

way and get himself a good wife, and then it would be well to have the linen marked with his own name so he wouldn't have to buy it all new. Here you see, Thorarin—and then to think that he should never come home to his mother again and never go to Norway and never get any wife."

Mrs. Raven stood tearfully viewing the pillow-case with the embroidered initials, but seeing that her companion was too much absorbed in the present misfortune to have much sympathy to spare for her, she laid it down with a sigh of resignation, smoothed it out carefully, and moved toward the door.

"One moment, Mrs. Raven, if you please," demanded the young farmer, walking close up to her and speaking in a confidential whisper. "I am sorry that we have brought all this trouble upon you. It is all my fault, and I hope you will allow me to bear the expense, whatever it may be. But probably——"

"Sir!" interrupted the old gentlewoman fiercely, drawing herself up into an attitude of stiff dignity. "I hope you are not aware that you are speaking to the widow of a royal Norwegian government——"

"Yes, yes, certainly I am," broke in Thorarin, a little impatiently. "I assure you I meant no harm. But we will say nothing more about it, at least not to-night."

"I am glad you have recovered your senses," rejoined Mrs. Raven, still visibly bristling.

Down in the lower hall she met Amund, who inquired anxiously for Helga.

"How is he now, the poor young man?" asked she, heedless of his question.

"Not much change yet," answered Amund, sadly. "We must move him upstairs at once."

"Oh yes, yes, we must thank God," murmured she, moving her hands and head in token of effusive gratitude. "Since this thing had to happen, we should be grateful to God that it did not happen to us."

Mrs. Raven had a notion that sickness and misfortune were a kind of force or fluid which was hovering about in the air, and in the end had to come down on somebody; and with the generosity peculiar to her type of Christians she prayed devoutly to God that that somebody might be her neighbor rather than herself.

(To be continued.)

THE DOUGLASS SQUIRREL OF CALIFORNIA.

THE Douglass squirrel is by far the most interesting and influential of all the California sciuridæ, surpassing every other species in force of character, numbers, extent of range, and in the amount of influence he brings to bear upon the health and distribution of the vast forests he inhabits.

Go where you will throughout the noble woods of the Sierra Nevada,—among the giant pines and spruces of the lower zones, up through the towering silver-firs to the storm-bent thickets of the Alps, you everywhere find this little squirrel the master-existence. Though only a few inches long, so intense is his fiery vigor and restlessness, he stirs every grove with wild life, and makes himself more important than even the huge bears that shuffle through the tangled underbrush beneath him. Every wind is fretted by his voice, almost every bole and branch feels the sting of his sharp feet. How much the growth of the trees is stimulated by this means it is not easy to learn, but his action, in manipulating their seeds is more appreciable. Nature has made him master-for-

ester and committed almost the whole of her coniferous crops to his paws. Probably over fifty per cent. of all the cones ripened on the Sierra are cut off and handled by the Douglass alone, and of those of the big trees (*Sequoia gigantea*), forming an interrupted belt nearly two hundred miles long, perhaps ninety per cent. pass through his hands. The greater portion is of course stored away for food during the winter and spring, but some of them are tucked separately into holes, and loosely covered, where they germinate and become trees. But the Sierra is only one of the many provinces over which he holds sway, for his dominion extends over all the redwood belt of the coast mountains, and far northward throughout the majestic forests of Oregon and Washington Territory. I make haste to mention these facts, to show upon how substantial a foundation the importance I ascribe to him rests.

The only one of the family to which the Douglass is very closely allied is the red squirrel or chickaree of the eastern woods.

Ours may be a lineal descendant of this species, probably distributed westward to the Pacific by way of the great lakes, and thence southward along our forested ranges. This view is suggested by the fact that our species becomes redder and more chickaree-like in general, the farther it is traced back along the course indicated above. But whatever their relationship, and the evolutionary forces that have acted upon them, the Douglass is now the larger and more beautiful animal.

From the nose to the root of the tail, he measures about eight inches; and his tail, which he so effectively uses in interpreting his feelings, is about six inches in length. He wears dark bluish gray over the back and half-way down the sides, bright buff on the belly, with a stripe of dark gray, nearly black, separating the upper and under colors. This dividing stripe, however, is not very sharply defined. He has long black whiskers, which gives him a rather fierce look when observed closely, strong claws, sharp as fish-hooks, and the brightest of bright eyes, full of telling speculation.

A King's River Indian told me that they call him "pillilooeet," which, rapidly pronounced with the first syllable heavily accented, is not unlike the lusty exclamation he utters on his way up a tree when excited. Most mountaineers in California call him the pine-squirrel, and when I asked an old trapper the other day whether he knew our little forester, he replied with brightening countenance:

"Oh yes, of course I know him; everybody knows him. When I'm hunting in the woods, I often find out where the deer are by his barking at them. I call 'em lightnin' squirrels, because they're so mighty quick and peert."

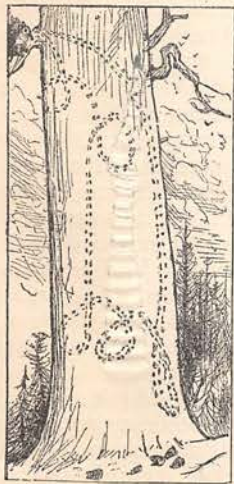
All the true squirrels are more or less bird-like in speech and movements; but the Douglass is pre-eminently so, possessing, as he does, every attribute peculiarly squirrelish enthusiastically concentrated. He is the squirrel of squirrels, flashing from branch to branch of his favorite evergreens, crisp and glossy, and undiseased as a sunbeam. Give him wings, and he would outfly any bird in the woods. His big, gray cousin is a looser animal, seemingly light enough to float on the wind. Yet when leaping from limb to limb, or out of one tree-top to another, he sometimes halts to gather strength, as if making efforts concerning the upshot of which he could not always feel exactly confident. But the Douglass, with his denser body,

leaps and glides in hidden strength, seemingly as independent of common muscles as a mountain stream. He threads the tasseled branches of the pines, stirring their needles like a rustling breeze; now shooting across openings in arrowy lines; now launching in curves, glinting deftly from side to side in sudden zigzags, and swirling in giddy loops and spirals around the knotty trunks; getting into what seem to be the most impossible situations, without sense of danger; now on his haunches, now on his head; yet ever graceful, and punctuating his most irrepressible outbursts of energy with little dots and dashes of perfect repose. He is, without exception, the wildest animal I ever saw,—a fiery, sputtering little bolt of life, luxuriating in quick oxygen and the woods' best juices. One can hardly think of such a creature being dependent, like the rest of us, on climate and food. But, after all, it requires no long acquaintance to learn he is human, for he works for a living. His busiest time is in the Indian summer. Then he gathers burrs and hazel-nuts like a plodding farmer, working continuously every day for hours; saying not a word; cutting off the ripe cones at the top of his speed, as if employed by the job, and examining every branch in regular order, as if careful that not one should escape him; then, descending, he stores them away beneath logs and stumps, in anticipation of the pinching hunger days of winter. He seems himself a kind of coniferous fruit, both fruit and flower. The rosin essences of the pines pervade every pore of his body, and eating his flesh is like chewing gum.

One never tires of this bright chip of nature,—this brave little voice crying in the wilderness,—observing his many works and ways, and listening to his curious language. His musical, piney gossip is savory to the ear as balsam to the palate; and, though he has not exactly the gift of song, some of his notes are sweet as those of a linnet,—almost flute-like in softness; while others prick and tingle like thistles. He is the mocking-bird of squirrels, pouring forth mixed chatter and song like a perennial fountain. Barking like a dog, screaming like a hawk, whistling like blackbirds and sparrows; while in bluff, audacious noisiness he is a jay.

In descending the trunk of a tree with the intention of alighting on the ground, he preserves a cautious silence, mindful, perhaps, of foxes and wild-cats; but there is no end to his capers and noise while rocking safely

at home; and woe to the gray squirrel or chipmunk that ventures to set foot on his favorite tree! No matter how slyly they trace the furrows of the bark, they are speedily discovered, and kicked down-stairs with comic vehemence, while a torrent of angry notes comes rushing from his whiskered lips that sounds remarkably like human swearing. He will even attempt at times to drive away dogs and men, especially if he has had no previous knowledge of them. Seeing a man for the first time, he approaches nearer and nearer, until within a few feet; then, with an angry outburst, he makes a sudden rush, all teeth and eyes, as if about to eat you up. But, finding that the big, forked animal doesn't scare worth a nut, he prudently beats a retreat, and sets himself up to reconnoiter on some overhanging branch, scrutinizing every movement you make with ludicrous solemnity. Gathering courage, he ventures down the



TRACK OF DOUGLASS SQUIRREL,
ONCE DOWN AND UP A FINE-
TREE WHEN SHOWING OFF
TO A SPECTATOR.

trunk again, churring and chirping, and jerking nervously up and down in curious loops, eying you all the time, as if showing off and demanding your admiration. Finally, growing calmer, he settles down in a comfortable posture on some horizontal branch commanding a good view, and beats time with his tail to a steady "Cheéup! cheéup!" or, when somewhat less excited, "Peéah!" with the first syllable keenly accented, and the second drawn out like the scream

of a hawk,—repeating this slowly and more emphatically at first, then gradually faster, until a rate of about a hundred and fifty words a minute is reached, and usually sitting all the time on his haunches, with paws resting on his belly, which pulses visibly with each word. It is remarkable, too, that, though articulating distinctly, he keeps his mouth shut most of the time, and speaks through his nose. I have occasionally observed him even eating sequoia seeds and nibbling a troublesome flea, without ceasing or in any way confusing

his steady "Peéah! peéah!" for a single moment. While ascending trees all his claws come into play, but in descending, the weight of his body is sustained chiefly by those of the hind feet; still, in neither case do his movements suggest effort, though if you are near enough you may see the bulging strength of his short, bear-like arms, and note his sinewy fists clinched in the bark.

Whether going up or down, he carries his tail extended at full length in line with his body, unless it be required for gestures. But while running along horizontal limbs or fallen trunks, it is frequently folded forward over the back, with the airy tip daintily upcurled. In cool weather it keeps him warm. Then, after he has finished his meal, you may see him couched close on some level limb with his blanket neatly spread and reaching forward to his ears, the electric, out-standing hairs quivering in the breeze like pine-needles. But in wet or very cold weather he stays in his nest, and while curled up there his comforter is long enough to come forward around his nose. It is seldom so cold, however, as to prevent his going out to his stores when hungry.

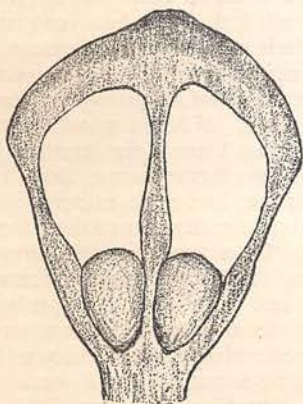
Once while making a winter ascent of Mount Shasta, I lay storm-bound on the extreme upper edge of the timber line for three days, and while the thermometer stood nearly at zero and the sky was thick with driving snow, a Douglass came bravely out several times from one of the lower hollows of a dwarf pine, faced the wind without seeming to feel it much, frisked lightly about over the mealy snow and dug his way down to some hidden seeds with wonderful precision, as if to his eyes the thick snow-covering were glass.

No other of the Sierra animals of my acquaintance is better fed, not even the deer, amid abundance of sweet herbs and shrubs, or the mountain sheep, or omnivorous bears. His food consists of hazel-nuts, chinquapins, and the nuts and seeds of all the coniferous trees without exception,—pine, fir, spruce, libocedrus, torreyia, juniper and sequoia,—he is fond of them all, and they all agree with him, green or ripe. No cone is too large for him to manage, none so small as to be beneath his notice. The smaller ones, such as those of the Williamson and Douglass spruce and the two-leafed pine, he cuts off and eats on a branch of the tree, without allowing them to fall; beginning at the bottom of

the cone and cutting away the scales to expose the seeds; not gnawing by guess like a bear, but turning them round and round in regular order, in compliance with their spiral arrangement.

When thus employed, his location in the tree is betrayed by a dribble of scales, shells, and seed-wings, and, every few minutes, by the stripped axis of the cone. Then of course he is ready for another, and if you are watching you may catch a glimpse of him as he glides silently out to the end of a branch and see him examining the cone-clusters until he finds one to his mind, then, leaning over, pull back the springy needles out of his way, grasp the cone with his paws to prevent its falling, snip it off in an incredibly short time, seize it with jaws grotesquely stretched, and return to his chosen seat near the trunk. But the immense size of the cones of the sugar-pine,—from sixteen to twenty inches in length—and those of the yellow-pine, compels him to adopt a quite different method. He cuts them off without attempting to hold them, then goes down and drags them from where they have chanced to fall up to the bare, swelling ground around the instep of the tree, where he demolishes them in the same methodical way, beginning at the bottom and following the scale-spirals to the top.

From a single sugar-pine cone he gets from two to four hundred seeds about half the size of a hazel-nut, so that in a few min-



SEEDS, WINGS AND SCALES OF SUGAR-PINE. (NAT. SIZE.)

utes he can procure enough to last a week. He seems, however, to prefer those of the two silver-firs above all others; perhaps because they are most easily obtained, as the scales drop off when ripe without need-

ing to be cut. Both species are filled with an exceedingly pungent, aromatic oil, which spices all his flesh, and is of itself sufficient to account for his lightning energy.

You may easily know this little workman by his chips. On sunny hill-sides around the principal trees they lie in big piles,—bushels and basketfuls of them, all fresh and clean, making the most beautiful kitchen-middens imaginable. The brown and yellow scales and nut-shells are as abundant and as delicately penciled and tinted as the shells along the sea-shore; while the red and purple seed-wings mingled with them would lead one to fancy that innumerable butterflies had met their fate there.

He feasts on all the species long before they are ripe, but is wise enough to wait until they are fully matured before he gathers them into his barns. This is in October and November, which with him are the two busiest months of the year. All kinds of burrs, big and little, are now cut off and showered down alike, and the ground is speedily covered with them. A constant thudding and bumping is kept up; some of the larger cones chancing to fall on old logs make the forest re-echo with the sound. Other nut-eaters less industrious know well what is going on, and hasten to carry away the cones as they fall. But however busy the harvester may be, he is not slow to descry the pilferers below, and instantly leaves his work to drive them away. The little striped *tamias* is a thorn in his flesh, stealing persistently, punish him as he may. The large gray squirrel gives trouble also, although the Douglass has been accused of stealing from him. Generally, however, just the opposite is the case.

The excellence of the Sierra evergreens is beginning to be well known; consequently there is considerable demand for their seeds. The greater portion of the supply is procured by chopping down the trees in the more accessible sections of the forests alongside of bridle-paths that cross the range. Sequoia seeds bring about eight or ten dollars per pound, and therefore are eagerly sought after. Some of the smaller fruitful trees are cut down in the groves not protected by government, especially those of Fresno and Kings River. Most of them, however, are of so gigantic a size that the seedsmen have to look for the greater portion of their supplies to the Douglass, who soon learns that he is no match for these freebooters. He is wise enough, how-

ever, to cease working the instant he perceives them, and never fails to embrace every opportunity to recover his burrs whenever they happen to be stored in any place accessible to him, and the busy seedsmen often find on returning to camp that the little Douglass has very exhaustively spoiled the spoiler. I know one seed-gatherer who, whenever he robs the squirrels, scatters wheat or barley beneath the trees as conscience-money.

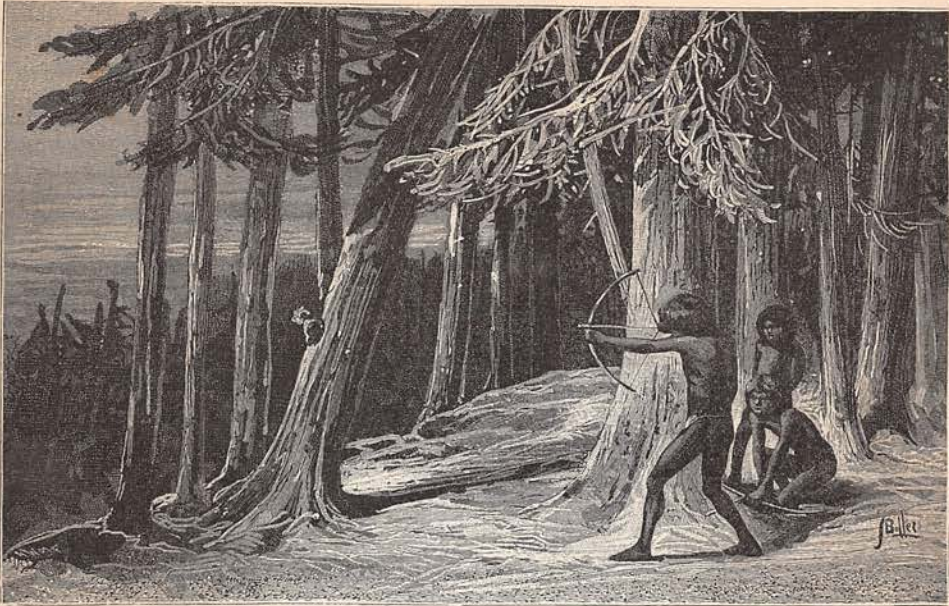
The want of appreciable life remarked by so many travelers in the Sierra forests is never felt at this time of year. Banish all the humming insects and the birds and quadrupeds, leaving only Sir Douglass, and the most solitary of our so-called solitudes would still throb with ardent life. But if you should go impatiently even into the most populous of the groves on purpose to meet him, and walk about looking up among the branches, you will see very little of him. You should lie down at the foot of one of the trees and he will come. For, in the midst of the ordinary forest sounds, the fallings of burrs, piping of quails, the screams of the Clark crow, and the rustling of deer and bears among the chaparral, he is quick to detect your strange footsteps, and will hasten to make a good, close inspection of you as soon as you are still. First, you may hear him sounding a few notes of curious inquiry, but more likely the first intimation of his approach will be the prickly sounds of his feet as he descends the tree overhead, just before he makes his savage onrush to frighten you and proclaim your presence to every other squirrel and bird in the neighborhood. If you are now capable of remaining perfectly motionless, he will make a nearer and nearer approach, and probably set your flesh a-tingle by frisking across your body. Once, while seated at the foot of a Williamson spruce in one of the most inaccessible of the San Joaquin Yosemite engaged in sketching, a reckless fellow came up behind me, passed under my bended arm, and jumped on my paper. And while an old friend of mind was reading one warm afternoon out in the shade of his cabin, one of his Douglass neighbors jumped from the gable upon his head, then with admirable assurance ran down over his shoulder and on to the book he held in his hand.

Our Douglass enjoys a large social circle. For besides his numerous relatives, *Sciurus fossor*, *Tamias quadrivittatus*, *T. Townsendii*, *Spermophilus Beecheyi*, *S. Douglassii*, he maintains intimate relations with the nut-

eating birds, particularly the Clark crow—*Picicorvus columbianus*—and the numerous woodpeckers and jays. The two spermo-philus are astonishingly abundant in the lowlands and lower foot-hills, but more and more sparingly distributed up through the Douglass domains,—seldom venturing higher than six or seven thousand feet above the level of the sea. The gray sciurus ranges but little higher than this. The little striped *tamias* alone is associated with him everywhere.

In the lower and middle zones, where they all meet, they are tolerably harmonious—a happy family, though very amusing skirmishes may occasionally be witnessed. Wherever the ancient glaciers that once loaded the range spread forest soil, there you find our wee hero, most abundant where depth of soil and genial climate have given rise to a corresponding luxuriance in the trees, but following every kind of growth up the curving moraines to the edge of the highest glacial fountains.

Though I cannot of course expect all my readers to sympathize fully in my admiration of this little animal, few I hope will think this sketch of his life too long. I cannot begin to tell here how much he has cheered my lonely wanderings during all the years I have been pursuing my studies in these glorious wilds; or how much unmistakable humanity I have found in him. Take this for example: One calm, creamy, Indian summer morning, when the nuts were ripe, I was camped in the upper pine-woods of the south fork of the San Joaquin, where the squirrels seemed to be about as plentiful as the ripe burrs. They were taking an early breakfast before going to their regular harvest work. While I was busy with my own breakfast I heard the thudding fall of two or three heavy cones from a yellow pine near me, and stole noiselessly forward within about twenty feet of the base of it to observe. In a few moments down came the Douglass. The breakfast-burrs he had cut off had rolled on the gently sloping ground into a clump of ceanothus bushes, but he seemed to know exactly where they were, for he found them at once, apparently without searching for them. They were more than twice as heavy as himself, but after turning them into the right position for getting a good hold with his long sickle-teeth he managed to drag them up to the foot of the tree he had cut them from, moving backward. Then seating himself comfortably, he held them on end, bottom



TRYING THE BOW.

up, and demolished them with easy rapidity. A good deal of nibbling had to be done before he got anything to eat, because the lower scales are barren, but when he had patiently worked his way up to the fertile ones he found two sweet nuts at the base of each, shaped like trimmed hams, and purple spotted like birds' eggs. And notwithstanding these cones were dripping with soft balsam, and covered with prickles, and so strongly put together that a boy would be puzzled to cut them open with a jack-knife, he accomplished his meal with easy dignity and cleanliness, making less effort apparently than a man would in eating soft cookery from a plate.

Breakfast done, I thought I would whistle a tune for him before he went to work, curious to see how he would be affected by it. He had not seen me all this while; but the instant I began he darted up the tree nearest to him, and came out on a small dead limb opposite me, and composed himself to listen. I sang and whistled more than a dozen tunes, and as the music changed his eyes sparkled, and he turned his head quickly from side to side, but made no other response. Other squirrels, hearing the strange sounds, came around on all sides, chipmunks also, and birds. One of the birds, a handsome, speckle-breasted thrush, seemed even more interested than the squirrels. After listening for a while on one of the lower dead sprays of a pine, he came swooping forward within a few feet

of my face, where he remained fluttering in the air for half a minute or so, sustaining himself with whirring wing-beats, like a humming-bird in front of a flower, while I could look into his eyes and see his innocent wonder.

By this time my performance must have lasted nearly half an hour. I sang or whistled "Bonnie Doon," "Lass o' Gowrie," "O'er the Water to Charlie," "Bonnie Woods o' Craig Lee," etc., all of which seemed to be listened to with bright interest, my first Douglass sitting patiently through it all, with his telling eyes fixed upon me until I ventured to give the "Old Hundredth," when he screamed his Indian name, Pillillooet, turned tail, and darted with ludicrous haste up the tree out of sight, his voice and actions in the case leaving a somewhat profane impression, as if he had said, "I'll be hanged if you get me to hear anything so solemn and unpiney." This acted as a signal for the general dispersal of the whole hairy tribe, though the birds seemed willing to wait further developments, music being naturally more in their line.

No one who makes the acquaintance of our forester will fail to admire him; but he is far too self-reliant and warlike ever to be taken for a darling.

I have no idea how long he lives. The young seem to sprout from knot-holes,—perfect from the first, and as enduring as their own trees. It is difficult, indeed, to

realize that so condensed a piece of sun-fire should ever become dim or die at all. He is seldom killed by hunters, for he is too small to encourage much of their attention, and when pursued in settled regions becomes excessively shy, and keeps close in the furrows of the highest trunks, many of which are of the same color as himself. Indian

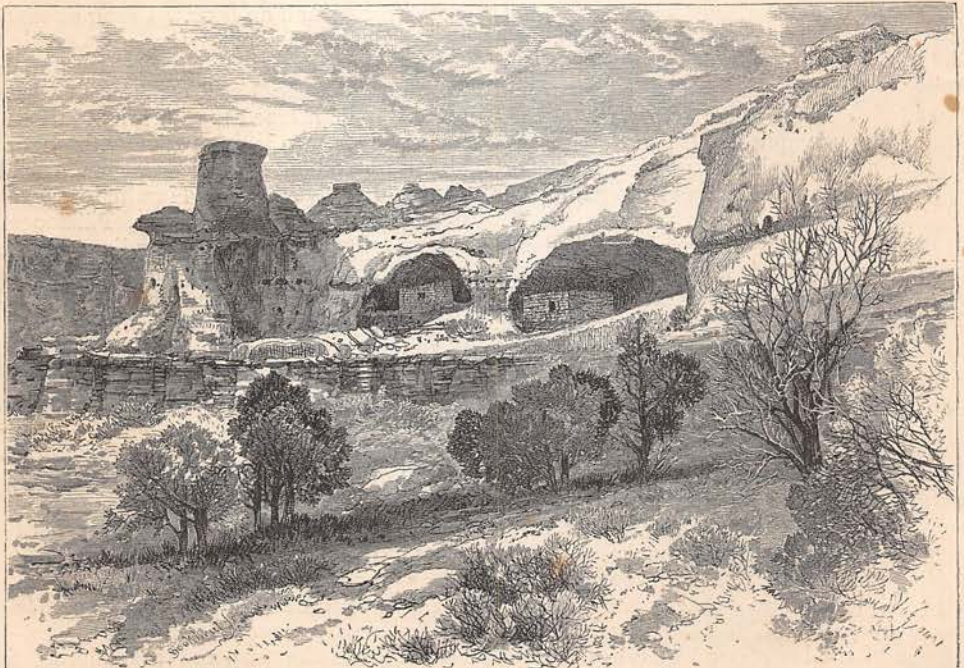
boys, however, lie in wait with unbounded patience to shoot them with arrows. A few fall a prey to rattlesnakes in the lower and middle zones. Occasionally he is pursued by hawks and wild-cats, etc. But, upon the whole, he dwells safely in the deep bosom of the woods, the most highly favored of all his happy tribe. May his tribe increase!

THE CLIFF-DWELLERS.

OUR ancestors named this the New World. They grouped their cabins upon its shores, believing themselves to be the first who had planted colonies within its primeval forests. After several hundred years' possession, we discover that successive and unnumbered civilizations had, possibly, flourished and decayed upon this continent before Columbus crossed the sea. Archæologists have examined fortifications in the prairies, have unearthed cities in the valleys, found sacrificial altars on the bluffs, and burial mounds by the water-courses, showing that the so-called New World is the mausoleum of a prehistoric race,—the cemetery of lost tribes, whose crumbling habitations are their only headstones.

Of late, blown over the plains, come stories of strange newly discovered cities of the far south-west; picturesque piles of masonry, of an age unknown to tradition. These ruins mark an era among antiquarians. The mysterious mound-builders fade into comparative insignificance before the grander and more ancient cliff-dwellers, whose castles lift their towers amid the sands of Arizona and crown the terraced slopes of the Rio Mancos and the Hovenweep [pronounced Höv'-en-weep].

A ruin, accidentally discovered by A. D. Wilson of the Hayden Survey several years ago, while he was pursuing his labors as chief of the topographical corps in Southern Colorado, is described to me by Mr. Wilson



ANCIENT CAVE-DWELLINGS ON THE McELMO.