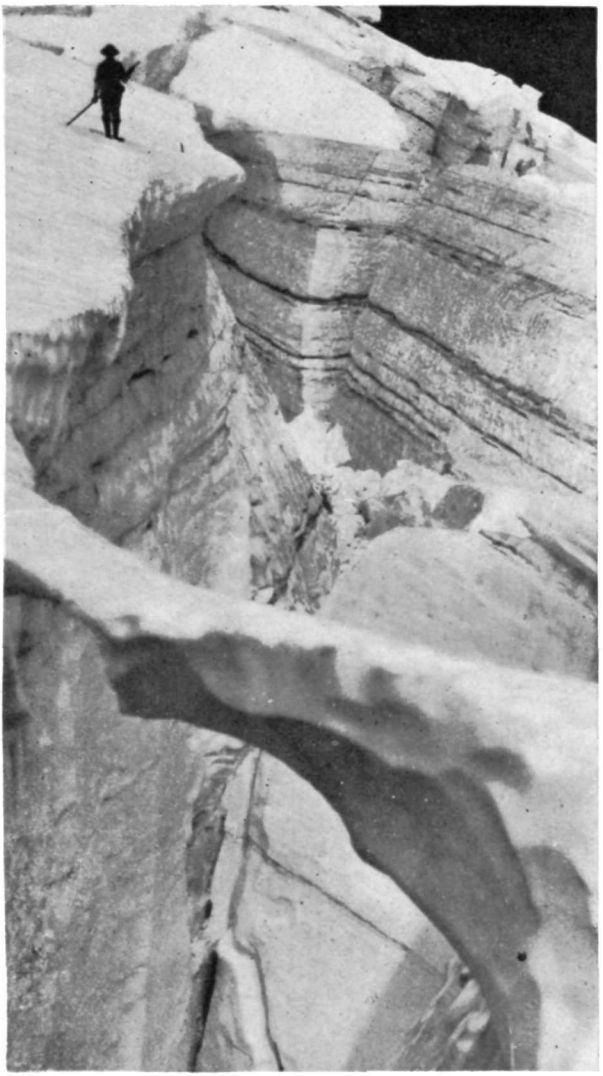
When a family of these rodents does take possession of a ranch during the owner's absence they are easily cleaned out with a 22, for, unlike the

common rat, they are neither suspicious, nor of retiring nature. On the contrary, they have a mighty steady nerve and often an old fellow, refusing to be driven out of doors or even to the far end of the room, will simply sidestep one's missiles.

Occasionally, however, one meets a man who enjoys their company, just as others take pleasure in the romping of chipmunks along roadside and trail. I have in mind a forest ranger, Cy Johnson, tall, bronzed, athletic, who covered his trails and climbed mountain ridges hatless and clad only in shoes, overalls and abbreviated B. V. D.'s. A student at the "U", Cy would spend an hour or two in the evening keeping in trim by exercising on the horizontal bar, turning handsprings and walking in and out of the cabin on his hands, an inverted animated marble statue in the moonlight. Of course Cy would leave the doors open at night and, as he had no screens, I ventured to inquire if he wasn't bothered with the woodrats. No, he rather enjoyed their company. Within a few moments after turning in he was sound asleep, while I laid on the edge of the bed over an hour watching a family of his droll-faced pets chinning themselves on the chair rounds, turning handsprings and playing leapfrog. No troupe of trained white rats could have put on a more startling performance, and I then and there became convinced there are many things in this world of which we wot not.

Mountain Boot Fanciers

While the woodrat seldom disturbs provisions of any kind, unless it may be non-perishable food that he can store in his granary, he has gotten him-



Courtesy "Seattle Mountaineer"
Crevasse on Mt. Olympus

self into great disfavor thru his habit of gnawing leather articles, many a pair of expensive mountain and loggers' boots having been forever ruined when their owners neglected to hang them up safely at night.

Some people use their boots as pillows. I once awakened sufficiently at a heavy crash, to realize a boot had been shied at a pestiferous rat and to hear the words, "Take that, damn you!" The rat did, and there was no further disturbance, but in the morning the shoe was found to be worthless.

The woodrat has several peculiar habits, one being a rapid thumping with his hind feet when annoyed by the presence of human beings, interfering with his activities. Through this they are always easily located when they have taken refuge under any object in the room. An old rat will thump so loud that a stranger to their habits cannot believe the noise is actually being made within the room; I have seen a man get up and go around the house to ascertain what it was that was pounding outside the walls. They also have a vocabulary of squeaks and calls, which they exercise most fully at frequent intervals during the night. They have a musky odor, only noticeable when disturbed. Along the southern border, they are regularly brought in to the market by the Indians, and the flesh is said to be as fine as that of any of the squirrels.

Of Wide Distribution

The woodrat is found only in North America, most abundant in the timbered and mountain districts of east and west, but is not found in the upper Mississippi valley. In the east-

ern states he is known as the woodrat, in the West almost entirely as the mountain, pack or trade rat. There are 17 species and 19 sub-species, some extending down thru Mexico to Central America. In the more open country they build large nests of sticks, these often being 15 to 20 feet in diameter; the desert rats take advantage of the protection afforded by the large cactus, and also cover their nests with cactus burs. Nests found in the Olympics are usually made of moss, thin strips of soft cedar bark, and the like, and lined with soft materials. In old cabins the rats take advantage of whatever there may be in the way of quilts and blankets, sacks, etc., the nest being a bunch of chewed-up material about the same as those made by the mice, and placed above rafters or on a corner shelf. Campers and prospectors tie their bedding, also any food not in tins, up into a roll and suspend from the ceiling with a piece of wire; or, if leaving bedding in the woods, the limb of a tree is utilized.

The name of trade or pack rat comes from their habit of carrying small articles such as pieces of bone, stones, cones, bark, chips and twigs, to their burrows and strewing them about the entrance as tho they might make use of them in their nightly play.

Writers of hunting or camping stories, mentioning the woodrat, always refer to his habit of appropriating knives, keys, or toilet articles for his own use, and add that the rat invariably makes what he considers to be an even exchange, trading pieces of bark or chips, or pebbles or horse dung, for the articles taken. Possibly the woodrat does

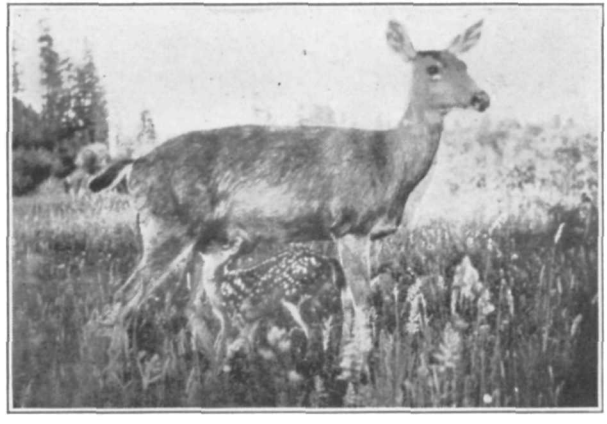
this thru sheer love of fun, for he certainly is a great practical joker; possibly he believes he is making a fair trade and is simply adhering to the honesty-policy rule; and then again, it is possible —barely possible—that he merely happened to be carrying a piece of bark, or what not, at the time, and dropped it when the new plaything caught his eye. I'm not denying anything, you understand—no, not even Roosevelt's assertion that the world is full of nature fakers. But none of the few woodrats I have had the pleasure of meeting during my twenty years' residence in the Olympic peninsula have traded in even so much as one white chip.

California Rats Wear Eyeglasses

It is said that a nest found in California contained "fourteen knives, three forks, six small spoons, one large soup spoon, twenty-seven large nails, hundreds of small tacks, two butcher knives, three pairs of eyeglasses, one purse, one string of beads, one rubber ball, two small cakes of soap, one string of red peppers, several boxes of matches, with numerous small buttons, needles and pins." Doubtless if the finder had looked around a bit he would have recovered the washboard and wringer, a cant hook or two, and the long missing cross-cut.

Woodrats eat leaves, buds, bark, grain, potatoes and other vegetables when they can get them, and fruit. They do not hibernate, but store quite a quantity of dried weeds, leaves and twigs for winter use, the amount depending upon the elevation of their homes—the length of time the mountain slope is covered with snow. I have found the en-

tire apple crop from a small orchard stored away in the attic of a log house, the work evidently having been commenced early in the fall as many of the apples were small and hard as rocks. I might add that the apples were found while hunting for two or three enameled cups and basins that had mysteriously disappeared; that the woodrats had also appropriated the screw from an unused carpenter's bench, and from tinware and screw had fashioned a very creditable cider press!



Wild Doe and Fawn

The Ring-tailed Raccoon

The Ring-tailed Raccoon

(Procyon psora pacifica)

THE more we see of folks the more we think of coons — speaking now of the ring-tailed raccoon.

The coon's system is a hard one to beat.

He minds his own business during summer and early fall, keeps out of sight, raises his family, picks out his hollow tree, and then, when the cool weather begins, he and his family take a holiday.

He nightly visits the apple orchards and the grain fields and stuffs himself. He lays on wads and wads of fat, while the laying is good.

And to insure his remaining long in the land of his fathers he travels by night; leaves dogs strictly alone; and walketh slowly, his long nose just two inches ahead of his toes.

So, when he smells a steel trap, he taketh a meander round and about that trap, the ornery cuss — and his hide is worth three-fifty right now. And then, when he gets real fat, and his family has been warned of the perils of this cruel world, he hunts up his hole and abides there, asleep in his fat, until spring comes.

About any way you look at it the coon has a

system that is hard to excel in this era of bolsheviks and profiteering.

And if Mister Coon does get caught by a toe, in some long-hidden and unsuspected trap, he will, Spartan-like, gnaw off that toe, or a foot if need be, and go his way.

For better it is that one should lose even a right eye than that he burn forever in hell fire.

Or have his skin stretched on the north wall of a barn.

The Raccoon a Playful Pet

Many are the stories told of tame coons, all tending to show that they are intelligent, playful little animals—when caught young.

Mine—I paid two simoleons for my playful little pet, and in those days a simoleon had a girth like unto a cartwheel.

But he was cheap at the price — about 6c per pound, advoirdupois.

He had a jaw as long as a pure-bred collie's with twice as many teeth in evidence, a baleful eye, a vicious snarl, and a disposition like a sore-headed bear.

The boys said he was a great fighter, and they should have known. They found him asleep in an old crow's nest, chased him several miles through the grove, shaking him out of the small trees only to be again put up by the dogs, until he could climb no more and turned at bay, when, with sticks, clubs and a sack, they finally effected his capture. His disposition had not improved to any appreciable extent in the process.

There was no doubt he was a fighter, and no doubt but that he knew it.

Also, all the dogs in the neighborhood knew it. They didn't care anything about fighting coons, nohow—and thus it befell that my coon proved an exceedingly unprofitable investment.

Eat Everything They Can Chew

Although the Raccoon is occasionally rounded up by dogs along the streams of the Olympics, he is nowhere so common as formerly. Along Indian creek, for instance, they were formerly abundant, but now are seldom seen.

Doubtless many of those that once dwelt in the interior have moved down to the beach; at least they are now most common along the salt water. Here they have the advantage of a table that is always spread, for the Raccoon likes crabs, mussels, small fish, and frogs better than anything else, unless, perhaps, it may be a toothsome young chicken.

They are quite omnivorous, eating vegetables, fruit, corn, birds and their eggs, crayfish, clams, and everything that comes their way. In fact, they eat everything they can chew, be it fish, flesh or fowl.

They have a curious habit of washing their food before eating, where water is to be had, and tame coons will wash all their playthings every little while, seemingly getting more fun out of them in that way than in any other.

They are nocturnal, and an animal of the trees, although much of their time is spent upon the ground. But though splendid runners and swimmers, it is among the tree tops that they are really at home.

An old Raccoon will jump out of a tree to the ground, sailing down for at least thirty feet and landing on all fours. This, coupled with their almost unbelievable leaps from one tree top to another, make them as swift as a monkey. With anything like half a chance they are soon out of sight and beyond trailing.

A Nigger Coon Story

It is this wonderful three-sided facility in travelling that makes the coon hunt so attractive in the open woods of the South where they are abundant. Given a bunch of coon dogs, as many active young niggers, who have the wind for both climbing and running, and one or two experts with the axe, and the coon has a run for his life that keeps him guessing. Nor does the race always end to the credit of the howling, yapping mob.

There is a story which came out of the South not long ago, concerning a bunch of right smart young niggers and a dozen coon dogs who were dancing about a big tree in eager anticipation, when, as the last blows were given and the tree fell, out jumped, not a coon, but a big black bear, full of fight and long sharp claws. Yes, and he came down a-fighting and bounded seven ways at once.

The dogs gave one burst of ki-yi's and tore off through the swamp for home; hard after them flew the young niggers, never stopping till they reached an open place in the swamp, where they drew two or three breaths.

"Pore Unc' Isom," said one, "he isn't heah an' he's so ole that bar just make one moufful outen him."

Two or three seconds later, when they arrived home, it was agreed they should go in a body and break the news to Uncle Isom's wife. They reached the door; one summoned sufficient courage to knock timidly; the door opened and out stepped Uncle Isom himself.

"Yo' heah? Wha'd yo' come f'm!"

"Me?" said Uncle Isom. "Me? Oh, I cum wid the dawgs!"

Possesses a Distinguished Appearance

The Raccoon, which is found throughout the timbered regions of North America, though most common in the South and on the Pacific Coast, makes his home in a hollow tree or stub; four to six are born in a litter.

They are quite easily trapped, chiefly because of their curiosity. If a trap be concealed at the base of a tree and a small mirror fastened just above the bait, on the trunk a foot or so above the ground, the coon is more than likely to let his curiosity get the better of his caution. Pieces of bright tin, tin-foil, or even bits of a mirror, are attached to the pan of a trap and the latter placed under water at the stream's edge, where the rippling flow will act to conceal the outlines of the trap, and at the same time add to the attractiveness of the bright object.

By reason of a black stripe up his nose and black bands or patches over either eye, no less than because of the black-banded gray tail, the Raccoon is quite distinguished looking. The tail is really pe-

culiar, in that the hair stands straight out all around, making a "club" of even thickness its entire length. Occasionally white coons are trapped, and still more rarely black specimens.

The coon's fur has a dense beaver-like undergrowth of a yellowish cast (though this ground color varies with locality and individual), which is overlaid with longer guard hairs of gray and black. The plucked skins are frequently sold as beaver, though by far the greater part of those marketed, from three to four million a year, are used, without plucking, for men's overcoats.

Speaking of Coonskin Coats

Speaking of coonskin overcoats, once the cheapest, next to the buffalo, of any fur, brings to mind the old farmer who'd work about his barns all week and then drive ten or fifteen miles to town on Saturday to do his trading.

It might be ten, twenty or thirty below, still he would come in as religiously as townspeople would go to church, and as a matter of course he was always cold after his long drive. Some stores were well heated; others not. But up in the printing shop, where the men worked in their shirtsleeves, it was always warm.

Wearing an immense coon coat, heavy woollen cap, woollen boots as thick as boards, and great fur gloves, he would come in, take off the latter only, that he might fill his villainous pipe, and sit down in one of the big arm chairs for an hour's solid comfort, talking farming and politics the while he absorbed heat enough to last him during the return trip.

We burned a peculiar coal, called cannel, in those days. It was hard, shiny, flaked off in splinters, and went into action about twice as fast as pitch kindling.

When the old farmer would show up, we'd give him a chair with his back to the stove; one of the boys would go out and split off a scuttle of coal, and opening up the windows that the insufferable odors of barn, pigpen, and unwashed humanity might escape, would have that cast-iron stove a clear ruby red in three minutes. The thermometer would steadily and rapidly climb until the top melted down like a paraffine candle, yet never once did I know of a farmer shedding his coonskin coat.

There was a place of refreshment directly underneath, and after the departure of the son of toil, be it five, ten or fifteen minutes, or yet a half hour, a young man in his shirtsleeves might be seen making a headlong dive in the door thereof—for the treats for the crowd was the fine assessed the poorest guesser as to the length of stay of our farmer friend.

The Martin

The Martin

THE Martin is one of the largest of the weasel family, being from sixteen to twenty inches long, exclusive of the tail, which adds eight to twelve inches, if measured to the end of the hair. In color, shape and thickness of tail, they much resemble a young red fox. There are, however, endless diversities in color, varying from the rich golden-brown of the Hudson Bay country and northeastern United States, to the canary light brown of the Pacific Northwest. All are exceedingly beautiful and valuable, the darker skins, some of which are almost black, being known as Hudson Bay sable, exceed one hundred dollars in their raw state and being sold as high as five hundred dollars each when dressed. Opposum, skunk, and other cheap furs are often sold as martin in second class stores.

Like the other weasels, the Martin is a born savage, quick as a flash, restless as a chipmunk, continually on the move, and equally at home upon the ground or in trees, being a particularly expert climber and descending squirrel fashion, head first. Running by leaps and bounds, of four or five feet each, he covers the ground with considerable

swiftness. When trapped, he does not cower, but growls and fights to the bitter end.

The Martin's bill of fare includes every variety of animal he can overpower, as well as grouse and smaller birds, trout, frogs and insects, with berries in season as dessert. Sufficiently strong to kill a mink with ease, swift and agile enough to catch a squirrel among the branches, tireless in his investigation of every nook and corner that may contain a bird's nest or shelter the young of smaller animals, the Martin would indeed be a calamity were his hide worthless, were he more common and less solitary in his habits.

Kingfishers, water ouzels, and in fact, most other birds and animals stake off a certain length of stream, a certain portion of hill or mountainside, from which they drive all others of their own race. The Martin, however, goes them one better. He not only defends his preserves, but he fights to kill, neither giving nor asking quarter. Save for a couple of months in the mating season, the males lead solitary lives, and the females, at the close of summer, drive away their young to shift for themselves.

Study of Habits a Preliminary to Successful Trapping

Knowing the Martin to be the most particular of all animals in avoiding the haunts of men, I went to Al Widman, pioneer trapper of the Olympics, for information as to their habits. He reported having caught them on upper Lake creek, the most inaccessible portion of Mt. Angeles, and, a number

there were few settlers, he took a few on the mountainside south of Indian creek, between Lake Sutherland and the Elwha river. They are doubtless to be found on every mountain stream in the Olympics. Several were trapped on the Soleduck the past winter.

"I put in three years studying animals before I was able to make any headway trapping them," said Mr. Widman. "One must have a good idea of an animal's habits," he continued, "must know where it goes and what it does. One can't catch animals by setting traps hit and miss. A mink, for instance, travels up and down the banks of its stream all its life; it knows every inch of its trails; a turned leaf or a new twig excites its suspicion and it goes around them. The mink does not take bait in this country; it finds trout, mice and birds too plentiful and easy to catch, and dead bait has no appeal. Nor will one walk into a trap placed in its trail, no matter how cunningly concealed. Obstructions of which they are suspicious must be provided to occupy their attention and force them around into the trap.

"I have followed Martin tracks in the snow five and six miles through brush, over and under windfalls, up and down streams and all over the rocks of the mountainside—and five miles through such country is a big day's work. But one gets a splendid idea of the animal's habits; he finds where a mouse has been caught; here a few feathers and there the remains of a rabbit show how he has fared. I found they seldom cross a mountain stream or wash without first following it some little distance, investigating every nook and bunch of

overhanging roots. Trapping them was then comparatively easy, for a Martin takes kindly to bait and moreover is not wary about traps. But of course one always conceals a trap so he could not find it himself, were it not for the broken branch that indicates its location."

The mother Martin makes her nest of leaves and moss in almost any location such as rock crevices, hollow stumps, holes in the ground or under logs; from two to eight young comprise the annual litter.

Martins are interpolar in distribution, being confined to the forests of the north and high elevations in the mountains even as far south as New Mexico. During recent years they have become quite rare, especially in the great Siberian fur country, where they are known as sable and are not only large but also have a very rich and dark colored fur. In Alaska a closed season has been established; also, several attempts have been made to raise them on fur farms, but owing to the ferocity of the males, which causes them to kill both females and young when caught poaching within their preserves, fur farms have not proven successful.

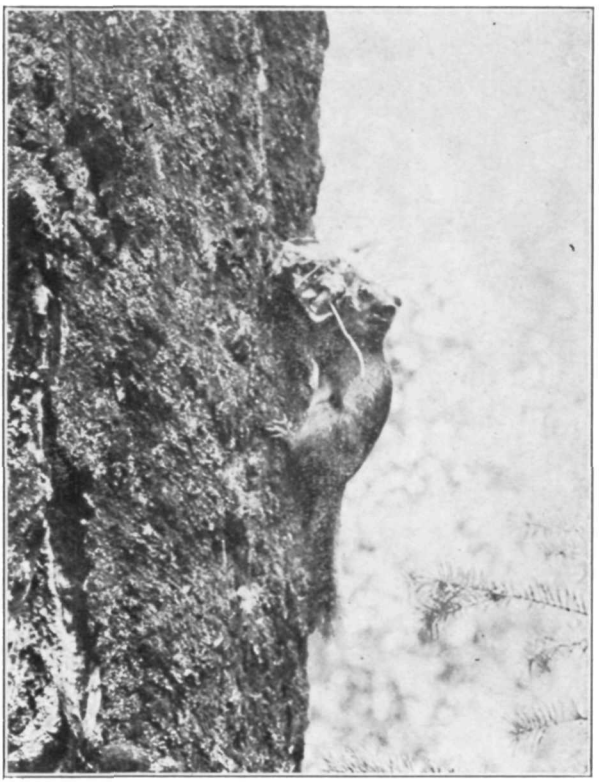


Photo by Crisler

Chickaree Carrying Leaves
for a Nest

The Chickaree

N inveterate and persistent scold —the Mrs. Caudle of the animal world — and yet withal a sprightly fellow whose cheerful presence adds much to the pleasure of a stroll along the woodland road, the Douglas squirrel of the Northwest fills a niche that would otherwise be an aching void.

No single feature of the eastern grove or forest, the city park, and the farmer's tree-surrounded home, will be longer retained in the memory of him who wanders afar, than the always active, graceful, confiding and chattering gray, fox and red squirrels. Few, indeed, are the boys of the eastern and middle states who have not had one or more of the cunning little fellows as pets, and many are the attics still treasuring tin squirrel wheels with the little beds, the high-chairs and rocking horses, silent reminders of the days when grandma was a young woman with a house full of happy children.

The gray and fox squirrels extend westward to the edge of the Great Plains and have no counterparts in the Northwest, but the little red squirrel of the northeastern forests, being partial to the

cone-bearing trees rather than the hickory, oak and hazelnut, crosses the northern continent, the red variety of the east being known as, or replaced by, the Douglas squirrel on the Pacific coast. This species is brownish-gray above; reddish-brown beneath.

The small size of the Chickaree, or Pine squirrel, as it is commonly known, affords ample protection from the so-called sportsman in search of the wherewithal for a pot-pie, and as no right-minded boy finds any real sport in shooting the squirrels and chipmunks which add so much to the life and cheerfulness of the woods, the little fellows, having nothing to fear from mankind, often race through the forest to a nearby tree, where, perching on a low branch or clinging to the rough bark of an old fir, they bark and scold away, every note being accompanied by a comical flirt of the tail, until it would seem they must almost fly to pieces in their excitement. They are particularly noisy in the fall when gathering the winter's store of cones, and correspondingly quiet during the months of the breeding season.

At other times one of them will run up a stump, carrying lengthwise a cone larger than his head; then, holding it crosswise, an end in either paw, he will cut off a scale; quickly turning the cone till he grasps the stem end together with the scale in both paws, he eats the seed; again he turns the cone crosswise, repeating the operation with marvelous deftness until he has stripped the stem of every scale; with a jerk of his tail he again sizes up the intruder, scratches his ear, and like a streak he is off for another cone.

They have several notes, some of them quite

musical, especially when heard at a little distance, and newcomers to the Northwest often inquire as to the variety of bird that has such a peculiar trilling or bubbling song; in fact, the Douglas squirrel has been called the soprano of the woodland orchestra. Like the Oregon or Varied thrush, which may be said to be their counterpart in the bird world, they possess a ventriloquial power which often furnishes no little surprise and amusement.

The Douglas squirrel does not hibernate, but is active throughout the winter, their tracks being as much a feature of the snow carpet as those of the rabbit and the junco, or snowbird. Early in the fall they begin the work of laying by great stores of cones, knot holes, hollows between the roots of old trees, piles of old cone scales at the foot of trees, and depressions under hollow logs being chosen as storehouses. At such times, one quietly sitting beside the road may hear the constant drop, drop of cones as the little fellows cut them from the limbs far overhead. The small cones of hemlock and spruce, being rich in oily seeds, are preferred, but all kinds are taken, even to the eight- and ten-inch cones of the mountain pine which are so heavy they must be dragged along the ground into piles.

Apparently the Chickeree has the faculty possessed by his eastern cousin, of remembering or instinctively knowing the exact spot where the store is cached, for one will find many an old stump covered with cone scales, in the winter, they having been dug up from the fresh snow at their base. Often there would appear to have been three or four bushels of cones buried in some

especially attractive place. A few years ago, when cones were in demand for the reseeding of old burns, many pickers became adept in the finding of these stores underneath logs or within the burned hollows of stumps. Doubtless the squirrels themselves do no small part of the work of reforestation, many of the seeds thus planted producing young trees.

It would seem that some of the larger trees, probably those bearing an abundance of cones, are used for many years by successive families of squirrels, until about their bases are built up great mounds of cone scales and needles. Those who are familiar with woodcraft seem to possess an intuition that draws them irresistibly to such "squirrel trees" when evening's shadows fill the deep hollows of river canyon and valley, for with very little effort a soft couch, high and dry and sheltered from possible rains by the great trunk of the tree and the dense foliage overhead, may be had. The rough bark of these big trunks also serves as a playground, young squirrels often chasing each other round and round, hiding between times in the deep creases in the bark itself.

The Chickaree eats many kinds of fruits and seeds, his liking for those of the apple and pear often making him a nuisance to the rancher. They rob birds' nests of both eggs and young, being perhaps the worst enemies of the feathered tribes; it has been estimated that each of the red squirrels of the eastern states destroys at least two hundred birds in a single year. Also, the Douglas squirrel has an especial fondness for mushrooms, not fresh, but dried. He gathers and dries them on exposed

Courtesy "Seattle Mountaineer"
In the Shadows

rocks, logs or on the large branches of trees and when cured stored them away in dry places under the bark of windfalls. Or, it may be, not to give him credit for too much intelligence, possibly he eats those that are laid out on the rocks when they become sufficiently dry to suit his fancy, while those that are stored away safe from the rain are the surplus left for winter consumption.

In eastern Oregon, those years when for some reason there have been few or no cones, it is said the Douglas squirrels left the forests of hill and mountain and descended into the sagebrush plains, where they literally lived off the farms, raiding granaries and potato and root bins, until the snow again left the timbered lands.

The Snowshoe Rabbit

(Lepus americanus washingtoni)

WITH the sun's slanting into the broad Pacific, when, for a brief space, clouds, water and snowfields are tinted with wonderful crimsons, violets and yellows, when rock pinnacle and emerald spire throw constantly lengthening shadows, the tiny alpine parks awake and become peoples with a myriad of scurrying animals. Rock crevice, hollow log, brush clump and dwarfed tree yield up their four-footed inhabitants, each venturing timidly forth to gambol in the short grass, to gather stores of seed and hay for winter use, and to teach their young the caution so necessary if they are to attain maturity and perpetuate the race.

Timorous to a degree almost unbelievable, the presence of these little fellows is seldom even suspected by those who climb and camp out in parties, or who, if alone, build fires for company and warmth as the shades of evening approach; but the student of nature, who sits quietly by log or rock at the edge of one of these alpine playgrounds, learns many interesting things.

Presently there comes a thump-thump-thump-thump at the edge of the thicket, apparently a sig-

nal from one of the larger animals that the coast is clear, and in a moment the first bright-eyed indistinct brown shadow is dimly seen behind twigs and dried leaves, and there hops out the cutest little bunny, its brownish-gray coat brightened with shadings of lighter color upon head and feet, its black-tipped ears edged with white, white lines underneath its nose and more noticeable than all else, not even excepting the grayish underparts, a narrow white line down the forehead. Others, old and young, soon appear and join in play, or sit, as I have had them do, no further than six feet away, and nibble the short mountain grass.

The Snowshoe Rabbit or Varying Hare might, perhaps, be regarded as a connecting link between the cottontail and the jackrabbit. Weighing from four to five pounds, it is of medium size, and at a casual glance would seem to be more of a rabbit than a hare. Nevertheless it is classed with the *Lepus* family, which includes the Arctic hare, the 12-lb. white-tailed jackrabbit of Minnesota and the international boundary line, the smaller jackrabbit of the western plains, from Central Washington to South Dakota and California, and the antelope jack of Arizona and New Mexico. Being restricted to the timberland regions of Canada and northern United States, together with the higher mountain ranges extending southward, the Varying Hare might be termed the jackrabbit of the woods.

Like the other hares, the Varying dons a snow-white coat for winter wear, the fall molt occurring soon after the first of the season's snows. At the southern limits of its range the change is not so complete, and in the Olympics and Western Wash-

ington and Oregon the color does not vary but remains brown throughout the year. As winter approaches, however, the large hind feet and toes become covered with a coat of long hair, the resultant broad pads enabling the Snowshoe to travel with ease over the light snows. At this time their tracks, some five or six inches in length by three or four in width, are to be seen crossing and recrossing the trails as though whole families had been constantly on the move; usually the tracks of the wild cat or red lynx are plentiful in the same localities. But in summer the Varying Hare, being nocturnal in habit, is seldom seen.

The Columbian Deer

In Nature's Sheltering Arms

The Columbian Deer

THE most timid, graceful, beautiful, and best known of all North American animals, the deer, though bread, meat and pie for the wolf and cat tribes, has managed to hold its own where not hunted in and out of season by its human enemies, and still remains to lend its peculiar charm to the river's brink, the open glade, and the shady ravine of the hillside, as well as to the higher mountain country.

Of deer, there are many varieties, chief among which are the Virginian, the Muledeer, and the Columbian Blacktail. The first named species, also known as the Whitetail, is the deer of the East and of the wooded portions and river bottoms of the plains; the Muledeer is the mountain deer of the West, while the Columbian is strictly a timber deer, its habitat limited to the Pacific Northwest.

Aside from the tail, a white flag in the Virginian and black in the Columbian, the most noticeable difference is found in the antlers, the main beams of the former curving forward over the nose and having upright tines, while the Blacktail's doubly branching antlers rise like those of

the elk. And of course there is the difference in size, which has been aptly described as being equivalent to the difference between the Durham and the thoroughbred Jersey. The Columbian has a more graceful body, legs more slender and trim, and an expressive face with eyes almost human. The Columbian seldom weighs more than a hundred or one-twenty-five, dressed, or in the case of the doe, about eighty pounds..

With few exceptions the antlers of our deer are decidedly inferior, seldom a pair attaining a spread of two feet, or a length of over twenty inches. Mostly they are very slender, even delicate. Deer kept in captivity live to an age of ten or twelve years before their teeth wear out and they are no longer able to obtain sufficient nourishment, but never, during this time, can it be said that the antlers present any indication of an adult buck's age. Generally speaking, only the robust animals grow a fine set; young animals and those weakened by advancing years have merely forked horns. With us, the deer shed their antlers by the middle of February, a full month earlier than the elk.

In the brush, a Blacktail becomes nothing more than a brown or gray shadow, quite indistinguishable from the bark of the fir and hemlock, or the lighter color of bleached logs when the red coat of spring turns to the grayish of autumn. Often a deer will be standing in plain sight only a few yards distant and yet be indistinguishable until it turns its head, or, making up its mind that the intruder means no harm, continues its interrupted browsing on tender shoots of huckleberry and other shrubs. This effort of nature to provide concealment is carried still further in the fawn,

which is spotted to resemble a vine, or a branch of lightened leaves, as it stands underneath the brush of the burn or draw which is usually its birthplace and where its first summer is spent.

The tail, a distinguishing feature in the deer family, is, in the Columbian, black above, shading to brown and white on the sides, the tip being entirely black. Also it is round, entirely unlike the white flag of the Virginian, or the black-tipped tail of the Muledeer. As the former does not raise the tail when in flight, it appears to be practically tailless.

In spring and summer the does and their young, of which they often have two, keep well down toward the river bottoms, or near the open glades along the banks of streams. Here they may frequently be seen wading across the water while their babies lie concealed among the brown and gray boulders. Ofttimes the fawn will lie perfectly quiet and may almost be picked up before it changes its mind, when — zip — it simply isn't there any more. At other times one may find a fawn that will allow one to pet and play with it, becoming in a few minutes almost as tame as a kitten. George Nestle, one of our Port Angeles boys, while serving as a forest ranger last summer, had the novel experience of a fawn's running directly into his arms. He saw the little fellow coming down the trail and stooped over just in time; for some minutes he petted it, until it was loath to have him leave.

Deer do not wander as much as one might think. Their entire lives are spent within a comparatively small area. Even in the hunting season, when there is firing all about, they seem to

prefer taking a chance on their protective coloration. Dense cover, rather than fleetness of foot, has saved many an office and home from the vulgar display of a pop-eyed, grinning caricature of a deer's head. But if they do run, if they fail to slip away into the brush in time, and if the hunter presses them so closely they jump forth from their friendly shelter, even then, have they still a measure of protection afforded them by Mother Nature. For while the Virginia deer runs straight away like a horse, the Columbian bounces, richochets as it were, striking the ground with all four feet, rising surprisingly high in the air for so small an animal, and changing direction as it surmounts countless rock and log obstructions.

My first deer — and the young hunter may always be depended upon to get busy in an effort to furnish the first meat for camp, no matter how he gets it — was shot on the summit of a mountain ridge, around which curves Lake Crescent. Mr. Delabarre, whose guest I was, and Mr. Chambers, both old-time hunters, went up the ridge with me. Deer were plentiful, even abundant, in those days, and I had seen a number during the summer, some of them so close it would seem I could almost have touched them. Yet I knew little or nothing concerning the modus operandi of actually finding a deer, and finding him within a reasonably short time, when setting out to hunt for them. Mr. Delabarre gave me two pointers. Firstly, the wind had been blowing from the northwest for three days and the deer would have come over onto the southern slope where it was comparatively warm. Secondly, I would find them in the little brushy places in the draws, or pos-

Partly Albino Deer

sibly lying down in beds that they made at the base of large trees on the steep mountainside. I was to shoot three times if I got one, that he might return and help carry it down to camp. Delabarre turned to the right, while I stepped up over the crest of the ridge — and there, right on top and the only place in the entire length of the ridge, was a depression, a brushy swale, and there also was the deer. The first shot knocked him down, but he bounded to his feet and on down the ridge, the next two shots being clean misses. He soon fell again and we went down and got him and lost no time in getting to camp, about a mile directly below us, and even so it was almost too dark to travel before we had climbed over the last rocks and crossed the last log between the top of the ridge and the lodge.

Then I learned something new, to me: The first deer belonged to the camp; if I wanted some venison to take home I must go back up the next day, for my stay was limited, and pot another. That proved to be easy enough, for I found him lying down on the upper side of the base of a tree. I took him "as is," having learned that shooting deer on the bound was too much like jacksniping in the prairie sloughs — when the lead reaches 'em they aren't there.

The above is included herewith merely for the purpose of indicating the advantage of acquiring a little information as to the habits of an animal before starting out on one's first hunting trip. Many a man has spent long days on a ridge without seeing a deer, although fairly fresh tracks may have been plentiful, while his companion has had the "luck" to see several and to secure the limit

— on apparently the same kind of a ridge just across the way. An old-time hunter once told me he came out West without funds or experience; the first winter, the first two years, he was barely able to earn enough to keep his family. Whenever he wasn't working he would put in the time hunting, yet without success although he knew there were deer all around him and only his stupidity stood between himself and much-needed meat for his children. "Now," he said, "with deer not nearly so plentiful, I can go out and get a buck within a half hour." He had simply learned the many little things one must know before he becomes a successful hunter.

However, shooting deer is not always the sport one, picturing in his mind the bounding animals, is apt to think. Most of them are killed as they walk slowly along their accustomed trails early in the morning, the hunter waiting on an outcrop of rock just above, or behind log or stump. Others are shot as they cross the road, being driven out from their haunts by dogs. Even today, in spite of the law and a strong public sentiment fostered by sportsmen's organizations, dogs are used for the purpose. But by far the greater number of deer shot are killed when, the first moment of alarm having passed, they stop and turn about to satisfy their curiosity. The successful hunter is not always a sportsman.

Speaking of sport, it is timely to pause a moment and consider the words of Theodore Roosevelt: "It is to be remembered that the preservation of game is by no means merely the affair of the sportsmen. Most of us, as we grow older, grow to care relatively less for the sport itself than for

the splendid freedom and abounding health of outdoor life in woods, on the plains, and in the great mountains; and to the true nature lover it is melancholy to see the wilderness stripped of the wild creatures which add beyond measure to the wilderness landscape and which, taken away, leave a lack that nothing else can quite make good. So it is of those birds of the wilderness, the eagle and the raven; and indeed of all wild things, furred, feathered, and finned."

Tame deer — that is, the does — make the most interesting of pets; but the bucks are never to be trusted, particularly during the running season. When raised from babyhood and allowed their liberty, the does will remain in the vicinity of their home, doubtless never being far away from the edge of the clearing itself. I have a picture of a doe suckling her fawn, standing among the grass and posies of the farmyard; she had been raised on the place, given her liberty, and from time to time came down to the barnyard to visit the farm animals. When her first baby came, she promptly came into the clearing, evidently realizing that there the little one would be safe from prowling enemies. While she would allow the folks to approach quite closely, never would she submit to their putting hands on her baby — No sir!

What is still more strange — when one considers the age-long timidity of the deer — perfectly wild deer will become almost equally friendly. I have in mind a doe which came out, morning after morning, into the clearing at Longmire Springs in Rainier National Park. Doubtless she left her fawn hidden in the bushes, but at any rate she was al-

ways alone. Prof. Flett, head ranger in charge of the park, started to cultivate her acquaintance; he would go out and talk to her, gradually approaching more closely until he was able to get up within twenty-five feet before she would slowly edge off. She knew Flett as a friend; of others she was distrustful and would return to the timber immediately they started in her general direction.

Another deer — sometimes three, frequently two, evidently raised in the immediate vicinity of his home — has for months come with great regularity to a hitching post in the grass plot in front of Grant Humes' ranch house, where they usually find salt placed purposely for them. The first deer must have been decidedly unafraid to have found that Mr. Humes was occasionally salting his ponies at the foot of the post. It matters not, now, that people may be sleeping in tents right alongside, or that Grant may be standing at his door, forty-five feet distant; so long as all is quiet they apparently pay little attention to their surroundings. One evening a visitor stood with his hand on the post, while Grant waited at the door, and the deer came up and licked the salt from out the hole, long since worn to the depth of a foot, without noticing or perhaps caring that the double post was half human.

That the deer are used to being with the horses in the field, is shown by the fact that they will sometimes follow them through the gate, coming within fifteen feet of the barn door, and paying no attention to the rattling of harness. Of course part of the pasture, as is usually the case in a ranch home, is merely a burn — logs interspersed with young fir, willow, maple, vines and ferns.

Wild Deer Photographed at Twenty-five Feet

These deer were undoubtedly born and raised within sight and hearing of the barn; also, the ranch is a sanctuary and all wild animals soon learn the limits within which they are safe from hunters.

On one occasion Mr. Humes took his cat, a white cat plainly visible in the twilight, down to the barn. That the deer were perfectly accustomed to the cat, and he to them, was shown by the fact that one came up and began fussing with it, nibbling along the cat's back and up to its ears. At another time, while sitting quietly on a log observing them, Grant had a young deer come up and poke its nose against his shoulder, evidently satisfying its curiosity as to what kind of a companion he might make. At times they play in the pasture and are to be seen chasing about the big stumps and almost standing on their heads as they kick their heels in the air.

Once, for Grant says it was the only time he ever saw anything like it, a big doe with hair raised took after the dog, being only thirty feet distant. The poor hound had been trained as a cougar dog — the first principle of his education being that he was to leave deer strictly alone — and what was he to do? Doubtless as a puppy he had been playing with the young deer in the pasture, but this mother wasn't going to take any chances with his being on too friendly terms with her babies.

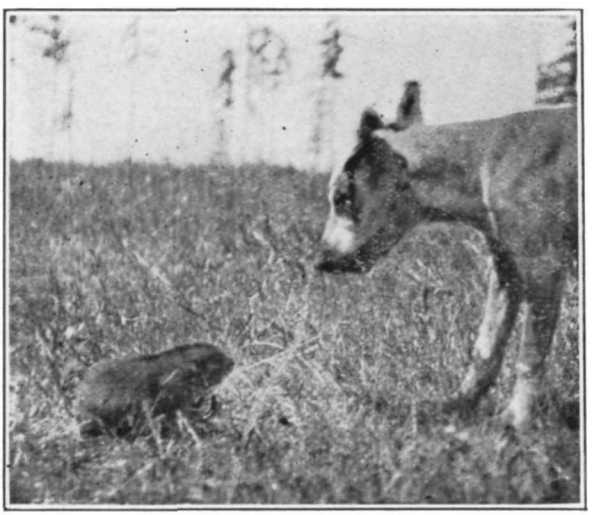
These deer stories are true — absolutely true. Doubtless many other little incidents, all equally wonderful, might be given, did we but know of them, for in the realm of nature, it must be remembered, truth is always stranger than fiction.

The Chehalis

I FIRST met him in an old log cabin, one evening way back in the fall of 1900. Tired and wet after the long hike and climb thru a heavy fog to the alpine valley known as Cox's ranch, I was sitting on a small box enjoying the warmth of the fireplace when, with a slight scratching by way of introduction, he came and took a seat on the ground alongside.

He was the oddest little animal I had seen in a long time, dark gray or gray-brown in color, chunky, seemingly without any neck, eyes, ears, or tail! Also, he was large for a small animal, being about a foot in length and a third as thick.

A quick movement by Mr. Cox, who was preparing supper, sent him scurrying to his hole under the logs before I had an opportunity to give him more than a brief onceover, but I learned that his name was Chehalis, and that he, together with several hundred others of his tribe, lived in burrows on the mountainside above the cabin. Or, very likely, he had been crowded out above and had burrowed under the cabin, one entrance to his home happening to be within the walls of that crude shelter.



The "Mountain Beaver"

Presumably Chehalis (now Grays Harbor) county, and the Chehalis river, and the city of Chehalis, county seat of Lewis, all located on the southern border of the Olympic peninsula, were named after him — honor sufficient for any rat, however ancient his lineage.

Of course I inspected his home, or the homes of those of his clan, first thing the next day. A thousand burrows from four to six inches in diameter; a thousand loose piles of earth or gravel in front of or below each; several hundred little piles or windrows of grass laid out on the logs and rocks close to each of the more used burrows, for evidently there were several openings to each home — and not one single Chehalis to be seen.

That was in the morning. In the evening, or late afternoon, if the day happened to be cloudy or foggy, the hillside came to life; it rustled and squeaked and scurried back in the shelter of the alders and of the evergreen forest on the slope above.

The Cox park is of considerable area, a level, wet piece of ground in which the grass grows knee-high — an ideal home, one would think, for an animal given to the mowing, curing and mowing away of hay. As a matter of fact, however, it was coarse weeds and not really, truly grass the Chehalis was gathering. The park was filled with flowers of many varieties, plants from eighteen inches to over six feet in height, and it was from among these he was selecting his winter's supply. The weeds were usually bitten off a few inches above ground, as the haymakers, not caring particularly for the woody stems, set their sickle knives as high as they can reach.

Often, one may, by quietly waiting alongside the mountain trails early in the evening, see the Chehalis gathering and packing in his harvest. The plants are dragged out and laid together, butt ends all one way; when he has sufficient for a load he grasps the stems in his mouth and starts off for home with the branches held partly over his back, partly trailing along the ground — a living hay-rack decorated with yellow, purple and white flowers mixed with fern. A convenient log, rock, or spot of gravel is chosen as a drying rack, and here the plants are spread out to dry for a few hours before being stored away under ground.

At other times, and more especially where coarse plants are not plentiful, the Chehalis depends upon the new shoots and leaves of alder, willow, mountain ash, and, in fact, almost anything that happens to be growing in his vicinity; these he obtains by climbing, his long claws and tubercle-like thumb enabling him to ascend the slanting bushes for some four or five feet; he will also climb firs where the small dead limbs that crowd each other for the first few feet have not yet fallen off. Fern roots, also, make up quite a portion of his food, and it is probable that much of his gallery work in such places is undertaken in search of this delicacy.

Just why the Chehalis should also, and quite generally, be known as the mountain beaver, it is difficult to understand. He differs from the beaver in size, shape, color, texture of fur, character of tail, and in habit. Rather does he bear a closer resemblance to the muskrat; the general appearance, including size of adults, which weigh be-

tween three and four pounds, is very similar. Yet one would never think of calling the Chehalis, with his inch-long, guineapig-like tail, all but concealed in the coarse worthless fur, a muskrat. The Indian name Showt'll, or Sewellel, though seldom heard, would doubtless be more appropriate than either of the others.

As a matter of fact, the Chehalis is, structurally speaking, an oddity. He is found only in North America and only on the North Pacific coast west of the Cascades. While a rodent, he has no relatives, no cousins, as it were, among the rodentia. Like the duckbill, he has survived from ancient times, as odd in many ways as the Nemanooks, which, the chechako learns, cuts its way through the mighty forest with its saw-tail. Like the mole and pocket gopher, their foreleg muscles are well developed and their claws are long and sturdy. And like many of the smaller mammals, they have a slight musky odor which is also noticeable at times about their burrows.

The young are born with eyes closed, one litter of from two to four a year, in nest chambers lined with twigs or grass stems, and dried grass or leaves. Although the hillsides are honeycombed with their burrows, as well as being covered with a network of well-kept trails, it is seldom that two or more are found occupying the same home, that is, with the possible exception of a short time during the breeding season. The young are able to shift for themselves by late July or early August and at this time there is a great increase in the number of earth mounds at the entrances of burrows, particularly below or at one side of the old colony workings.

Originally the Sewellel was strictly a mountain animal, living on the slopes above the alpine marshes and lakes, where the growth of coarse plants is almost tropical, or on the grass ridges connecting the mountain peaks. Here it found, and still finds, food in abundance, a hundred times more than can possibly be eaten or stored away. Here they live in colonies of hundreds, even thousands.

Being nocturnal to a degree, and living under ground a goodly part of the time, their energies find vent in the digging of long tunnels, tunnels which, because of the great numbers of large roots and rocks encountered, as well as because of the necessity of avoiding the homes of their neighbors, are exceedingly irregular.

Inasmuch as they cannot dig into the mountainside to any great depth, the tunnels are of necessity close to the surface, their work being extended to the right or left, up or down, accordingly as they find the field occupied or not by others of the colony. During the dry season, when the lower snowfields have disappeared, they tunnel across and up and down the little hollows and gulches. Often, too, the young animals, finding a wash unoccupied on either side, will locate their homes there, only to come to grief with the return of the rainy season. Old logs, of which there are so many in the timber, are used as roofs when they lie on the ground, or, if above the ground, the tunnels give way to surface runways extending the hundred or more feet of the log's length, when the animal again seeks the protection of the underground passageway.

A Klahhane Fawn

The nest and storage chambers, of which there are from two to half a dozen, are about sixteen inches in diameter, with about the same height, and while usually found well supplied with dried ferns, plants, twigs of shrubs and evergreens, and roots, they are kept clean of offal and coarse twigs and stems, there often being as much as a bushel of refuse piled up at the back door.

As they do not hibernate, they work through the heavy snow during the winter, digging tunnels for considerable distances; at this time also they extend their earth tunnels, packing the soil or gravel away in snow tunnels above. Often, in the small groves of alpine fir between park and crest of mountain ridge, there will be noted long earth forms, where the dirt-filled tunnels have been exposed by receding snow. At this time, too, trees will be found girdled, while many of the smaller trees, bent down nearly or quite horizontal by the weight of snow, will be almost denuded of bark.

The Chehalis is a fighter — a fighter to the manor born. No wolverine ever more zealously guarded his hunting range; no kingfisher was ever more jealous of his rights to a particular strip of stream, than is the Chehalis to a few yards of plants growing along the length of his burrow.

With the exception of the mountain parks, there is seldom an over-abundance of food. Comparatively few plants grow in the shade of the fir and pine, and the individual who is so fortunate as to have title to a sunny, open tract at the edge of the timber, where are pea vine, heliotrope, asters, and other mountain flowers, must, as the season advances into haymaking time, be on guard lest

his neighbor raid his preserves and leave him without a sufficient amount of hay to carry him through the winter.

And so, through the centuries, there has developed a race of fighters. Every individual is a born fighter — hair-trigger disposition, hat ever in the ring, chip always sliding off to the ground.

When disturbed, they will growl and chatter their teeth, forcing the breath in and out for all the world like a young great-horned owl. I remember one in particular which I met in the early morning hours on a mountain trail a few years ago. He was nosing about in a patch of twin sisters or linnea, apparently hunting for something edible. It soon became apparent he did not care for the vine, and I realized what I had never noted before, that there is never any of the linnea in their piles of hay, even though the mountain slopes may be literally covered with it. After a moment I touched him on the rump with a light stick I was carrying, when he whirled and grasping the end of it shook it much as a terrier would shake a rat. Touching him again, ever so lightly, on the rump, he whirled again, and again, until finally he brought up with his long claws hooked over the edge of my pacs, looking up in my face and growling at a terrific rate. However, when put in a box or enclosure they soon forget their troubles and begin eating as though they were safely at home.

The beaver appears to lack the intelligence common to most of the rodentia, due, possibly, to his habit of remaining closely at home. While he does considerable work in the course of the year, he

certainly spends most of the time asleep in the nest chamber.

Of late years, since Nature's balance has been disturbed by the killing of wild cats, wolves, hawks and owls, the beaver has multiplied amazingly, and the mountain ridges and parks being overcrowded, has gradually worked on down the valleys, even to the edge of the salt water. This has brought him in numbers along the edge of every farm, where he has promptly availed himself of such herbage as he might there find, but showing a particular fondness for cabbage, potatoes, and other garden stuff. There followed unsuccessful efforts upon the part of the ranchers to eliminate the animals by the poison route, for, though they might clean out those in the immediate vicinity, always there were thousands of others ready to overflow from the hills above. Besides, the hundreds of dead bodies, contaminating springs and streams in the vicinity of homes, are always a serious menace to the health of both persons and stock. Trapping merely holds them in check from day to day, but in some localities it would seem that line of endeavor must be added to the other routine work of the farmer. The Forest Service, where engaged in extensive planting of burned-over areas, has used strychnine to good purpose, greatly reducing the loss of young trees through the harvesting operations of the beaver.

Their habit, or necessity, of burrowing so near the surface of the ground has made them a great nuisance along the hillside and woods roads, where horses continually break through into the runways, not only making an ugly hole, but one the beavers will not permit to be and remain filled.

It has been claimed by superficial observers that the mountain beaver has a preference for moist places, where the water is actually running, and that he digs drains to carry off the water — in short that he is something of an engineer. Misled by his common name, which was given him, the Lord knows why, by early settlers here in the West, such investigators find him possessed of many of the attributes of the true beaver. Had they continued their investigations sufficiently to have gotten away from the low lying, wet valley lands, where the surface water naturally runs through the beaver's burrows during the rainy season, they would have found him to be a true mountain animal, abundant where food is abundant, whether the soil be wet or dry, but not where food is not plentiful. They would also have found that those regions where Nature's balance has not been interfered with, at least to any great extent, the animals have not increased sufficiently to spread over the lower mountain slopes. Thus, in this locality, we have the beavers working on the sides of the gulches within the town of Port Angeles, in fact, directly underneath the front door of the county's court house, while over on the other side of the Mt. Angeles-Hurricane Divide there are very few beavers to be found below the four thousand foot level.

The Bay Lynx

A MASTERPIECE of Nature's handiwork — possessing a protective coloration so perfect it blends imperceptibly with the lights and shadows of the forest floor, with the rough bark of the prostrate fir, the burned and crumbling rock of the hillside, the boulder-strewn bar of the stream — the Bay Lynx elicits our admiration, the while we heartily condemn it for its destructiveness of deer and grouse and place a bounty upon its bead to the end that its tribe may not increase.

Like most other members of the cat family, the lynx is not built for speed; he would cut but a sorry figure in a fair race with a hare or doe. But crouched upon the end of an old log, concealed in a bunch of dead fern, or flattened at the edge of jutting rock, he awaits with the endless patience of the wild for his unsuspecting quarry to come within striking distance. Or he stalks, with movement almost imperceptible, and taking advantage of every bit of favoring cover, the family group of grouse that unsuspectingly indulges in play in the open spaces of forest or mountain park.

Although credited with a fair degree of ferocity

when cornered, provided they be not held by the jaws of a trap, and when caged appearing to be anything but a pleasant pet, the wild cat really possesses a cowardly disposition. Hunting mostly during the twilight, or in the deep shadows of the forest aisles, and having stealthy habits, they are certainly past masters of the gentle woodland art of keeping out of sight. Now and then one is caught in a trap; a few are treed by dogs and shot, and occasionally the young are captured. Yet one would never guess how many of them are yet left, even at the very edges of civilization, were it not for the telltale evidence of their tracks in the fresh snows of winter. On the slopes of Mt. Angeles, and even half way down to town, their footprints may be seen crossing road and trail a thousand times, where they have tracked the cottontail or snowshoe until a favorable opportunity offered for the final stalk, or where they have lightly sprung to log or rock above the runway of smaller animals.

They live upon rabbits, mountain beaver, wood rats, squirrels, mice, and all small animals and birds, and undoubtedly kill more deer (fawn) and grouse than are destroyed by all other agencies. Their extermination has at times been a great problem to ranchers in timbered regions, where sheep are kept in small numbers.

The bobcat or wildcat (Lynx rufus), differs materially from the perhaps better known Canada lynx, being of a reddish or buffy color, striped and spotted with dark brown, almost black, while the latter animal is light gray as befits a dweller in the more open land of long winters east and north of the Cascades. The bay lynx has a barred tail

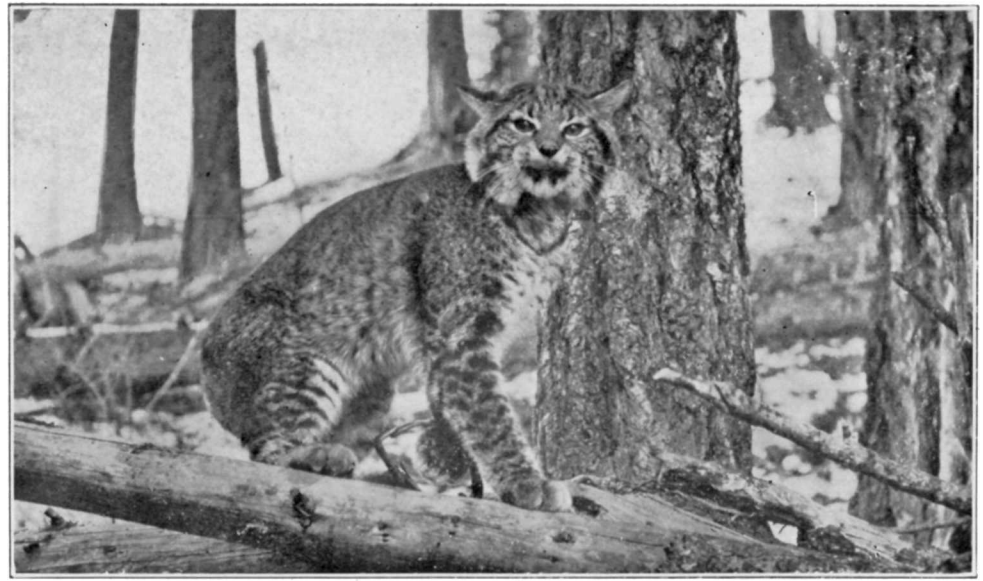


Photo by Humes

Bobcat or Bay Lynx

about six inches in length, while the stub sported by the Canuck is gray with a solid black tip.

The Canadian species has prominent side whiskers, gray, penciled with black, and ear-tips or pencils of coarse black hair. In the red species the whiskers are present, but much shorter, forming a heavy ruff which adds much to its beauty, and the ear pencils are also comparatively short.

The bay lynx is a trifle smaller, possibly a third, and appears to be smaller than it is, for the fur is much shorter, especially during the summer months. The legs are more slender and the paws smaller, the northern species being provided with large pads that he may the more easily travel through the light, dry snows of the interior. An average specimen of the bay lynx weighs about thirty pounds; he will stand eighteen inches at the shoulder, and will measure thirty-eight in length, including the stubby tail.

He is widely distributed, there being a number of sub-species ranging from Washington and British Columbia to the New England states and south along the higher elevations of the mountain ranges. There is only one variety of lynx, or wild-cat, in the Olympics.

The Mountain Goat

WHILE the fauna of the Olympic mountains has, for some peculiar reason, never included the Mountain Goat, it is the intention of the Klahhane Club (Olympic Mountaineers), aided by the Forest Service, to introduce the species as soon as it may be possible to secure them.

Having always been greatly prized by sportsmen hunting for trophies, the goat is no longer common in either Washington or Montana and it is said that where they are found the people are very loath to part with even a few individuals. It is the opinion of Forest Service officials, however, that it may be possible to secure some in exchange for young Roosevelt elk, which are to be easily and comparatively inexpensively obtained. That the goat would find an ideal climate and surroundings in the Olympics is evidenced by the fact that they range from Vancouver northward to the Kenai peninsula, being common along the Alaskan coast.

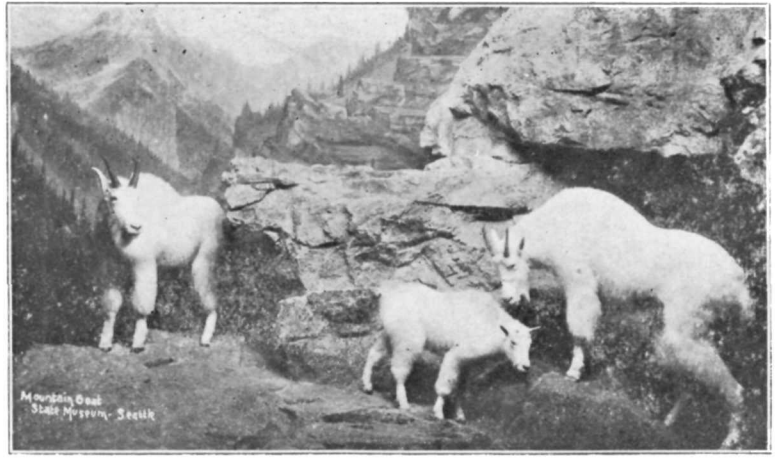
Dr. Wm. T. Hornaday, Director of the New York Zoological Gardens, and one of the leading authorities on animal life, made a "Pilgrimage to

Goatland" in the Kootenay country a few years ago for the express purpose of studying their habits. His descriptions of the country, as set forth in his "Campfires in the Canadian Rockies", tally exactly with the Mt. Angeles country, but, it must be confessed, not so well with the region known as the Main Divide of the Olympics. On Angeles we have the high alpine parks, the narrow ledges on which grow abundantly the identical species of plants the goat loves, and the wind-swept ridges with their dense clumps of alpine fir — while back in the interior of the Olympics the high alpine valleys are filled with ice and snow. Cliffs, with plant life growing about their bases and along the ledges themselves, is of primary importance, although the goat frequently wanders down into the small grassy parks when particular varieties of plants in which they are most interested become abundant. They eat very little grass, neither do they browse on the evergreen timber, unless forced to do so by the winter's heavy snows. As long as the wind sweeps the high ridges — such as the crest of the First Peak of Mt. Angeles, or the exceedingly rugged ridge extending from the Second to the Third Peak — free from snow, they remain right on the crest. But if necessary, they will descend into the timber, a thousand feet or so below.

Dr. Hornaday says: "On both sides of our camp the mountains rose steeply. First came the roof slopes, their faces seamed with parallel slides and ribbed with ridges of rocks and points of green timber that climbed up between them. Above all that rose the long stretches of crag and rock wall. . . . There was one old Billy who fascinated us

all. When we looked out of our tents on our first morning in that camp, he was calmly lying upon a ledge at the foot of the cliff immediately above us, near a bank of snow. For two days he remained there, at the same elevation, moving neither north nor south more than three hundred yards. When hungry, he came down to the foot of the cliff and fed on the tender plants that grew at timber-line, then climbed back to his favorite contour line, to lie and doze away the hours. That goat seemed so sociable that finally we began to regard him as one of us,"— and the succeeding pages detail a most remarkable day spent in obtaining photographs, the finest series ever taken of the Mountain Goat and the only ones ever secured within a distance of ten, eight and even four feet. "He suddenly turned on me," writes Mr. Phillips, one of Mr. Hornaday's companions, who took the photos, "gritting his teeth as he did so. His lip protruded like the lower lip of a charging bear, and with his front feet he stamped on the rocks until the small, loose fragments flew in every direction. Unfortunately I was so scared that I did not have presence of mind to press the bulb at the right distance. He bounced up within four feet of me, when again the two big, glaring eyes of the camera fascinated and checked him. Just as he turned his head from the unwinking eyes of my stereo, I snapped it, but he was inside the focus." All the pictures were fine, and the details of the country shown in the pictures, the rock walls, ledges, stunted trees — all are identical with that of the eastern slopes of the Second Peak of Mt. Angeles.

"I consider the Mountain Goat," says Dr. Horn-



Courtesy C. J. Albrecht, Curator U. of W.

Mountain Goat

aday, "as an animal to whom fear is almost an unknown sensation. He is serenely indifferent to the dangers of crag-climbing and ledge-walking, and to him a five-hundred foot precipice is no more than a sidewalk to a domestic goat. So long as he has six inches of rough points on which to plant his rubber-like hoofs, he considers the route practicable."

"Although the true abiding place of the Mountain Goat is from timber-line to the tops of the summit divides, and the precipices which buttress the peaks, it wanders elsewhere with a degree of erratic freedom that in a cliff-dweller is remarkable. It seems very strange for white goats to range far down into the timber and remain there, but they often do so."

"Judging by what we saw in the Elk river mountains, the Mountain Goat avoids the drifting snows of winter by choosing for its sleeping-places the knife-like edges of high 'hogbacks,' where it is sheltered by the clumps of fir trees. And yet over those ridges the wind sweeps with a fierceness it seems no living creature could long withstand. We saw a dozen ridge summits, paved with their droppings, which Norboe and Smith assured us were the winter sleeping-places of goats. In winter goats also seek food upon the bleak ridges from which the snow is continually swept clean by wind."

"The Mountain Goat is not only sublimely courageous in climbing, and in traversing precipices, but as occasion requires, it is also a bold and effective fighter, which qualities are best illustrated by the records of actual occurrences," among which are the following:

"For a number of years Mr. Arthur B. Fenwick has maintained a large ranch about fourteen miles north of Fort Steele, B. C. Being an ardent sportsman and nature-lover he has seen much of the animals that literally surround him. In response to an inquiry, Mr. Fenwick wrote me as follows: 'As to the fighting capacity of a full-grown billy goat, he will, with a little luck, kill almost anything. The story I related to Mr. Van Nostrand related to an occurrence on Joseph's Prairie. A full-grown billy goat happened to stray out there, and old Chief Isadore, who was camped there, thought that with horses, dogs and ropes they could catch the animal alive. I think fifteen dogs left the camp for the goat. A little later a squaw saw they were having a bad mix-up, and ran out to the Indians with a rifle. One of them shot the goat. All but two of the dogs were killed on the spot, or died very shortly. It was with the greatest difficulty that the Indians saved their horses from getting punctured by those terrible little horns. I will tell you another fact, which without the explanation you would not believe. A goat will sometimes kill a full-grown silver-tip bear! I once found a big goat, dead, which evidently had been killed by a silver-tip, as there were lots of tracks all around, and the goat's back was broken. I thought it queer that the bear had not taken the goat away and buried it, as usual, so I looked around. I found the grizzly dead, and all bloated up; and when I examined him I found the goat had punched him twice, just back of the heart. He had been able to kill the goat and had then gone off and died."

Another story told Dr. Hornaday, by B. T. Van Ostrand: "They started after the goats with ten dogs. The larger dogs ran up to the old goats and tried to seize them by their heads. The goats stood their ground and tossed the dogs over a precipice so quickly the men could hardly realize what had happened until they saw the dogs in the air. When White and Chapman appeared the goats moved off."

"In the spring of 1905, Charles L. Smith saw a female goat successfully defend her kid from a golden eagle which sought to seize it. The goat stood close beside her young, and whenever the eagle swooped and sought to seize the kid, the mother reared on her hindlegs, and with her horns made thrust after thrust at the eagle. In a short time the eagle abandoned its attempt."

"The goat is very stockily built — for stability and strength rather than for agility and speed. The long spinal processes of his dorsal vertebrae give him a hump somewhat like that of the bison; and like a bison he carries his head low, and has short, thick legs, terminating in big hoofs. His body is big and full, and his sides stick out with plenty. He can carry his head above the line of his neck and shoulders, but he seldom does so save when frightened, or looking up. His horns are jet black, round, very smooth for the terminal half, and sharp as skewers. In attacking, the movements of the goat are exceedingly jerky and spasmodic, advancing and whirling away again with the quick jumps of the modern prize-fighter.

We endeavored to learn something of the food habits of the goat and to this end I took a sample of the contents of the stomach of my first goat,

panned it out, and permanently preserved a series of specimens. Of grass we found only a few blades. It would seem, however, that this was due to an autumn caprice, for surely in other seasons this animal must feed upon grass. The stomach contained nothing to indicate a browsing habit, save a few leaves of the yellow willow. Our first two goats were killed while feeding upon a lace-leaved anemone or pasque flower, called Pulsatilla occidentalis. Its leaves are finely cut and lacelike, and one plant furnishes several good mouthfuls. It was quite abundant, and the goats were very fond of it. We found it in fruit, with the peduncle elongated into an upright stalk from eight to ten inches high, crowned by a head of silky achenes, with long plumose styles, very suggestive of a ripe dandelion." This particular species, and all the following which he mentions, are very plentiful on Mt. Angeles: Mountain sorrel, wild valerian, yellow willow, squaw-weed, mountain timothy, wild pea, wild strawberry. "It is probable," writes the Doctor, "that in spring the goat's bill of fare includes many species of plants not in the above list, and that throughout the year it varies greatly. In spring the flesh of this animal is so strongly flavored by the wild onion (of which there are millions on Mt. Angeles), then greedily fed upon, that it is quite unpalatable, but by September that flavor has totally disappeared, and goat's flesh, cooked and seasoned with a modicum of intelligence, is then as good as venison of the same age."

"Of the thirty days spent by us in the home of the Mountain Goat, only two were devoted to hunting goats to shoot them. Scarcely a day passed without one flock of goats in sight. We saw

Young Elk Tired Out in Snow

two hundred and thirty-nine individuals, challenging all repeaters, and carefully eliminating those seen a second or third time. It was because we shot little that we saw much.

"Take the record of our four days on Goat Pass, where we literally camped on the goat's highway between two groups of mountains. The first day we saw forty-seven goats, all of which saw us; and three of them ran through our camp. On the third day we saw forty-two goats, and were seen by all of them. We did not fire a shot on those mountains until the third day, when we killed two goats. On the fourth day it was remarked with surprise that all the goats had left the country! This was literally true. Word had been passed around among the ten or twelve flocks originally living there, that there was danger afoot; and as if by magic, one hundred and ten of the one hundred and fifteen goats we had seen simply vanished! The only bunch that remained was a flock of five nannies and kids which were isolated on a rugged mountain that ran off due westward from the chain of peaks on which we were. Evidently they did not get the word which alarmed all the rest. We had fired our rifles in one spot only, which was at the extreme northern end of that goat-infested area. Our guides remarked, 'We've got to get out of here, and look for goats somewhere else, if we want to find any more.' "

The Mt. Angeles game sanctuary, established at the request of the Klahhane club, was planned, in part, to provide a home for the Mountain Goat, where it might live in no fear of molestation by human enemies.

The White-footed Mouse

"THERE, I guess that's mouse proof," said a forest guard to whose lot had fallen the patrolling of a long stretch of the Elwha river, the upper watershed of which is the real heart of the Olympics.

The box in question had originally held canned cream, but was then doing duty as a cache. It contained a little flour, rice, chocolate, a piece of bacon, a few hardtack, coffee, milk, and other necessities of the mountaineer. Unlike most caches, however, the box was not a hiding place, but was placed on a bough bed under a small open bark leanto, for there, forty-five miles up-river from Port Angeles, its privacy would be respected by all, or by all save the White-footed Mouse.

For the deer mouse, you see, is omnipresent — everywhere. Though limited strictly to North America, it is found from Yucatan to the Arctic, and from sage desert to mountain peak. Varying slightly in color, or shade, being brown, fawn, or gray, according to the prevailing tint of its surroundings, it is always to be known by the silky underparts, white feet, and long tail, no animal being more delicately or more beautifully shaded.

Because of the variations in color, naturalists have listed over seventy species and sub-species of this one little animal.

Though claiming no relationship to the plebian house mouse — that vermin originating in Asia — it nevertheless makes itself an equal nuisance in mountain cabin and camp by its thrifty habit of storing up food for the proverbial rainy day.

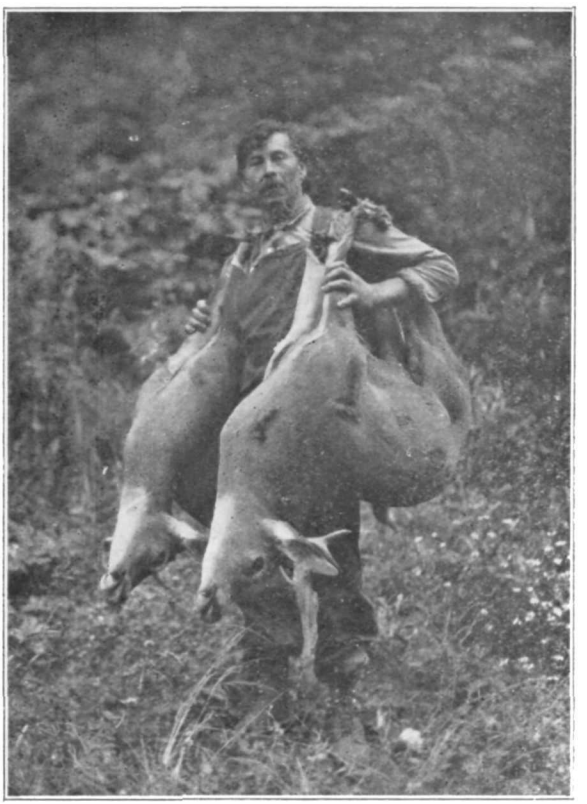
Its food ordinarily consisting of grass and other plant seeds and nuts, especially the seeds of the Oregon and vine maple, the fir and pine, and the juniper, together with an occasional insect by way of dessert, the white-footer has no scruples when it finds its human friend has provided a bonanza of good eats that need only to be added to stores already hidden in hollows in trees or stumps, or in burrows, to amply provision his family through the winter months. Possessing cheek pouches, and being, like the ant, no sluggard, the little fellow will make a sack of oats, hung under a limb, or on a peg within shed or cabin, fade away as rapidly as the sands of an hour glass, or the water from a punctured canteen.

The white-footed mice are very productive, several litters of from four to seven each being raised in the course of the summer, the nest being a ball of vegetable material or, in camps, of blankets or clothing cut and ravelled into a downy felt. But inasmuch as they have a host of enemies — weasels, small owls and sparrow hawks, jays, snakes, skunks, wildcats, mink, etc. — they are kept within bounds.

Beautiful and graceful little animals in themselves their presence in the woods, particularly in the winter when the lacework made by their tiny

feet as they cross the fresh snow from tree to tree elicits admiration, they would be sadly missed by those who love the out-of-doors were some unforseen plague to wipe them out of existence. So we make our caches mice tight, provide them with an old sack or piece of quilt that they may leave our good bedding alone should they be able to reach it where hung up with wires, and enjoy their sprightly company as they run about the logs and over the floors of the old cabins, our temporary refuges in time of storm.

Our variety of the White-footed Mouse (*Peromyscus maniculatus austerus)* is found only in the coast region of Puget Sound, north to B. C., including Vancouver Island. The type specimen came from Johnson's ranch on the Elwha river, Clallam county.



Billy Everett Bags the Limit

The Chipmunk

(Eutamias townsendii)

THE woodsman's two best friends — aside from his dog — his really, truly friends who are always willing, nay, eager, to share with him his last hard-tack, the trimmings from the last slice of bacon, or the burned edge of his flapjack, giving in return that cheerful and confiding companionship which those who are familiar with nature and her ways value so highly — the woodsman's two best friends are the mountain jay and the chipmunk.

The one alights, with a soft "whew", seeming to say "Thanks, Old Top", and appropriates anything he may desire as though he believed you had him in mind all the time you were preparing the meal. The other, naturally more timid, having so many enemies that he may be said to walk in the shadow of death, will size you up from every side, scurrying away like a flash at any startling movement or sound, yet ever becoming more trusting until finally he will take a cracker from your hand. And, by the end of the week, should you maintain camp in one place that long, the jay will be alighting on your shoulder, while "Chips" will even climb up onto your knee for proffered nuts.

The Oregon Chipmunk is rather larger and more soberly colored than his eastern relatives. As the family is nearly cosmopolitan, being found in northern Europe and Asia as well as in North America, and as varying conditions produce changes in both size and coloration, there are many varieties. But all are alike in their inquisitiveness and their graceful, sprightly ways.

Frequenting the open roadside, the brushy burn, the tangle of berry bushes, the deserted cabin and old ranch houses and shingle mills, and being possessed of a desire to be always on the other side of road or trail, as auto or pedestrian comes into view, the little fellows are naturally the most noticeable of all the woods folk. However, like all squirrels, they love light, warm, sunny weather, being really active only on those days when nature smiles most brightly.

The chipmunk appears to be ever on the lookout for something edible. No kernel of corn or rice, no crumb of bread or cracker, may lie on the ground in his vicinity, and its a truly surprising quantity of food that can be stowed away in his cheek pounches before he will acknowledge with regret that he cannot hold another crumb and scurry away to his storehouse, only to return in three or four seconds for more. The name of the genera, Tamias, means steward, being taken from their habit of storing grain and nuts.

They eat cone-seed, dogwood berries, hazelnuts, grain and grass seeds of all kinds, as well as berries in season, and stow away quantities in little chambers off the main passages of their burrows, where they will be available later on. It is presumed that the chipmunk hibernates, however

there is no evidence to sustain such presumption. He may doze along, sleeping most of the time, but waking sufficiently every few hours, or even every day or so, to partake of refreshment. Some hibernating animals put on quantities of fat in the fall, both because of the warmth thus afforded and that they may have a reserve to draw on during the early spring days when food is not easily obtainable. Other species store away a moderate amount of food for use at the close of their period of hibernation. But the chipmunk works from sunrise to sunset, with an hour or two off during the middle of the day, and accumulates a large store; he does not become unduly fat in the fall, which facts, taken in connection with the well-known habits of his squirrel-cousin, the chickaree, would indicate more or less activity throughout the short winters of the Northwest.

The Black Bear

THE country is just alive with bear," said Ed Halberg excitedly as he returned to camp for breakfast, the first morning of the Klahhane club's stay at Mt. Olympus this past summer. "Miss Hopf and I," he continued, "have been out since 4:30 and we've seen five bear and three deer. Well, if there isn't another"—

And sure enough, the daddy of all the bear tribe was even then ambling slowly along beside some mountain alder a stone's throw away. I was going up to a rock, beneath which emerged a stream, to get ready for breakfast. Meanwhile the bear turned and came down to a berry patch beyond the next rock or boulder, fifty feet distant, when Ed caught sight of him again and came running up, camera in hand. Bruin heard him, and raised up on his haunches for a look, so astonished that it was quite some seconds before he realized it was his next move—a move that took him up the mountainside in surprisingly short order.

Mrs. Ulmer brought in a similar story later — out picking blueberries for pies when she heard a noise in the bushes a few feet away, and up rose

Photo by Welch

In the Queets Valley

a big black bear, also berry-filled and berry-stained. Asked what became of the bear, she said, "How in thunder do I know?"

Hugh Lutz said he didn't see why they should be so excited. It was a game country — doubtless bear were all around us — now if one should see a deer walking down a city street that would be a different matter. But we noticed he became just as enthusiastic as the rest of the folks when a bear was seen coming across Bear Pass, between the Queets and Goldie.

Some twenty of the party had gone up to the head of the north Hoh glacier to spend the afternoon and were returning, when his bearship walked out onto the ice. In a moment forty legs were flying like steam pistons in an effort to round up the bear and get his picture. He took refuge in a bunch of alpine trees on the crest of a small ridge, and Mr. Blanchard went around to chase him back toward the cameras. Pausing for breath behind a snowbank, Jim heard a shout and raised his head to look over the crest, to meet the bear, as it were, face to face.

"Woof," remarked the bear as he landed in a bunch of trees on a pinnacle of Mt. Barnes, waiting a fraction of a second for his shadow to coil up and connect with him, while Blanchard, well, Jim was taking crevasses sixteen to the jump — and the picture plainly shows the bear at the edge of the half-mile wide snowfield, without another living thing in sight.

Time was, when the black bear was one of our most common animals, coming down from the hills to the very edge of town during the blackberry season. Bear meat was regularly sold, and

the tiny cubs furnished the children endless amusement. They are still common, back in the mountains, being most often seen in the short open brush when the huckleberries and blue berries are ripe. So busy are they at such times, and so unsuspecting of danger until their nose receives a wireless warning, that one may, now and then, sit down in one end of the patch while Bruin eat his fill at the other.

Usually, however, as is the case with nearly all wild animals today, the bear learns of man's presence before his is even suspected, when he loses no time in putting a reasonable distance between himself and his white brother. It is very possible that, for every bear one actually sees, while out on a trip, twenty or thirty may have sidestepped into the brush or tall timber. Often a person will come upon one close enough to hear his snort and the breaking of brush, without catching a glimpse of him.

Although small as bears go, the Black Bear of the Olympics is large enough and black enough, one would think, to be classed as a fairly prominent object in the woods. Yet a half grown bear, belonging to our Superintendent of Schools, Chas. Briffett, was lost for over a week last summer in Civic Park, in the center of Port Angeles. At no time was he more than five hundred feet from either the high school, the court house, library, Evening News office, or several garages which extend along the block, the street being a principal thoroughfare of the city. At times as many as a hundred kids and dogs were chasing him through the bushes, but for the most part he kept strictly out of sight. Moreover, his disappearances in

the small park, and even when the gang was in full pursuit, would rival the fadeouts of the moving picture world.

Of all the animals of the mountains the bear is the most interesting, and would still be one of the most common, were it not that everyone carrying a gun has always considered him lawful prey. No hunting trip may be said to have been complete without the self-styled sportsman can brag of at least one bear to his credit. Why this should be so is beyond understanding. The meat is worthless in the summer months; the hide, never of any particular value as bear hides go, is then of even less account than the meat; and the glory to be obtained thru the killing of such a timid, inoffensive, interesting, and withal very much undersized animal (about 200 lbs. dressed) exists entirely in the distorted imagination ot the novice in the woods.

There may be a half dozen men in the camp; each man have hung up his deer; they may have had more grouse and trout than they could eat; they may have shot a cougar, or a cat or two; in short, have had all the sport they can ask for or are entitled to, and yet if word comes in that a bear has been seen across the way the entire pack will drop everything to go out and shoot him, only to let him lie and rot where he was killed — unless, perchance they hang him up in order to get pictoral evidence of their prowess.

In a way, the bear, like the snake, is a victim of superstition. Persons ordinarily sane, otherwise, will tell you they do not like to go out into the woods because they are afraid of snakes. You may tell them the only snakes we have in the

Olympics are the tiny grass snakes, graceful and beautiful, and absolutely harmless, yet you will know you are making no impression whatever. They have been taught from childhood to believe that the snake is the enemy of mankind, a dangerous, if not loathsome, reptile which should always be killed on sight, and in the depths of their ignorance of the world of nature they persist in taking real delight in working up a shivery sensation whenever they happen to run onto one.

It is easier to believe a lie that one has heard a thousand times than a fact that one has never heard before. Nine-tenths of our beliefs are a consequence of mere reiteration. If truth ultimately prevails over error, it is because wise men armed with evidence repeat themselves still more audaciously and unhesitatingly than foolish men armed with tradition. How amply this has been demonstrated in the treatment of disease, in the last fifty years. With the mass of the public it is not the evidence, but the repetition that counts.

Even in Sunday school, where the truth alone should prevail, we have been taught that the snake is a companion and representative of the devil himself; no mental picture of an inferno would be complete without it abounded in creeping and crawling things. One of the first Bible lessons the child gets has to do with bear coming out of the woods and eating up little children, who knew no better than to mock two very estimable old gentlemen, possessed, doubtless, with a superabundance of self-esteem. And does the child, told this story by the well-meaning but ignorant young lady who unfortunately has him in charge when he gets his first and most lasting impressions —

does the child get the lesson of respect to his elders? He does not. He gets the story of the bear, the story that has been handed down to us through the centuries in endless variations by parents, relatives and nurses who thus find an easy way of terrifying their little ones into being afraid to venture beyond the limits of the door-yard, or to cry at night because the big bear may hear them and come out to eat them up.

Even when the child becomes a man he clings to his superstitions, and of these the mountain lion that steals up on his victim at night, or which lies in wait to jump on him from rock or log in the day time, and the wounded bear that is always ready to charge and fight to the death, are two notable examples. The world will be a safer place, in the estimation of the average man, when both cougar and bear have been exterminated. A hunter who would freely use all the vituperative words at his command in condemnation of him who would go forth and shoot a doe or a fawn in the spring, will kill cub bear on sight and really believe he is doing a service to mankind.

I believe the time will come when we people of the Olympic peninsula will regard the bear as a greater asset, considered in connection with our scenic resources, than either the elk or the deer. A time when we will afford them protection, not as a game animal thru a portion of the year only, but absolutely, as a feature of our commonwealth which belongs to the people as a whole and not to the sportsman alone. When that time comes you will see bear as plentiful as in years gone by, and every little party of people returning from a fishing, hiking or camping trip will again be tell-

ing of the pleasure they had watching one or two of the animals flipping salmon out of the stream, walking along the old logs eating blackberries, gathering in great armfuls of huckleberry brush that they may the easier lick off the fruit, or digging out a family of mice from their burrows on the mountainside.

The black bear never attacks a human being; on the contrary, he has long ago learned that the rifle is man's natural corollary, that man is an animal spitting fire and lead, who must be avoided at all hazards. All stories to the contrary are untrue, the ravings of men who are instantly branded as liars by every real out-door man who chances to hear them.

Of late years sportsmen have adopted the policy of meeting all such yarns with the gentle art of ridicule — the relating of a series of "whoppers" that completely overshadow the efforts of the tyro with friend bear. Dall DeWees has one relating to the superstition of the mountain sheep jumping over cliffs and striking on their horns, using them as shock-absorbers, as it were: He starts with a description of a deep and narrow canyon on the Arkansas river, up which he was hunting one day when the striking of a few rocks near his feet caused him to look up to the brim directly overhead. There he saw a number of mountain sheep, "one of which presently dived over." A moment's pause, until someone wants to know what happened then. "Oh," Dall would reply, "he saw me and turned round and went back."

When the bear first comes out from hibernation in the spring, he depends mostly upon roots,

such as those of the skunk cabbage, or the starchy bulbs of the alpine lily or onion, both of which grow in dense fields on the mountain slopes. He tears up rotten logs, eats grubs and insects, and digs out meadow mice. The meadow mice, by the way, seem to have been specially created for use as bear food; they are much larger than the ordinary mouse, being about as long as a mole or chipmunk and round and fat. A family of meadow mice must make a very satisfying meal in itself. The roots of a wild pea vine, a hedysarum, are eaten with great relish; they taste much like green pea pods. Berries — bear, service, black, salmon, goose, huckle, blue and mountain ash — furnish abundant food and with these he eats a quantity of the succulent green leaves. Tender grass shoots always furnish an important article of diet. In the fall when the salmon force their way up as near the headwaters of the streams as the higher waterfalls will permit, the black bear feeds on them to such an extent that the flesh becomes more fish-like than the fish itself. They are very dextrous in catching these, lying in wait and scrooping them out with their paws; at the same time, inasmuch as the salmon dies after spawning and floats around in the shallow water belly up and alive for some hours, there is no limit to the food obtainable.

While bear do not kill game animals, undoubtedly they obtain many a meal from the carcasses of elk and deer left by cougar, which seldom eat more than a small portion of the meat.

The young are brought forth in hibernation in February, being at first practically naked, but the fur coat soon grows and they come out in April about two months old. Usually there are twc

cubs, though a young bear will have only one. The mother, already provided by nature and the abundance of food in the fall, with a two-inch thick slab of fat on either side, both as a protection against the cold and as a reserve food supply for the comparatively barren months of spring, picks out a hole under the roots of a tree, or similar location, which she enlarges sufficiently so it will afford just room enough to curl up in; in this she builds a bed of hemlock and cedar limbs, each of about the size of a lead pencil, taking in quite a bunch so as to make a warm nest for her young.

Headed for Safety

"Brer Rabbit"

N old blackened splintered stub, twenty feet in height, standing alongside the upward trail; a reddened spot in the fresh snow of early winter, with a few fluffs of brownish fur; signs of a brief struggle, strange foot-prints half visible — the story of another animal tragedy, lacking, possibly, only the short, laughing hunting-notes of the great-horned owl together with the piercing shriek of the terrified rabbit to make it complete in all details.

Or perhaps a rough-barked log, refuse by the roadside; along the square-cut end a little well-worn trail, the leaves packed down closely by the passing of many padded feet; a few scratches on the mossy log, freshly disturbed leaves, a drop or two of blood — and we know that bunny had left her nest or burrow and was on her way out to the open road to nibble the fresh grass and play with her neighbors in the sifted moonlight, when two shining slits appeared above and a handful of hooks reached down with a quick sweep. Her life had ended in one of those tragedies that soon or late come to all Nature's children.

Rabbits would seem to be particularly fragile —

loose-furred, thin-skinned, delicate — so that the slightest blow from paw or talon, or even the downward sweep of a screech owl's wing, sometimes recorded in the snow, kills them almost instantly. Their only protection lies in their coloration, which is of small value to a moving animal, and in their cunning and quickness.

Born naked and blind, in a fur-lined grassy nest, located in the dense jungle of berry vines and brush of valley and hillside swamp, the little fellows seem destined to live and grow only to furnish food for the long list of feathered and clawed animals. To meet this ever pressing demand, Nature has decreed that they shall be prolific to a degree, several litters of from two to six being born in a season.

Perfectly camouflaged when at rest among the dried leaves of a woodland road, the little fellows may occasionally be actually picked up and held in the hand, but when, after admiring their bright eyes, tiny ears, and stubby winking nose, one sets them down again, they scamper off as lively as any of the woodland folk. It is said that sometimes the little ones cry out in terror when caught, but I have always found them to be as tame as the domesticated rabbit. Occasionally I have had old rabbits, accustomed to the passing and repassing of man, allow me to approach within a few feet, even six or eight, they meanwhile continuing to nibble grass as unconcernedly as you please.

The western rabbit has a splendid flavor, as distinctive as the canvasback duck, is preferred by many to other kinds of game, and is usually the basis of the mountaineer's mulligan.

Perhaps no mammal is more widely distributed,

being found, in America, from Canada to Argentina; there are twelve distinct species. Naturally, they vary somewhat in minor characteristics, western species lacking the cottony white tail of the eastern, and living mainly above ground instead of in burrows as in the case in more open country.

The Mountain Chipmunk

(Eutamias caurinus)

JUST as there are alpine buttercups, alpine bluebells, and phlox, and spiarea, and foxgloves, daisies and waterleaf — tiny plants a half inch or an inch in height, yet bearing perfect blossoms, often as large, or larger, than those of the lowland species — so too, there is an alpine chipmunk, a slender little fellow not a great deal larger than a good-sized mouse, who lives along the crest of the mountains above timberline.

Unlike his cousin with whom we are so familiar, he is of modest, one almost might say a retiring disposition. A mere shadow as he flits across the field of vision from a bunch of plants where he was gathering his winter's store of seeds to the shelter of the long and dense prostrate branches of the alpine fir, he leaves one in doubt as to whether or not an animal or bird passed that way; perhaps after all it was a twitching of the eyelid, some trick of the vision, lacking even the substance of a shadow. In fact, it was some little time after I began climbing about among the rocks of the mountain crests before I really knew whether the little

Mountain Chipmunk

fellow was a form of weasel, a mouse, or some species of animal of which I had never before heard. And then, one day, the shadow flashed from a small bush where it had stopped and whisked away and under an old silvered log so that I had a second glance, sufficient to know that it was a chipmunk and that I did not need treatment for my eyes!

There are many of them, particularly about the small patches of bare ground between the rock pinnacles, but usually they scamper away to their burrows or hiding places at the first sign of danger and well in advance of the appearance of the slow-moving climber. Seemingly they are never still for a moment, and they must be active indeed if they are to store up from the tiny alpine plants a sufficient amount of seed to carry them through the seven months of winter.

Never but once have I had the pleasure of seeing a mountain chipmunk when he was reasonably quiet and unafraid, and doubtless in that instance — it being the latter part of August — they were young animals and had not learned how many enemies with which their race has to contend. It was at the foot of a long slope of sharp-edged broken rock on the south slope of Mt. Angeles, where a bunch of Klahhane club members had stopped for lunch beside a pocket of snow, something like thirty feet across. Two of the little fellows came down from some trees above, apparently to get a drink from a small pool at the lower edge of the snowfield. Nervousness personified, they dashed from rock to rock, never actually venturing out onto the snowfield, but skirting its edge, the while flirting their tails and uttering a chipping

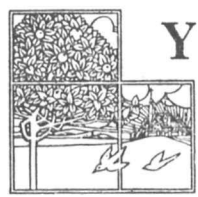
sound that was hardly audible a few feet distant. Occasionally one would stop in plain sight for a moment, possibly as long as four or five seconds and always at the top of a jagged piece of rock. If one were watching closely, he got a good view, but let the eye wander ever so briefly and it was with difficulty it picked him up again, so closely did he harmonize in color with the rock. This, too, I noticed: That while on the mountain crests these chipmunks are lighter in shade than their cousins of the lowlands, corresponding perfectly with the light soil and gravel, down on this slope of broken rock they were darker, almost as dark as the lowland species, due, doubtless, to the general reddish tinge of the rock, much of which was red hematite, or iron ore.

Since the above was written, a party of us, camped over night on the summit of Mt. Angeles, had the pleasure of making the acquaintance of a mountain chipmunk which was not nearly so timid. Evidently attracted by the tantalizing smell of unusual food, he would venture out quite close to the nearly extinguished campfire around which we were sitting, but always in a circuitous route, taking advantage of the shelter of logs and rocks, between which he would flit like a shadow. It was soon noticed that a dish of stewed peaches, placed on a large flat rock to cool, was the lodestone which had been gradually overcoming his inborn fear. In a few minutes he screwed up his courage to the point of actually reaching the dish and taking a taste, when he threw caution to the winds and sat on the spoon, eating his fill. The slightest movement and he would whisk away, only to return shortly. By standing quietly close alongside

an old stub at the edge of the rock we were able to get several pictures, the one herewith having been taken with a small vestpocket kodak.

The type specimen of our mountain chipmunk *(Eutamias caurinus)* was collected near timber line at the head of the Soleduck river, Clallam county.

The Skunk



YOU have heard of the young lady from the city who saw what she thought was a kitty, and said, "I'll give it a pat, but she didn't do that, and" — well, you may relate the rest of the story to suit yourself.

The Skunk is an animal possessing an absolute indifference to anything that runs, walks or crawls upon the earth, swims in the water, or flies in the air. Unlike the lordly lion, who himself has enemies to be avoided, the Skunk is lord of all he surveys; there is none to successfully dispute his right. None? Well, none save the North American Indian, who will drop any old kind of work at any time to catch a Skunk, build a fire and roast him right then and there.

The Skunk was one of my first animal studies — but I love him none the more for all of that. Discovering a freshly dug hole in a clover field, and having a desire to obtain a family of baby woodchucks, I ran home for "father's spade." I have since often read that young Skunks make interesting pets, far more playful and intelligent than kittens, but some way I've never cared much for Skunks, nohow.

Peculiar in shape, with large rump and hind legs and feathery, arched tail, and small head carried near the ground, the Skunk seems to have been built wrong end to — but I hasten to assure the critical that such is not the case. Other animals may be all horns, claws, teeth, or fangs anteriorally, but they are built for fighting head on; others may have hind legs and tail of exceptional development, like the hare and the kangaroo mouse, and thus be able to make a swift getaway — but the Skunk neither fights nor runs. In fact, he moves at all times with the most exasperating deliberation, and he who meets him, whether riding a cayuse or driving a Packard, awaits his lordship's pleasure or looks up a side road.

Skunks prefer a moist meadow alongside a stream for their home, where is always abundance of food, such as mice, frogs, crayfish, snakes, grasshoppers and other insects, worms, and berries, with an occasional nest of the ground birds by way of dessert. They may dig a burrow, but the chances are they will appropriate one belonging to a mountain beaver or rabbit, either of whom are perfectly willing to vacate. Upon occasion they may preempt a hollow log or crevice running back between the rocks, wherein to raise their family of four to ten young. Along the strait and coast, many Skunk families are raised on the beach, and here where the table is nightly spread with delicacies they wax fat and sassy.

Though Skunks destroy many game and insect-eating birds, they are protected by law in some states because of the belief that their good offices more than offset the damage done. However, of late years such laws have been of little force or

effect, for the one-time humble and despised Skunk has, with the growing scarcity of furs, become a valued animal. No longer is the Skunk known by a phoney name; no longer is he classed with the rabbit, muskrat, dog or cat. Prime skins, with dense, jet black fur, are in great demand — and one can spot a trapper's home a mile away.

A fair-sized Skunk will weigh from six to ten pounds (the large ones go to thirty-five pounds), is twenty-two inches in length with tail, including hair, of sixteen inches. They have a lengthened nose, round ears and black eyes; the feet are five-toed and naked, making a powerful tool for digging. In addition to their dense fur, they have, bear-like, a layer of white fat underneath the skin of the back. Skunk oil, obtained from this fat, is free from odor and was once held in great esteem as a remedy for colds and even tuberculosis and kept in stock by all the village stores.

The odor comes from two glands, the fluid being light yellow in color, exceedingly pungent, and discharged as a puff of steam to a distance of ten or twelve feet.

The Skunk is conspicuous — and he don't care who knows it. He varies greatly in the manner of striping, from the black skunk, whose white is limited to a small spot on the forehead, to those which are entirely white, sports similar to white muskrats, squirrels, white blackbirds, etc. The black skunk is not found west of the Mississippi. Another species, also confined to the eastern portion of the country, is known as the short-striped, the white extending from the neck only to the center of the body. In the south there is a broad striped variety, the upper part of the body often

Photo by Welch
Mt. Olympus from Soleduck-Hoh Divide

being nearly all white, and in the southeast lives the one-striped, a species having a single broad stripe and an all white tail.

But the common kind, known as the narrow striped, is found throughout the United States and Canada, the white of crown and shoulders dividing into two narrow stripes which continue on to the tip of the tail; also, they have a narrow stripe down the forehead. As the white portions are cut from the skin and are only of use to hat manufacturers and for similar work, it follows that those having the least or no white are most valuable.

Our most common species of Skunk happens to be a very large variety, and it also happens that Port Angeles had the honor of furnishing the type specimen, whereof the scientific sharps back in Washington, D. C., named it the Mephitis occidentalis spissigrada. Whether or not the last section of his three-part name has any bearing on Ediz Hook spit, you will have to determine yourself by reference to that well-known work by another member of our family, commonly known as the "Unabridged." Suffice it to say the type specimen was captured by a superman, i. e., a strong character, at the lagoon in the base of the aforesaid spit.

Many are the stories of animal and bird life published in the magazines of the day. In some, the authors have been scrupulously truthful; others contain certain elements of truth, and others — but all are interesting, and it were best you should judge for yourself:

"The Skunk is a clever food conserver," according to one writer, who tells of "a larder alongside the nursery, wherein are always to be found from

ten to fifty large frogs and toads, all alive, but so dexterously bitten through the brain as to make them incapable of escaping — stored away so that his babes may always have fresh food." And it may be the truth at that. If the reader should ever investigate this interesting point in natural history I would take it as a favor if he — not immediately, you understand, but some little time thereafter — would let me know the result.

Another writer, in Popular Mechanics, tells of a whole family of Skunks being attracted onto the lawn in front of a Michigan bungalow by the playing records of bird songs on the phonograph — the inference being that the animals were looking for birds' eggs. He adds that the concerts were discontinued.

And have you read Elbert Hubbard's "Some Chums of Mine," wherein he tells of a neighbor who one day brought a mother Skunk and six little black-and-white Skunkeens and passed them — the Skunkeens, not the mother — around for inspection? Hubbard said they were beautiful, blinking, fluffy, innocent little propositions, guiltless of any thought that their ancestors had violated the Sherman Act through deeds in restraint of trade. The farmer had been employed in a department store, before he becam inflated by a booklet showing how hens lay eggs and hatch them in geometrical progression, and had quit his job, moved to East Aurora and built five long poultry houses with board floors. "And behold, the Skunks came, and they worked time and a third. Behold again, they increased in a geometrical way, even if the chickens didn't. Soon there were no chickens. Then the man, being practi-

Bear. Bobcat and Coon

cal, said, 'Oh, shucks, chickens be damned — me for the skunks!' Few men, indeed, there be who can cash in on their mistakes and make money out of their blunders. This is genius!"

Should the reader desire to start a Skunk ranch, he will have no difficulty in learning of a number of fine poultry layouts, at present and for some time since in complete and entire disuse, all within the confines of the Olympic peninsula!

Kangaroo Mice

HIGH up in the alpine parks, swamp areas at the headwaters of all the smaller streams of the Olympics, where the grass grows knee-high and is filled with an abundance of flowering plants, lives that oddity of the rodent clan, the Kangaroo or Jumping Mouse, a tiny animal of dark reddish-brown color, white underneath, having extraordinarily developed hind legs and a long slender tail, measuring nearly five of the total length of eight inches.

Such an abundance of food, affording seeds, roots and hay for winter use, as well as green forage during the summer months, makes of these parks a real paradise for the smaller mammals, and here they are often to be found living in colonies of considerable size. The Kangaroo Mouse makes its summer home in dense tussocks of grass, or within the shelter of small brush piles, the tops of fallen trees, and one can seldom walk more than a few feet around the edge of the lower and swampy portion of such a park without having one or two of the little animals bounding along in front. The height to which they will jump, in order to clear the swamp grass, and the distance — from

eight to ten feet — sometimes covered in a single leap, are certainly remarkable. One's first thought is of catching them, butterfly fashion, but one or two efforts are usually sufficient to satisfactorily demonstrate that a mouse is always a mouse and that the place where mousie last lit is the last place in the world to look for him.

Unlike the white-footed mice, the kangaroo mice hibernate during the winter months, when the parks and grass slopes extending on up to the tops of the ridges are under snow. Their winter burrows are about three feet in depth and comprise food storage as well as sleeping chambers.

Jumping mice are found from Alaska to the Atlantic coast, being particularly abundant in the northeastern states. With us they appear to be found only at higher elevations, where the climatic conditions are not so very different from those prevailing in interior Alaska.

The type specimen of *Kapus trimotaus trinotatus* was collected at Seig's ranch in the Elwha valley; this variety is supposed to be limited to the Coast region of Washington and British Columbia.

The Flying Squirrel

THE Flying Squirrels, found in Asia, Europe and northern North America, are among the smallest and most beautiful — even exquisite — of animals. Light brownish-gray above and purest white beneath, having a velvety fur, a round head set with large black eyes and round ears, folds of skin like a lace ruffle down the side uniting the tiny paws, and a flat plush-like tail, they are most charming, and because of their trustfulness and cunning ways are highly valued as pets. Being nocturnal, they are perfectly at home in one's coat pocket by day and if taken out will scamper back immediately the hand be opened. At twilight one so carried will venture forth and perch on one's shoulder or head, a vantage point from which to leap to another member of the family, or to some article of furniture in the room. If startled, they are back in their pocket nesting place in an instant, or, that not being readily available, they will dodge up a sleeve or under the back of the coat.

My first flying squirrels were found by noticing a tiny bunch of white fur on the side of a slender stump, about five feet high and hardly as thick as a fence post. Investigation revealed a small hole,

a nest lined with white fur from the mother, and two tiny babies. But generally they nest in old woodpecker holes or other cavities in the highest trees of the forest. They are easily caught, by means of a box trap baited with corn or apple and set up among the limbs. Their curiosity is also frequently the means of their death, as many are caught in steel traps set for other and larger animals.

Here in the Northwest, where the underbrush, or second growth trees, average about 125 feet in height, the flying squirrel, a much larger variety than the eastern species, is seldom seen. Nor are they to be found living under the roofs of houses, in barns, or bird houses, often favorite nesting places in the East. Being densely furred against the cold, they are active throughout the winter months.

Nuts of all kinds, fruits, insects, birds' eggs, grain and corn, comprise their bill of fare. They have several notes or calls, and one series that may be said to be a real song.

Inasmuch as the Flying squirrel sails or "monoplanes" through the air from the top of one tree to the base of another, it might more appropriately be named the "Sailing" squirrel. Their spread of skin and tail gives enough resistance to enable them to cover thirty or forty feet, horizontally, in one flight; just before striking the tree they make a sharp upward turn enabling them to strike lightly, when they immediately scamper upwards to again launch themselves in flight.

A pair kept in my home for some little time had a regular trail about the room, sailing from the top of a bookcase to a bureau, thence to a window

ledge, up the curtains and so on around, making the identical circuit over and over again, except, perhaps, when a member of the family would hold out a hand, when they would sail down to his knee and run up onto his shoulder. Doubtless they have similar habits in their natural environment, sailing from tree to tree and back around to their homes, taking the same route each time.

One of my pet squirrels losing his life by becoming caught in sticky flypaper, the other was confined to the second floor at night. Or rather such was the intention, but in some mysterious way he always managed to elude us and spend the night below. Many were the accusations of forgetting to shut the door, or of seeing that he was really upstairs before retiring, but the mystery was finally solved when a member of the family saw him squeeze through the tiny holes of a radiator in the ceiling and sail down plump onto the kitchen stove, from whence he bounded and in a moment was perched safely on a picture frame.

Muskrat

The Muskrat

MY acquaintance with the Muskrat dates back to the year 1891, during the spring of which I was engaged in the study of migratory birds, on the Dakota prairies. It was said at that time that there were no Muskrats left in the country, and although we camped and hunted over many miles of prairie, along streams and about lakes and ponds, not a single rat did we see.

Several successive years' drouth had resulted in the reversion of the wheat lands to the bunch grass of the old buffalo and Indian days. The farmers, their land mortgaged to eastern firms, had left the country one by one, as they reached the limit of their resources. Coal was the only fuel, and there was no money. Posts and lumber of corral, shed and house had been burned during the blizzards of winter, until not a vestige remained. During a ride of twenty-five miles, with an entirely unobstructed view of at least ten miles on either side, only one house was to be seen. Its owner had hauled water seven miles during the last weeks of his residence and had burned for fuel everything save the main part of the house in which he had lived.

A prairie fire had wiped out half the town; my friend was the only remaining merchant; together we watched a cyclone clean up the next village, covering the prairie for miles with splinters and wreckage.

Alkali dust blew in clouds from gray pits that once had been shallow lakes. We visited an alleged power site where it had been proposed to turn the water of a large lake into the bed of an adjacent, lower and smaller one, thereby obtaining power for a grist mill. Salt marsh and desert plants were growing even in the center of the nine miles of alkali crust. The curse of God seemed to be upon the land, with apparently small chance of its ever being of value again.

South of the town, where the edge of the artesian well belt made it possible to get water for stock, there were a few farms, or rather a few people were living alongside the tiny pools thus maintained, doubtless hoping that moisture and prosperity would return to the country at the end of the so-called seven-year cycle. These ponds and connecting marshes had become the home of millions of waterfowl, waders and land birds, all the inhabitants of the prairies having been crowded into a narrow zone of moisture.

Time was when thousands of lakes and marshes had afforded ideal homes for the Muskrat. Here he found the long reeds and grass necessary for his dome-shaped house, and abundant herbage with which to stock his larder against the snows of winter. Here he had dug his tunnel from the water's edge, coming up underneath his home — several of them, in fact, that he might have as many avenues of escape.

Then came a day when, in answer to the call of the Great Spirit of the Muskrat world, every individual joined in migration. They crossed the prairies in swarms; they filled the streets of the villages and passed on, joined at every pool and marsh by all of their kind there living. How they came to start, how they knew which direction to take, how they were able to tell each other "Come on, boys," how they knew when they had arrived at their destination, or whether any of them ever arrived, preyed on as they were by beasts and birds, is not for man to know. Suffice it to say that even the rats had left the country.

Since that time the rains have come again, the prairies have blossomed, railroads have been built, real estate men have made fortunes selling land mortgaged for a mere pittance in the old days — and the Muskrat has returned to his own.

Many animals, when overcrowded and food becomes scarce, migrate as did the Muskrats on this occasion. The migrations of the lemmings of Europe were recorded in the earliest histories. Such migrations included millions of the mouse-like animals, closely related to the Muskrat, which persisted in their course, devastating the country, swimming rivers and lakes until finally the few that were left, so the reports state, plunged into the sea and swam from sight. Similar migrations of the little animals have taken place in recent years in Alaska.

But to return to the Muskrat, it is a far cry from the heavily forested and well- watered Olympics to the prairies of Dakota, and the uncomplimentary remarks that were made when upon occasion one would step into a sedge-filled

burrow to plunge headlong in the marsh water, need not be repeated here.

Though the Muskrat prefers the prairie country, he may be found in fair numbers along the more level outer fringe of the Olympic peninsula. In the valleys of the Dungeness and Elwha rivers he is not uncommon, but it is in the western part of the peninsula, where the mountain streams become wider and more shallow, flowing lazily along, that he is most plentiful. Here, instead of houses of reeds, they make their nests at the end of burrows extending upwards in river banks. Other chambers are excavated for use as storerooms, being filled with small roots and bark.

Our species of Muskrat, *Fiber zebethicus osoyoosensis,* is a large-sized, dark variety, commonly known as the Rocky Mountain Muskrat. It is found in the Puget Sound region and Rocky Mountains, from southern British Columbia, Washington, Idaho and western Montana, south in the mountains to northern New Mexico.

While the Muskrat is a rodent, his resemblance to the rat lies chiefly in the scaliness of the tail, which instead of being round is vertically flattened, or rather double-wedge shaped. The animals are chunky, about twenty-one inches in total length, weigh between two and three pounds, are heavily furred, have small eyes, small round ears and short legs, the hind feet being webbed. The young, like the mice, are naked and blind at birth, and, as in the case of their relatives the mice, three or more litters are born each season.

Thus it is, that in spite of the ten to fifteen million skins marketed annually (and the Muskrat is found only in North America), they manage to

Photo by Everett

Everett's Boulder Creek Herd

hold their own fairly well. Not only has the pelt, known as river mink, French seal or Hudson seal, become valuable in recent years of fur scarcity, but the flesh is now sold in the East as marsh rabbit, the latter demand being filled by means of muskrat farms.

The fur is really of very fine quality, being comparatively inexpensive only because of the wide distribution and abundance of the animals. It is rich and soft, very similar to though not quite as fine as beaver, and is generally dyed a rich brown-black. Occasionally albinos are found.

The Muskrat is not cunning and wary as are the other fur bearers, is not afraid of man, and is ready to fight at the drop of the hat if intercepted away from home. When trapped he twists his foot off or amputates it with seeming indifference, so that bushels of paws are caught each year without the fur. This is principally due to the use of traps having round edges and low jaws, such traps being cheaper than those of proper design.

It is said that the muskrat breathes under ice-covered water by expelling the air from his lungs, which rests underneath the ice in the form of bubbles and quickly assumes oxygen and is purified, when the animal inhales it and swims away; while doing this he holds his mouth and nose very close to the ice and remains motionless. If frightened at such times, the Muskrat, having darted away from his supply of air, immediately drowns and may then be secured by chopping a hole in the ice, as the body floats close to the surface. A story the truth of which, insofar as the Muskrat of the Olympics is concerned, it would be very difficult to either prove or disprove.

The Fisher

ANOTHER member of the weasel family, in appearance very much like a large martin, is the Fisher, now one of the rarest animals of North America. Only once in recent years, insofar as I am aware, has one of these splendid animals been taken in this vicinity, that one being trapped by his namesake, Bobbie Fisher of Mt. Angeles. It was dark brown in color, rather inclined to grayish underneath, and the tail, bushy and almost black, was certainly very beautiful.

It is said that while the Fisher lives from Maine to the Pacific, only three to five thousand skins are now taken yearly.

In habit it is much like the martin, but even more adept in the tree tops, being able to catch not only squirrels, but martins themselves; while chasing its prey it takes long leaps from tree to tree. They live on rabbits, squirrels, ducks, and ground birds, snakes, frogs and fish, which they capture with great skill, crouched on the bank or on a log until the fish comes within reach and diving after them. In the eastern forests the porcupine is a principal item on the menu, many of the

Fishers caught having quills in their paws. They are a great nuisance to trappers, following the lines and eating such animals as may be in the traps.

Particularly is the Fisher known as an aggressive fighter, and this is given as one of the reasons for his growing scarcity. Afraid of nothing, he runs risks that often unnecessarily terminate his life. The one caught by Bobbie Fisher, though held by trap and clog, climbed upon a log and made every effort to get at his captor, growling meanwhile like a maddened dog.

Three to five young are born and the mother watches over them with the greatest care, particularly to keep them away from the male Fishers, which would devour them as quickly as any other kind of animals.

The Civet Cat

THE Civet Cat, little spotted skunk, or "spilogale," as the scientist would have it, is one of our most common mammals, especially along the beach and the larger lakes and streams.

Much smaller than the other skunks, being only four or five inches high at the shoulders, about two feet in length, including the tail, and weighing not over four pounds, they are quite cat-like. A description of the coloring of the Civet Cat is more than difficult as out of five hundred skins, so the furriers say, no two will be found alike. There are white markings on the head, an dtwo narrow stripes on either side, these running to the center of the body; back of these are spots and other stripes that might be called transverse crescents. The tail may be black or all white, but usually it is black with a white tip. As the white fur is dyed with difficulty, the skin is of no great value, the fur being used by hatters.

The Civet Cat bears a particularly hard reputation in the western states, being known as the hydrophobia skunk. It is said to be particularly subject to the rabies and many are the instances related of its biting sleeping men and children on

face and hands, sometimes with fatal results. No such cases have been reported here, although those who sleep out in the open frequently see the little fellows in the early morning.

They make their homes in logs and stumps, which are to be found on every hand, or in the crevices in jutting ledges of rock near the water. Frequently, also, they preempt an abandoned cabin, living in burrows underneath the floor, doubtless those of the woodrat, which, together with mice, insects, young birds and eggs, and crustaceans, make up their menu.

Our species, of which the type specimen came from Lake Sutherland, is named *Spilogale phenax olympica;* the range limited to the Olympic peninsula and shores of Puget Sound.

The Bats

POSSIBLY no animal, at least among those about our homes, whether we live in town or country, is more in evidence than the Common Bat. Yet comparatively few people ever have an opportunity to examine one of the winged animals closely, let alone making its intimate acquaintance.

Few, indeed, are they who have seen the bat emerge from its hiding place in the dusk of evening, or return thereto at whatever hour it does return. How are the bats able to see tiny insects when flying at such speed in the dark? How do they know their mates, when the air is filled with bats, crossing and criscrossing each other in their rapid, twisting flight? Why do they have hooks on their wings, when we read they sleep hanging head downward and folded up like a closed accordeon? How do they walk with only two feeble feet? And who ever saw a wee baby bat? Or a bat's nest? And how are they able to find their children when they return to their crowded homes? And where do they live in winter?

Of the 450 species of bats, including the leaf-nosed, flying foxes, vampires, etc., some two hun-

Monarch of All He Surveys

dred are included in the "Common" bat family. These are found in all parts of the world. While not including the more fantastic forms, they vary greatly in size, coloration, habit and habitat. For instance, there is the Red Bat, whose fur is of a deep orange-red, and whose spread, from tip to tip of wings, is something like twelve inches. And then there is the Hoary Bat, even larger in size, and far more rarely seen.

The Red Bat, common in the east, has always possessed an especial interest for me, as it was during one of my first excursions into the woods, when crosing the fields to fish with a bent pin for minnows in a small stream, that I picked a Red Bat off a branch of the hazelbrush, where it was hanging head downward in conventional fashion, for all the world like a ripe plum. Such viciousness one would never expect in so tiny an animal, as biting and squeaking it struggled vainly for release. After examining him closely I let him go and he flew away as freely as though the brightest of sunshine and the deepest of shadow were all one and the same to him.

Two species have been recorded from the Olympic peninsula: *Myotis yumanensis saturatus,* of a dark yellowish-brown color, Lake Cushman and Neah Bay; and *Myotis lucifugus longicrus,* the Little Brown Bat, from Cape Flattery and Port Townsend.

"Blind as a bat" is a splendid example of those old time sayings that are absolutely without foundation of fact. Although their eyes are small, resembling little black beads, their eyesight is exceedingly good, even in the bright light of day.

The wings of the bat are formed by the exten-

sion of the finger bones, these, together with the legs and tail, being covered with and supporting a rubber-like, hairless skin, ideal for purposes of flight. The thumb remains short and terminates in a hooked claw, taking the place of the thumb nail, and serving as a sort of hand by which they pull themselves along on the ground or other surface. Their walking is really a succession of tumbles; a wing is thrust forward and the hook engaged with any roughness in the surface, when the body is slightly raised, the leg advanced and the animal throws itself forward, to again advance its hooked wing, on the other side.

Their teeth are well developed, both canine and side teeth, the latter having sharp points that they may the more readily crush the beetles, flying ants, and other insects. Each species has its favorite hunting grounds, some preferring the city's streets and shrubbery, others skim the lakes or stagnant water, while others hunt over orchards and still others above the forests.

Bats bring forth from one to four young, the number depending chiefly upon the species. No nests are necessary, as the young are carried clinging to the mother until they attain too great a weight. The Red and Hoary Bats are mostly solitary in habit, sleeping by day in groves, or more frequently in heavy timber in the case of the latter which hunts mostly above the roof of the forest; here they hang head downward, their feet grasping a tiny twig or leaf stem.

Some species live in caves or crevices in the rocks, some in holes in trees, or lacking these, in chimneys or cornices of old buildings. In Montana, Dr. W. T. Hornaday found a colony "in-

habiting a cave that a subterranean stream had washed underneath the prairie."

In the Mammoth cave, and many other similar places in the warmer portion of the "temperate zone," the bats hibernate, or at least some species do, for very little is really known concerning the habits of the bat family. Further north, where the winters are more severe, they migrate as do the birds, or at least it has been proven that some species migrate.

Concerning their hibernation there seems to be much conflicting testimony. One writer claims that "animation is so completely suspended that no test yet applied has induced it to show the least sign of life. Torpid bats have been enclosed by the hour in air-tight glass jars and not a particle of the oxygen has been exhausted, showing that the bats had not breathed." Another writer, Dr. C. H. Eigenmann, says that "if disturbed a few respiratory movements may be seen and they may utter a few squeaks. If knocked from the roof some flap about while others fly away." And one writer has the nerve to tell us that "when they are clustering for hibernation one of the number hangs itself up by its hooks, head downward, and the others cling to it. It is on record that sixty bats have been found in one cluster, the entire weight of the lot being sustained by the one bat clinging with its hooks to whatever it had fastened them to at the start — a weight of at least ten pounds."

In San Antonio, Texas, Dr. Charles A. Campbell has erected several bat roosts in order that the little animals might be encouraged to make that city their home in increased numbers and

thus combat the malarial mosquito. These roosts somewhat resemble a square water tank, being supported by four posts, the whole structure about thirty feet in height. Some claim that by this means mosquitoes have been eliminated from large areas of land, while others assert the roosts to be a flat failure.

The bat has a special sense, a strange power, which enables him to thread his way through the boughs of trees or other obstructions with the greatest ease, but then, taken altogether, the bat is the most curious animal in the world. Even with their eyes put out they avoid strings suspended or stretched in a room, the faculty being due, it is believed, to the nervous system of the wings which tells them when they are nearing an object even though they are flying at full speed.

Courtesy "Seattle Mountaineer"

An Alpine Park---The "Low Divide"

Mustela Streatori

IMAGINE, if you will, a cougar-like animal twelve feet in length, or height, as he stands erect upon hind legs only; picture him with a slender body, no thicker than a man's; beady black eyes in a bullet-shaped head which is supported by a long, sinuous neck, waving, cobra-like, ready to strike. So quick in his shadowy movements that the eye can hardly follow as he darts from side to side, or again to the rear; equally at home and equally agile in rock slides, in timber, brush or logs, or among the limbs of trees; bloodthirsty to a degree unknown in any others of the carnivore, hunting in the broad glare of midday sun or in night's deepest shadows solely for the pleasure of the chase; absolutely unafraid, tackling animals many times his size (were there such on this planet), killing, killing, always killing, and for the sheer love of the game.

Have you a mental picture of that twelve-foot cougar? Can you see the ferocity in those eyes, the quickness of movement, the play of muscle, the absolute lack of fear?

Then multiply him by six or eight. Spread them

out fan-shaped among the trees, or between the rocks, or in the long grass — a band of animal apaches, knowing neither fear, nor mercy, nor rest.

Can you see them coming on, in front, at the side, and now in the rear, hunting you down with the certainty of fate?

If so, then for the moment you have, in imagination, occupied the position the chipmunk, the quail, the baby grouse, the rabbit, occupies in reality whenever a band of weasels ranges through the woods. Can you imagine nightmare more terrible? Can you wonder that these little animals — hares, rabbits, squirrels, mountain beaver, partridge and quail, as well as all the smaller animals and birds, are actually too paralyzed to fight, too frightened to run?

Though weasels are fairly prolific, giving birth to from four to ten annually, yet they may be regarded as one of the more rare animals of the United States. Doubtless they have enemies, such as hawks and owls, that hold them in check, despite their protective coloration, their quickness of movement and ferocity of nature. They enjoy a game of tag as much as do any of the small animals and have often been seen romping in open places on warm, sunny afternoons, where they might easily be picked up by falcon or hawk.

The average person, however, probably catches a glimpse of a weasel on not more than a half dozen occasions in the course of a lifetime, being less familiar with its summer clothes of brown and golden-yellow, than with its commercial dress of winter white. The ermine or stoat of Europe

and Asia, which has furnished the wraps of royalty, is a full brother to the northern species.

Many weasels are trapped for their fur in northern Canada and Alaska, where the white coat is donned with the return of winter, but in the Olympics, where the snow comes late and is of comparatively short duration, the change is only partial, or entirely wanting. The black-tipped tail is retained summer and winter, and in the summer pelage they have obscure white markings about the face.

An average specimen of this species weighs about three-fourths of a pound, and will measure sixteen inches inclusive of the tail; the diameter of the body is about one and three-fourths inches.

The Mink

DOUBTLESS no fur-bearing animal ever had a home more in accord with its preferences and requirements than has the Mink in the heavily forested and well-watered region a sthe base of the Olympic mountains.

A member of the weasel family, long and slender, it travels with surprising agility among the rocks, logs and brush of the river banks in search of its prey, which includes all the smaller mammals and birds. Ducks, grouse, quail, mountain beaver, muskrats, rabbits, squirrels and chipmunks, woodrats, mice, together with trout, frogs and red devils, gleaned from the water where it is perfectly at home as on land, form the principal part of its bill of fare. To these may be added such tidbits as birds' eggs and young girds in season, insects and snails, together with crustaceans when the particular individual happens to make his home along the waterfront. Or, again, if living near farm houses and opportunity affords, it takes great pleasure in cleaning out the henhouses. Like the weasels, it kills for the pure joy of the chase,

the body has but little greater thickness than a man's wrist, they can squeeze through a two-inch hole. At the same time, being from twenty to twenty-six inches in length, including the tail, and travelling along on a lope, with arched back, the animal appears to be much larger. A family of mink near a small prairie lake will live almost entirely off the water and shore birds, both falling an easy prey to the eel-like hunter.

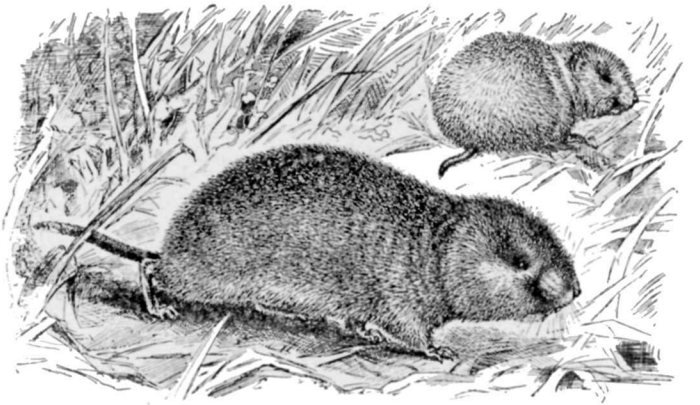
Though not exclusively nocturnal, most of their hunting being done in the early hours of the morning, they are seldom seen by man, except when caught in traps for their fur, which has become one of the most valued of the smaller animals, being dark brown with a blackish-tipped fuzzy tail. In the East, traps are baited with birds, chicken heads, and muskrat heads when obtainable, or if these are not available, with meat of any kind. There are almost as many ways of arranging traps and bait as there are different localities, but all trappers make a practice of using musk extracted from mink, muskrats or other animals when obtainable. Here in the Olympics, where game is plentiful, they are more fastidious and do not readily take bait.

The females make a cosy nest of leaves and grass, lined with feathers, usually situated near the water in an old burrow or stump cavity. They bring forth from six to eight, ten and even twelve, at a litter, which accounts in part for their maintaining their own so well in the face of continued warfare. Seldom are full grown individuals found in proximity on the streams; doubtless, like so many other mammals and birds, each has its hunting ground to which it asserts its rights against all comers.

The Meadow Mouse

THE Field mice, or voles, as they are known in England, are, in their many varieties, the most widely distributed and numerous of the Muridae, being found entirely around the world in the north temperate zone, and even in the remote islands of Behring sea. Having more the shape of a mole than of the ordinary house mouse, being fat, blunt-ended, dark-colored and silky-furred, with inconspicuous eyes and ears and a rather short tail, they are really cunning little fellows.

But owing to their vast numbers, their rapid increase (each female giving birth to from forty to sixty in a single season), and a decided preference for meadows, orchards and grain fields, they are known everywhere as the farmer's greatest pest, and many a predatory animal, from crows, owls and hawks, to weasels, foxes and snakes, are spared and even protected in order to preserve Nature's balance. In fact, it may be said that the Meadow mouse has one and only one mission on earth — the provisioning of the greater part of the tribes of talon and claw.



Meadow Mouse

For their protection Mother Nature has provided them with countless acres of prairie and swamp land, in the dense grass of which they may make their runways and of which they may fashion their ball-like nests; moreover, she has made them unusually vigilant and active, that they may scamper out of sight in a most bewildering fashion when danger threatens.

As the field mice do not hibernate, their winter homes consist of well-lined nesting chambers at the end of burrows, in sheltered places where possible, such as underneath logs or the roots of trees, and they obtain their food by maintaining their roadways beneath the snow, being thus enabled to get at the grass and roots as well as bark of bushes and small trees when such are available.

Of the seventy or more species and varieties in North America, we have at least three: The Meadow Mouse of the low lands, *Microtus townsendi,* found in the low country west of the Cascades, dark brownish in color, about eight and a half inches in length, two and a half of which is taken up by the tail; *Microtus macrurus,* about the same size but lighter in color, the type locality of which is given as "Lake Cushman," in the Olympics; and *Microtus morosus,* the type specimen coming from Boulder Lake, Olympic mountains. This last would appear to be a true alpine variety, being only five and a half inches in length, including the tail. Doubtless there are other varieties, but until a biological survey is made of the Olympic country — which is to be undertaken this next summer or the year following — but little will be known concerning the smaller denizens of forest and mountain ridge.

The Red-backed Mouse

ANOTHER variety, closely allied to the field mouse, is the Red-backed. These are readily distinguishable from other species by the chestnut-brown coloration of the upper parts, a feature noticeable in a number of Northwestern mammals and birds, such, for instance, as the chickadee and bluebird.

Of these we have two species, *Evotomys occidentalis,* whose habitat is limited to the coast and sound region of Washington and British Columbia, and the *nivarius,* which is at home on the mountain tops, the type specimen having been collected on Mt. Ellinor of the Hood Canal range of the Olympics.

Unlike the meadow mouse, the red-backed prefers the edge of timber, burned-over lands, and rocky ridges, for its home. As they are not especially nocturnal, they may be seen scampering around on the mountain, just above grass line, where they are amply protected by masses of rock, old logs and uprooted trees. Though quick as a flash when startled, they are fairly confiding when their human visitor sits quietly on log or

rock for a rest, and may be observed more easily than the meadow mice in the alpine parks between the rock ridges.

Grass and seeds form their chief food and while fond of grain or any kind of breakfast food that may be scattered about camp, they are not troublesome and do not pry into the commissary like their cousins, the white-footed mice.

The interest the mountaineer takes in the various small animals of the alpine world has been very happily expressed by Prof. E. S. Meany of the U. of W. in "Rocks in the Hills":

"Have you watched the wee folk of the boulder,
As they scamper to rock-sheltered home;
Have you thought that perhaps the Creator
Hung high in Heaven's blue dome
A star over each little household?
Oh, then may the hills be your home."

The Least Weasel

DIRECT evidence of the incessant warfare made upon the timid dwellers of forest and grassy slope by the hunting creatures of the wild is gained but seldom, and then by chance. In a day's tramp through the woods one may find a handful of grouse feathers scattered over the trail with perhaps one impression of a bobcat's paw close by. On some mossgrown boulder along the stream may lie a few bones of rabbit or squirrel; a hawk may even then be soaring in slow circles against the wintry sky, but of the actual tragedies among the woodland folk one can only surmise.

But when snow spreads a clean sheet over road and trail a line or two in the story of the timber may be read from the tracks of wild creatures. Down the trail threading the young fir came a cottontail rabbit last night, loping easily in full-fed contentment toward its home in the tangled brush. See where he swerved aside in sudden alarm from this clump of withered bracken! The pattern of the broad snowshoe tracks shows his first great bound of terror and the flying leaps

that followed. Close behind, running low to the earth, came a savage little weasel, foiled in his first attempt but tenacious as the wolf, hoping that numbing fear will aid him in the capture of his prey. One backward glance into those beady, glittering eyes, and the rabbit, in a trance of sheer terror, falls a helpless victim. But here are no signs of a killing. Brer Rabbit relied for safety on his powerful leg muscles and right well did they serve him in his race for life. His hind paws have pressed through the snow at each mighty thrust; even in the cold light of day the bunched tracks are eloquent of desperate speed. For several yards down the narrow path the weasel's trail is plain, but here, just as the escaping rabbit bounded out onto the open road, his pursuer gave up the chase and swerved into a fringe of ferns, thoroughly disgusted, no doubt, with the turn of events.

As further evidencing the readiness with which the little weasel will attack a rabbit, one dodged out from between the rocks underneath the porch at Klahhane Lodge, Mt. Angeles, to tackle a freshly killed rabbit just thrown down by hunters, who still stood by. A movement on the part of one of them caused the weasel to dart back, when it reappeared, again and again, at points along the rockwork, until they were convinced there were at least a half dozen of the animals. However, after the one was shot no more were seen.

The nervy little fellow, who would tackle, in midday and in the presence of hunters, an animal as large as a rabbit, was less than one-fourth the size of the larger weasels. In fact, his slender body was no larger than a man's thumb and his

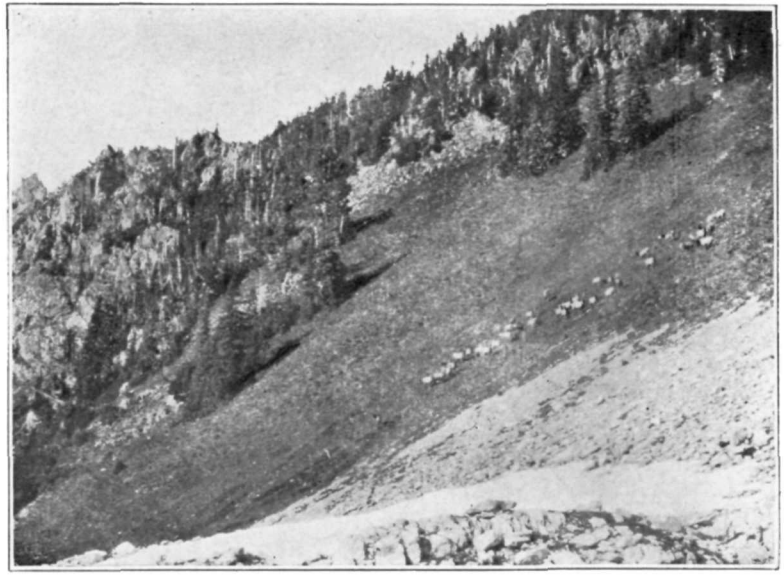
length, exclusive of the two and a half inch tail, was only six and a half inches. Unlike the larger species, the tail was not tipped with black.

Another instance of direct evidence is given by Misses Chambers and Wiggins of the Klahhane club, who watched a weasel chase a rabbit the length of a log and back again, bunny doubling three times before they were able to interfere and save its life.

The head and neck of the Least Weasel being so very small, they are able to enter the homes of rats and meadow mice with ease. Also they catch small birds and eat the young and eggs, being equally at home among the branches.

Weasels are very destructive of poultry, killing for the love of it, the same as the small boy, when armed with a new 22, shoots at everything he sees during his day's ramble in the woods. Twenty fowls are often killed in a henhouse in a night by a single weasel, which can squeeze through almost any knothole or wide crack and can climb anywhere a mouse can go.

John Burroughs writes of a weasel which "pursued a hen to my very feet and seized it and would not let it go until I put my foot upon it and gripped it by the back of the neck with my hand."



Typical View of Herd of Elk

The Coyote

UNTIL the last two or three years the Coyote has not been a resident of the northern Olympic peninsula country, but now occasional individuals are being reported by the ranchers along Hood Canal, in Chimacum Valley and even on the outskirts of Sequim prairie.

About two-thirds as large as a timber wolf, rather more grayish in color, holding the tail close to the legs rather than streaming out toward the horizon as in the case of his big cousin, he is easily recognized.

They are quite fecundant, there sometimes being ten or twelve in a litter; their dens are burrows in earth banks or, when it is to be found, a crevice in the rocks. Most of the western states put a bounty on their heads, millions of dollars having been spent in their attempted extermination.

With rabbits and mountain beaver so abundant and poultry allowed to wander through the ferns and brush, it will not be surprising if they become fairly common in the course of a few years.

The Oregon Mole

THE largest and handsomest of the family, the Oregon Mole has become, through the efforts of our State Experimental Station, one of the best known mammals of the region. Millions of mole skins have been imported into the United States annually from Europe and Asia, the demand being practically unlimited. The Oregon Mole is larger, being eight and a half inches in length, its purplish-black fur is longer and more velvety and brings the highest price of any. By means of bulletins and illustrated lectures showing methods of trapping and preparing skins, the State College men are endeavoring to combat the rapid increase of these animals, which are generally considered a nuisance by the rancher and home owner.

The Mole is strongly built, of cylindrical shape, has a pointed head ending in a drill-like nose which is hard as a piece of bone; has neither eyes nor ears worth mentioning; no neck, front feet broad and flat, an inch long by three-fourths inch wide, and provided with long claws like shovels which are always held vertically with the outer

edge up that he may force the earth away from and back of his head; small hind feet; an inch-long naked tail; and fur that lies equally flat either way permitting him to back up as easily as to go forward. Nature never made a more thoroughly one purpose animal than the mole, which spends its life underground, boring through the soft earth in its search for earthworms, cutworms, grubs and insects, upon which it lives.

Being most voracious, always ravenously hungry, they work hard, only a few hours being required to network a garden with tunnels and to dot it plentifully with large mounds of surplus earth. They are particularly objectionable in lawns and pastures, but are found almost everywhere, even in heavy timber, and in the old clearings up the mountain streams — clearings that are separated by miles of rock canyons and which are only reached by trails which climb way up on the mountain sides.

Naturalists who have made a study of the habits of the mole tell us that the nest is in a dome-shaped room, the top of which is below the surface of the ground; around this are two circular burrows, one above the other and both above the nest chamber, the upper one being in the hillock of dirt thrown out during the course of excavation. Their systems of tunnels are said to be intricate, showing considerable engineering skill; they run at various depths, in every direction and cover a considerable amount of ground.

There is also a storehouse filled with headless earthworms, it being the practice of the mole to bite the heads off from all worms that cannot be eaten at the time and to put them away in a cool

place where they will remain dormant instead of growing new heads. Not that I have ever seen such a storehouse, for the inclination to uncover a couple of miles, more or less, of mole tunnels has always been more than offset by a decided disinclination to indulge in such strenuous exercise; but the story is here set forth merely as additional proof of the truth of the old saying that "Truth is stranger than fiction." The reader may season it to his own taste.

In addition to Townsend's Mole, the big fellow that throws up the big mounds, we have two others, one of medium size, botanically known as *Scapanus orarius,* and the other a small shrew-like animal, doubtless stunted from overwork in his early youth, when he was dubbed *Neurotrichus gibbsi gibbsi,* which, it will be conceded, is some load, even for so energetic an animal as the mole.

Concerning the mole's ability in digging tunnels, Dr. Hornaday states he once placed one on rather loose ground, into which it instantly started digging; within three seconds the head had disappeared from sight and in ten seconds by the watch the animal was entirely under the surface. Desiring to observe their methods of working when undisturbed, he "placed one in a five-acre clover field at 11 o'clock a. m. During the first seven hours it had tunneled twenty-three feet, in a zig-zag line. During the next seventeen hours it dug thirty-five feet, and during the next hour, ten feet more. The total work consisted of sixty-eight feet of main line and thirty-six and a half feet of branches, making in all one hundred and four and a half feet."

Photo by Everett

An Elk Family

The Shrews

THE Shrews, which are the smallest of mammals, resemble more than anything else the common garden mole. They have beautiful velvety fur which furnishes ample protection against cold and wet; the legs and tail are short; the head is cone-shaped, having a very pointed nose; and they are quite small, the commonest species having a total length of about five and a half inches, one and a half of which is taken up by the tail. They are brown in color, with grayish underparts.

The shrews are active night and day, but as they keep rather closely to their runways in the forest leaves and rotting wood, or in grass bordering fields and along streams, they are seldom seen alive, and from the occasional dead individual lying alongside the road one would never realize that they are possibly the most common animal, in the thirty-five or more species, in North America.

Their eyes are very small, but the sense of hearing and particularly that of smell are sufficiently well developed to make up the deficiency. Their food consists of insects, earthworms, snails and most anything in the way of meat that they can

find and master. Being extremely pugnacious, they cannot be kept in captivity with other small mammals such as mice, nor even with other individuals of their own tribe. Such experiments always result of an immediate fight to the death, when the victor promptly makes a meal of the vanquished. They have a squeaky voice and emit a disagreeable musky odor.

Shrews are found in all localities, equally at home in the timber, in the swamps, up on the mountains, or along the sandy beach. They do not hibernate and their footprints may often be seen in the snow where the tiny holes indicate that they burrow through about as readily as they would run along the ground.

Another branch of the shrew family, the Water Shrews, are occasionally seen swimming across the smaller pools of the Olympic mountain streams. They are not only comparatively rare, but owing to their habit of keeping close to cover are difficult to study. They are as much at home in the water, swimming on the surface or diving underneath, as the muskrat, and have hind feet especially fitted for use as paddles. Insects together with an occasional mouse constitute their diet; it is claimed that they also eat trout minnows and their eggs, but it is doubtful if they do any great damage in that way.

The species: *Sorex vegrans,* the common shrew of western Washington; *Sorex setosus,* type locality Happy Lake, elevation about 5,000 ft., near Port Angeles; *Neosorex bendiri albiventer,* the big water shrew, first found at Lake Cushman, Olympic mountains.

The Beaver

THE Beaver, once so abundant that the North American population alone has been estimated at upwards of one hundred million, or an average of two hundred per square mile in the occupied area, has become one of the rare animals throughout the settled regions. Nearly all states, including Washington, now have laws providing for their protection.

In the low-lying lands on the west side of the Olympics a few Beaver are still to be found, where once they were sufficiently numerous to have warranted the naming after them of lake, prairie and streams.

Many books have been written descriptive of the life and works of the Beaver and many stories, wholly without foundation of truth, have been included therein. As far back as 1771 Samuel Hearne of the Hudson Bay Company wrote concerning a book entitled "Wonders of Nature and Art" that "little remains to be added to the writer's account of the beaver beside a vocabulary of their language, a code of their laws, and a sketch of their religion, to make it the most complete natural history of that animal."

The best work on the Beaver is doubtless that written by Enos A. Mills, whose observations covered a period of twenty-seven years and who spent weeks in their colonies, watching them while himself concealed in the tops of trees or in piles of boulders. He describes in fullest detail their work in building dams, constructing their houses, gathering food for winter, digging canals, leading water to dry places, etc., etc., summing up which he says, "I have so often seen him change his plans so wisely and meet emergencies so promptly and well that I can think of him only as a reasoner,"

Mills says the Beaver's tail serves as "a rudder, a stool, a prop, a scull, and a signal club", the latter by thumping the ground when a tree is about to fall, or when other danger threatens—but that he does not use it as a trowel, the filling and plastering being done with the forepaws, which are handlike.

Large specimens are forty inches in length and weigh up to forty pounds; the tails average up to ten inches in length and four in width. The tail appears to be covered with scales, but the scales do not exist. On two occasions Mills has known a Beaver to kill a bobcat.

They prefer to cut trees, aspen, willow, cottonwood and alder from four to six inches in diameter, but trees up to eighteen inches and even three feet six inches in diameter have been cut. diameter have been cut.

The Otter

VERY few Otter have been trapped in the Olympic peninsula; in fact, the Otter is now a rare animal anywhere within its range, which extends at the present time from Washington to Alaska on the coast and includes a few localities in the Rockies as well as most of Canada. They are shy animals, living along secluded streams, where they excavate a large nest beneath the roots of large trees, the entrance being under water, with a smaller tunnel extending upwards for ventilation. They live upon fish, molluscs and crustaceans, being particularly fond of trout.

The Otter is slender, having a length of about twenty-seven inches with sixteen inches additional in the tail. Yet they are plump, weighing from thirty to forty pounds. The head is broad and flat with stubby nose, round ears and deep-set eyes. The webbed hands are broad with wide-set fingers making a semi-circle and they are further aided in swimming by the tail which is very muscular, being thick, tapering, and somewhat fllattened to act as a propeller. The Otter is as much at home

in the water as upon land and is able to swim long distances under water.

The fur is extremely dense, of a glossy, dark brown, but so few are caught that it is almost off the market. In the old days, when they were not uncommon throughout the timbered portions of the entire country, their slides were one of the wonders of the animal world. Selecting a steep clay bank above the water, a family would spend hours tobogganing down and playing in the water, until the clay became worn as smooth as a polished board. In winter they make use of high snow banks for the same purpose, continuing the sport until they become tired.

The young were frequently caught and proved to be very interesting pets. Audubon has a family of young which "became as gentle as puppies in two or three days. They preferred milk and boiled cornmeal, refusing fish or meat until they were several months old. They became so tame they would romp with their owner and were very good-natured."

Small sized animals are occasionally caught along the Soleduck and other mountain streams.

Sea Lions on Rocks at Cape Flattery

The Sea Otter

THE Sea Otter, "wildest and wariest of all wild creatures," found only on the surf-bound rocks and islets of the North Pacific coast, is a somewhat larger species, being between three and four feet in length, outside of the ten or twelve inch tail, and weighing from eighty to a hundred pounds. They are a deep lustrous black.

The young are said to be born on the kelp beds and to be active at birth. The mother carries them in her mouth, for there is never more than one or two, or holds them between her forelegs while she swims upon her back; during winter and spring they spend much time upon the rocks, but later are found a hundred miles or more offshore.

"I remember years ago," writes W. W. Washburn, Jr., of Neah Bay, "that the natives had lookout stations on top of tall poles and trees where they could watch for sea otter. Of late years, however, owing to the scarcity of the animals, they have ceased the practice of watching for them."

Formerly the Sea Otter was common from

Lower California to the Aleutians, but has now become extinct over much of this coast line. Many stories are told of thousands of skins being taken by expeditions fitted out for the purpose. In 1804 a Russian and American company marketed over fifteen thousand skins of the Otter in one year, realizing over a million dollars therefor.

The skins have steadily increased in value until fine large specimens bring several hundred dollars each.

The Harbor Seal

THE Harbor or Leopard Seal, so well known along our coast from its habit of following boats during the salmon run, as well as from the skins tacked up on Indian shacks, is found around the world from the temperate zone northward. They are not polygamous like the fur seal, nor do they migrate. Where plentiful, they may be seen in small herds on rocks or reefs near the coast, or on sand spits at the mouths of rivers, which they frequently ascend as far as the depth of the water will readily permit. Their bump of curiosity seems to be well developed for they will frequenty come up alongside a skiff and, only the head with its large, human-like eyes showing, will watch one for some little time. They make very interesting pets and are easily trained to do a variety of tricks. The young are white, and woolly instead of being coarse-haired. In the North, where they are very abundant, the Eskimos depend very largely upon them for food, clothing and nets.

The Sea-Lion

THAT the days of real sport may yet be enjoyed by the big game hunter and tourist who visits the Olympic peninsula — a fact not generally known to the tourist and quite generally overlooked by the resident — was brought forcibly to mind this past August, when Prof. C. J. Albrecht, curator of the Washington University museum, brought into town a truck load of skins of the big Stellar Sea-Lion which he had collected on the reefs about seven miles off the Quillayute.

These animals, of which the old bulls are said to attain an average weight of between 1,200 and 1,500 pounds, breed on the Pribilof and Aleutian islands, in the North Pacific, migrating in the early fall to the Washington coast, and even as far south as California. In former years one of the principal mainstays of the northern natives, whom they furnished with meat and blubber, as well as with boat covering and waterproof coats, their numbers have been so reduced that there are now but a few thousand where once they were numbered by the hundreds of thousands. Still,

Cast Up on the Beach

they are fairly plentiful off the coast, from two to three hundred being seen on one trip out to the reefs.

Mr. Albrecht was fortunate in securing an exceptionally large specimen for the center of his group, a bull weighing over a ton, and measuring twelve feet four inches before being skinned. The skin was one and a half inches thick on the shoulders and three husky men were necessary to carry the skin alone. The cows average much smaller, weighing about five hundred pounds each.

Some of the animals were lying sound asleep on the rocks, while others disported in the water and still others would engage in fierce battles. Beverly B. Dobbs of Seattle secured two or three hundred feet of film for his "Clallam County reel," off Cape Flattery a year ago, showing the Sea-Lions in the surf, climbing up onto the rocks and diving, and finally a most exciting battle between two immense bulls, which kept up their savage attacks until one was forced off into the water.

The accompanying illustration shows a Sea-Lion, which had been shot and had drifted onto the beach at high tide. From a little distance it appeared very much like a Jersey cow; in fact, for such we—my daughter and I—at first mistook it. The illustration, having been made from a vest pocket kodak picture, was the best we could obtain; after going on down the beach Dorothy said, "I would have liked my picture sitting on it, but I was afraid it would go 'squash'."