

NATURAL HISTORY

By JOHN BURROUGHS

DO ANIMALS THINK?

WHEN we see the animals going about, living their lives in many ways as we live ours, seeking their food, avoiding their enemies, building their nests, digging their holes, laying up stores, migrating, courting, playing, fighting, showing cunning, courage, fear, joy, anger, rivalry, grief, profiting by experience, following their leaders, etc.—when we see all this, I say, what more natural than that we should ascribe to them powers akin to our own, and think of them as thinking, reasoning, reflecting, etc. A hasty survey of animal life is sure to lead to this conclusion. An animal is not a clod, nor a block, nor a machine. It is alive and self-directing, it has some sort of psychic life, yet the more I study the subject, the more I am persuaded that it does not think or reflect in any proper sense of those words. Animal life shows in an active and free state that kind of intelligence that pervades and governs the vegetable world—intelligence that takes no thought of itself. Here, in front of my window, is a black raspberry bush. A few weeks ago its branches curved upward, with their ends swinging full two feet above the ground; now those ends are thrust down through the weeds and are fast rooted to the ground. Did the raspberry bush think, or choose what it should do? Did it reflect and say, Now is the time for me to bend down and thrust my tip into the ground? To all intents and purposes yes, yet there was no voluntary mental process, as in similar acts of our own. We say its nature prompts it to act thus and thus, and that is all the explanation we can give. In like manner the nature of the animals prompts them to the deeds they do, and we think of them as the result of a mental process, because similar acts in ourselves are the result of such a process. See how the mice begin to press into our buildings as the fall comes on. Do they know winter is coming? In the same way the vegetable world knows it is coming when it prepares for winter, or the insect world when it makes ready, but not as you and I know it. The woodchuck “holes up” in late September; the crows flock and select their rookery about the same time, and the small wood newts or lizards soon begin to migrate to the marshes. They all know winter is coming, just as much as the tree knows, when in August, it forms its new buds for the next year, or as the flower knows that its color and perfume will attract the insects, and no more. The general intelligence of nature settles all these and similar things.

When a bird selects a site for its nest, it seems, on first view, as if it must actually think, reflect, compare, as you and I do when we decide where to place our house. I saw a little chipping sparrow trying to

decide between two raspberry bushes. She kept going from one to the other, peering, inspecting, and apparently weighing the advantages of each. I saw a robin in the woodbine on the side of the house trying to decide which particular place was the best site for her nest. She hopped to this tangle of shoots and sat down, then to that, she turned around, she readjusted herself, she looked about, she worked her feet beneath her, she was slow in making up her mind. Did she make up her mind? Did she think, compare, weigh? I do not believe it. When she found the right conditions, she no doubt felt a pleasure and satisfaction, and that settled the question. An inward, instinctive want was met and satisfied by an outward material condition. In the same way the hermit crab goes from shell to shell upon the beach, seeking one to its liking. Sometimes two crabs fall to fighting over a shell that each wants. Can we believe that the hermit crab thinks and reasons? It selects the suitable shell instinctively, and not by an individual act of judgment. Instinct is not always inerrant, though it makes fewer mistakes than reason does. The red squirrel usually knows how to come at the meat in the butternut with the least gnawing, but now and then he makes a mistake and strikes the edge of the kernel, instead of the flat side. The cliff swallow will stick its mud nest under the eaves of a barn where the boards are planed so smooth that the nest sooner or later is bound to fall. It seems to have no judgment in the matter. Its ancestors built upon the face of high cliffs, where the mud adhered more firmly.

A wood thrush began a nest in one of my maples, as usual making the foundation of dry leaves, bits of paper and dry grass. After the third day the site on the branch was bare, the wind having swept away every vestige of the nest. As I passed beneath the tree I saw the thrush standing where the nest had been, apparently in deep thought. A few days afterward I looked again, and the nest was completed. The bird had got ahead of the wind at last. The nesting instinct had triumphed over the weather. Dogs often do things that look very much as if they were the result of some sort of mind process. I recall one incident of this kind.

A friend and I were camping in the woods by a trout stream not far from a farm house. The farmer had a collie dog that was very poorly fed. He used to come about our camp and pick up any scraps he could find, or that we threw him, and growing bold, tried to go through our pails and pans. To this we objected and drove him away with sharp words of reproof, probably backed up by a stone or stick. One afternoon my friend and I strolled over to the farmer's house for a little chat. The dog was lying beside him on the grass. The moment we

appeared the dog got up and walked off, straight toward our camp. In a moment my friend said, "Did you notice that dog? I have a feeling that he has gone to loot our camp." So we cut short our call and hastened back. Sure enough, there was the dog in the shallow water about our larder, with his nose in the butter pail, which he had uncovered. The moment he caught sight of us he sneaked away in the most guilty and shamefaced manner, and whenever during our stay we encountered him after that, he slunk away with a guilty look. Did the dog reason? Did he think "Now they are away, *therefore* I can help myself to their food"? Now dogs and other animals certainly have the power of association. One thing reminds them of another. My neighbor's dog associates me and my dog. Whenever he sees me passing he looks up and down the road and over the fields to see where my dog is, and he did this for two years after my dog died. In the case of the above collie, the moment he saw us he was reminded of the food in our camp, and his chronic hunger prompted him to go thither. He also associated us, too, with the check and reproof he had received there. It was all the result of a very simple mental process. Was it, indeed, any more than takes place in any animal when it sees that which has barred it from its food taken away? a door opened, a cover removed, a fence prostrated? My friend and I had stood between the collie and something he coveted. When he saw us out of the way his hunger asserted itself. If animals were not capable of being stimulated into activity by the memory of food which is at a distance from them, they would all soon perish. We can hardly say that such things imply reason; they imply the animal forms of perceptive intelligence.

There was a time when I used to think the grouse reasoned, because it would allow me to approach it more closely as it sat on its drumming log, or in a tree, when I walked boldly along making much noise and never aiming at concealment, than when I tried to creep upon it. But the truth is, the grouse had never suffered harm from animals that moved, through the woods in this fashion; its real enemies—the fox, the lynx, etc.—were stealthy, and stalked it with very little noise. Hence such movements alone alarmed it.

A KNOWING COON.

As we sat by the fire one February day, an old woodsman told me a wonderful story of a coon he had tracked. He described how he found the tracks of the coon by a spring, in March, and had followed them to its den in a big red-oak tree on the mountain top. The sun had melted much of the snow, leaving many stones' bare, and on these the coon had always stepped whenever he could. The woodsman emphasized this, assuring me that this was a most knowing coon, a cunning old dog coon that knew

the woodsman would be trying to follow his trail, and so he stepped on the stones to battle him! The idea of this knowing old coon imagining or picturing to himself the trapper following his trail and being baffled wherever the coon had stepped on a stone, delighted the old woodsman exceedingly. He really thought this was what the coon had imagined as he ran through the woods. This is exactly the attitude of the "new school of natural study" and of most city people. But I had not looked for it from a real country man. The old raccoon had stepped on the stones that came in his way, to avoid the wet snow, no doubt, and get a better footing, just as you or I or any other beast, four-footed or two-footed, would have done.

SUICIDAL DUCKS.

Several correspondents have written me, touching the question raised in my September notes, of wounded ducks committing suicide. Four or five cases have been brought to my attention, of wounded ducks that have dived to the bottom and held fast to some object till they were dead. I do not for a moment dispute the fact; I only differ from my correspondents in my interpretation of the fact. My explanation of it is this: The wounded bird has but one impulse, and that is to hide from its enemy. If it were on the shore it would hide in the grass or weeds. In the water it dives, and in its death agony holds to some plant growth at the bottom. In all such cases the bird is no doubt mortally wounded and dies quickly. When it is not wounded unto death it swims under the water, seeks the shore, creeps out very cautiously and tries to escape in that way. The intent of deliberate suicide is of course absurd.

THE LEAP OF TROUT.

Mr. Arthur St. John Newberry, of Cleveland, Ohio, who has taken thousands of trout of all sizes, from an ounce to four pounds, from waters in nearly every section of Newfoundland, Canada and the United States, takes a sensible and practical view of the subject, yet is at a loss to understand just what was meant by trout leaping on a slack line, an explanation of which is given above. He writes:

"For a trout to leap from the water, when hooked to a long line and held under gentle pressure of the rod, is certainly not common, but I have seen it done in many instances. I remember one particular two-pound trout, caught in Munising Bay, Lake Superior, which leaped three times at the end of fifty feet of line, going straight up into the air like a bass, and have seen the same thing done in many cases and by trout of nearly all sizes. It is certain that trout rarely do this, but equally certain that they do occasionally, perhaps one out of every hundred I have caught leaped, certainly not more than that.

"I have found it the rare exception when black bass do not leap under similar conditions, and yet occasionally have seen a bass play entirely below the surface without jumping at all.

"According to my experience trout occasionally leap and black bass occasionally do not."

The two last paragraphs of Mr. Newberry's letter are comprehensive and conclusive.