

SHEEP AND THE FOREST RESERVES.

As I was talking one day with Mr. John Muir, the explorer, in his pleasant home in Martinez, California, he told me, with quiet humor, how, at one time, while exploring the Sierra Sequoias, he was persuaded to take with him a small wild mule to carry a pair of blankets and provisions, and how he had no end of trouble in finding a way for the little hybrid and enough pasture to keep it from starving. As a rule, he was wont to go afoot and without blankets; but this trip was to be a long one, and one that would carry him out of reach of even the simplest of food supplies.

Starting from Yosemite, the Sequoia belt was traced to its southern extremity, near the big bend of Kern River. On the long journey the wild mule became very tame and companionable; but grass and leaves of any sort grew scarcer and scarcer, until the south fork of Tule River was reached. Here one evening Mr. Muir turned his hardy companion out to feed, as best it could, on leafless brush. It went as it was told; but when Muir had made his campfire, and was brewing his tea, the mule came back from its searching. It had been unsuccessful.

“It just came to me,” said Muir, “put its head over my shoulder, and spoke to me.”

That was enough. He gave half his loaf of bread to the mule, and then and there told it that they would leave the next day for the lowlands and the needed feed. And so they did. The very evident trouble for John Muir and his mule were the sheep. Sheep had passed that way before them and had devoured every leaf—sheep that John Muir branded with a name more lasting than the mark on their wool when he called them hoofed locusts.

Most outsiders, townspeople and Eastern folk generally, are wont to think of all sheep as resembling Mary's little lamb, whose fleece was white as snow, and that followed her to school one day—pretty, harmless little pets, too weak and insignificant for a passing suspicion even that by any possible chance they could be agents for either

good or evil over the million acres of forest reserves that now are coming tardily to be valued at their worth, and to be protected accordingly by the United States, which owns them. A snowflake, a very pretty and delicate crystal it is, disappearing at a touch; but I remember, when I was a schoolboy, hearing read a certain composition called "The Captive Locomotive"—a locomotive mastered by the pretty white snowflakes. If harm is done, it is not one sheep that does it, but the millions. Two years ago, there were on record for taxation probably more than a million sheep in the one Sierra Reserve of California; and, in addition, there were the unrecorded thousands owned by roving Basque, French, and Portuguese herders.

The questions here arise: Is any harm done by the sheep? If so, what is the harm?

The answer is that the primary object in establishing the United States forest reserves was to conserve the water supply. It is upon the water supply from the mountains that the life of the valleys and lowlands depends. As vegetation is the chief means toward the conservation of the water, vegetation of every sort must be protected in every possible way. Vegetation exerts this influence for several reasons:

(1) When the light rains and the dews come, every trunk, sucker, stem, shoot, and blade, wherever found, acts as a leader to guide the drops down through the surface strata to the cool and hidden places of the precious mountain streams below.

(2) When the snows melt, and the heavier rains fall in torrents, it may be, every growing thing is a worker with trunk and roots, according to its strength, to hold back the rush of water that else would gully the mountain sides, and in time wash them bare.

(3) Fallen leaves, twigs, and the entire loose débris of the woods would all serve as a natural and greatly needed mulch to the soil for the danger time of the long summer droughts.

(4) The crowns of the trees and bushes and the grasses are curtains and screens over the damp ground, to shield it from the drying power of the sun, and from the equal or greater power of the winds.

It is in ways like these that the vegetation of the mountain conserves, directly or indirectly, the water supply upon which the life of the lowlands depends. No wonder that the toilers in those lowlands are sensitive in the extreme to anything that directly or indirectly, evidently or supposedly, endangers that supply. And now, as I have said, come by the million the sheep to do this very harm, so it is

claimed. And verily the list of charges against the sheep and their herders is a long one. And the complainants are not of one class merely. They are cattlemen, small ranchers, orchardists, electricians, hunters, tourists, and campers — well-nigh everybody but sheepmen and their clients.

The charges against the sheep, whether true or false, are, in detail, such as these :

(1) The sheep, it is claimed, eat and tread a country bare. Mr. Muir's experience with his mule was by no means exceptional. A sheep is not as ravenous as a goat, but is a good second. Sheep will eat even young pines. This is sometimes vehemently denied, but they will. A mountaineer once said to me : "They say sheep won't eat pines, but I've seen 'em do it. I've seen 'em so eager they'd stand on their hind legs and reach for the branches." Again, a mountain ranchman said to me : "Thousands of sheep used to pass my place every year. I've seen them come in the spring when there was a growth of young pine a few inches high and just rush to eat it."

At a Farmers' Institute, one evening, I asked the audience to offer evidence, if they could, either way, on the question. A gentleman rose and said that where he had lived in the North he knew it to be a common resource, when sheep were caught in the snow, to cut pine branches as feed to tide them over till they could escape.

It is not claimed that sheep prefer a diet of pine needles, or that they will thrive on it; but when hungry they will take it; and sheep in the mountains often are very hungry. Moreover, and probably worse, what a band of sheep may not care to eat it will trample to death. It is a common saying that "sheep kill more than they eat." Often they will kill more with their hoofs than with their mouths.

A letter from an old sheepman of the southern Sierras tells of a spring, long ago, when he took his sheep to the ranges. He writes :

"I have had experience in the mountains for over twenty years. In 1884 I took my sheep in near some meadows. All around the meadows, that spring, millions of little pine trees from three to eight inches high had sprung up. But when the sheep left the mountains, about the 20th of September, there was not a young tree left. Their sharp hoofs had cut them all off. A horse rake could have raked up stacks of the little dead trees."

One Sunday I was waiting over at a country tavern. A ranchman of the neighborhood, who proved interesting, lounged up and occupied an end of my bench. He said to me :

"Twenty-two years ago my brother came in on these mountains, and the country was all sheeped off, not a young tree growing. The sheep ate and tramped.

Seed would lie till spring, then just as it sprouted and got about an inch high, along came the sheep and tramped it to death. Nothing had a chance. My brother got some hogs, bucked against the sheepmen, and kept 'em out; and now the trees are up so thick you can't drive through 'em. Some are one and a half foot through."

One day I overheard this, in substance: "It ain't fair. Cattle are let on the reserves; why not sheep? A steer's heavier 'n a sheep, and its hoofs is bigger 'n a sheep's. If you 're goin' to shut out the herder, shut out the cattleman, too. I say it's class legislation."

The reply was: "No such thing. You 're all off. Bigness is n't the question. The point is, a steer's hoof is n't a chisel, and a sheep's is."

The last man was right. If the sheep would scatter in feeding, as cattle and horses do, it would be another matter; less harm would result. But that is not their way. They go in close bands. One will see two thousand sheep moving in a compact mass across a meadow. That means a live cutting machine made up of eight thousand closely placed double chisels, each chisel driven home at every stroke by some hundred pounds weight of live mutton, and with the strokes falling so thickly that not an inch of the ground escapes. No small growth can possibly resist a combined mowing and cutting and pounding like that. Nothing is left alive when the machine has passed. If sheep should eat off the year's growth only, one might claim that they had as good a right to it as any other animal. But they do more; they kill as they go, roots and all. There is no chance whatever of reforesting a sheep-infected range. The seedlings can get no start. In many places the native grasses even are killed out.

(2) But the eating and chiseling do not represent all the harm that is laid to the sheep. Aside from the cutting and killing of living things by this eight thousand footed, machine-like band of sheep, what would one imagine its effect to be on the ground itself? The sheep are a plough to the soil when it is dry. When it is clayey and moist the effect is the opposite, the same as that sometimes produced, on a small scale, in farm economy, when the farmer, having thrown up an embankment for a proposed reservoir, turns in a band of sheep and herds them there until they have tramped the clay floor into a water-proof, stone-like cement.

Whether the sheep in the reserve plough the soil into dust or stamp it into rock-like cement the natural conditions are changed. Now, what must follow when presently the rains fall or a hot day touches the snowdrifts? The blessed water comes, but what can it do? It cannot sink where it falls, drop by drop, into mulched and root-

bound mellow soil. There is no longer any soil in that condition. It cannot sink into the ground. It must run; it can do nothing else; and we all know what running water does. In its rush the mountains are gullied; great trees are undermined; it overlays the meadows with sand; it fills the rivers and reservoirs below with debris. Worst of all it is itself lost; it foams away, useless, to the ocean, instead of staying back in the mountains, and making a great sponge of them, till needed in the terrible summer time for the saving of the homes and the people in the plains below. Not that the sheep are the only agent in bringing about such results. Fire also is such an agent; but the sheep and the fire are allies. I shall speak of the latter a little later on.

Old mountaineers will show many a place where just such things as I have described have happened, in their time, from no other cause, it is claimed, but the coming and going of the sheep. One day I stopped to noon at a cabin larger and more comfortable than the average. The old man whose home it was said to me: "I came here thirty-seven years ago. Thinking of what the country was then, it is now like having come out of heaven into purgatory, to live here, for the sheep." The Government had been guarding the region for a year; but it will be many a long year before the country can be what it was when the old man was young.

(3) There is another wholly distinct and different charge. Indirectly, it is claimed, the sheep are responsible for forest fires.

Poor things, what is not charged against them? Yet it is true. One hears it on all sides. A sheepman, out of the business now, told me how, as he rode under the great firs, he would reach up from his horse and touch a match to the low-hanging branches, simply to see the mighty rush of fire and smoke and sparks skyward. What did he care for the king he had slain, or for the other kings that might go down, file after file, before the fire he had kindled? Moreover, the greater the fire the better for him, since there would be thus the more space for sheep feed.

I recall Mr. Muir's indignation as he pictured an ignorant, alien herder kindling a fire for his supper against the base of a tree that pilgrims might well come from the ends of the earth to view. Sheepmen are careless with their signal fires; they are careless with their camp fires; they build fires carelessly for protection against wild animals; they start fires, purposely, in the fall, to clear the ground for a better spring growth of feed. So reads the charge,

and those who make it are a multitude. This much is certain, however, that if in their handling of fires the herders were no more careless or indifferent than are the many campers, hunters, and tourists who traverse the reserves, they still would be a far greater source of danger, because the campers, hunters, and tourists can be easily warned and watched by the forest patrol, while the sheepmen cannot be so watched and warned. The former for the most part follow a few readily guarded routes. The latter wander anywhere, everywhere, at will.

Just here, while referring to fires, I shall call attention to one plausible defense of the sheepmen. They say: "Our sheep, by their trampling and eating, and we, by our occasional burning, prevent an over-rank growth of brush and young trees which otherwise would spring up so thickly as to furnish such an abundance of fuel that when the fires came nothing could live before their fury."

The answer to this has two sides. While the sheep do, in herds, keep down the young growth which by its thickness might furnish fuel for possible future fires, they also keep down the young growth upon which, as the old trees die off, the continuance of the forest depends, and through which alone the reforestation of the great stretches of the now denuded land can be effected. Furthermore, supposing the danger, as claimed, from over-dense growth did exist, it would be unscientific and impractical in the extreme to try to guard against it by the help of ignorant herders rather than by the systematic employment of a sufficient force of trained forest rangers. In substance, the present policy of the Government, as regards fires, is to run trails, to cut and burn fire-breaks, to fire and back-fire at the proper season and in needed localities, and then, in the fall, after the first rain and before the snow, gradually burn away the accumulation of logs, dead trees, and smaller rubbish, *i. e.*, the entire mass of forest debris. Something of this kind has been already accomplished. With increased appropriations much more could be hoped for in the near future.

(4) But again, and for a still different reason, the wrath of the people waxes warm against the sheep. This time it is not the welfare of the forests or the orchards, but the welfare of themselves, of which they are thinking. Many of the towns which border on the forest reserves are directly dependent upon the streams of those reserves for their household water supply. The water is sometimes received in reservoirs, and thence distributed through open canals,

ditches, and pipes; sometimes it is diverted immediately from the stream itself. Where sheep exist, this water cannot fail to be contaminated. Before the rule against the sheep was enforced, the health officer, in one town that I have in mind, reported, morning after morning, dead sheep found in the ditches. On one morning that I recall the number was eight. In another town the flow of water, when the faucets were turned, would be accompanied by the droppings of sheep. I have sometimes asked a settler or a camper by a stream far up in the mountains, "Do you drink this water?" And the answer would be, "No; the sheep are above."

And so it is that on every count the verdict is against the sheep. Is it any wonder that nearly all who know the facts are against them? Is it any wonder that the United States Government has finally taken vigorous action, or that its policy in excluding sheep absolutely from the reserves in the dry and middle belts, and either absolutely or partially in all the other reserves, is deemed a wise policy? Naturally, herders who have used the pasturage unhindered for years are disturbed. It matters nothing to them what the outcome in the future would be, whether the result, here as in other lands, would be desolation and death. Merchants dependent on the trade of the sheepmen also complain. One of them said to me: "Excluding the sheep means to me a loss in trade of two thousand dollars a year." Another said: "I should never have bought this place if I had known that the sheep were to be stopped from passing." In one case a small community was so seriously threatened financially that the State legislature was petitioned to intervene. The complaint was that without the tax per head levied on alien sheep the poor and tiny county — perhaps the poorest and smallest in all the States — would not have a sufficient income for its official life, and would immediately become bankrupt.

But the majority, in the sheep districts even, are with the Government. I asked a congressman for his opinion, and I was surprised at the promptness with which he replied: "Without doubt, the majority are with the Government for the exclusion of the sheep." And, what is more, it is encouraging to know that the people are with the Government not only in this one detail of its dealing with the sheep, but that they are with it heartily in its whole broad policy of advance in the forestry work of its great reserves.

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