

ST. JOHN, N. B., SATURDAY, MAY 2, 1891.

## NOTES OF A NATURALIST

SOME SEASONABLE SUGGESTIONS TO THE LOVER OF NATURE.

**The Flying Squirrel and His Relatives—The Evolution of the Song Bird—An Interview with a Mouse—The Wolf Spider and His Habits.**

When Nature made the flying squirrel she seems to have whispered a hint or promise of the same gift to the red squirrel. At least there is a distinct suggestion of the same power in the latter. When hard pressed the red squirrel will trust himself to the air with the same faith that the flying squirrel does, but, it must be admitted, with only a fraction of the success of the latter. He makes himself into a rude sort of parachute, which breaks the force of his fall very much. The other day my dog ran one up the side of the house, through the woodbine, upon the roof. As I opened fire upon him with handfuls of gravel, to give him to understand he was not welcome there, he boldly launched out into the air and came down upon the gravel walk, 30 feet below, with surprising lightness and apparently without the least shock or injury, and was off in an instant beyond the reach of the dog. On another occasion I saw one leap from the top of a hickory tree and fall through the air at least forty feet and alight without injury. During their descent upon such occasions their legs are widely extended, their bodies are broadened and flattened, the tail stiffened and slightly curved, and a curious tremulous motion runs through all. It is very obvious that a deliberate attempt is made to present the broadest surface possible to the air, and I think a red squirrel might leap from almost any height to the ground without serious injury. Our flying squirrel is in no proper sense a flyer. On the ground he is more helpless than a chipmunk because less agile. He can only sail or slide down a steep incline from the top of one tree to the foot of another. The flying squirrel is active only at night, hence its large soft eyes, its soft fur and its gentle, shrinking ways. It is the gentlest and most harmless of our rodents. A pair of them for two or three successive years, had their nest behind the blinds of an upper window of a large unoccupied country house near me. You could stand in the room in-

side and observe the happy family through the window pane against which their nest pressed. There on the window sill lay a pile of large shining chestnuts, which they were evidently holding against a time of scarcity, as the pile did not diminish while I observed them. The nest was composed of cotton and wool which they filched from a bed in one of the chambers, and it was always a mystery how they got into the room to obtain it. There seemed to be no other avenue but the chimney flue.



There are always gradations in nature, or in natural life; no very abrupt departures. If you find any marked trait or gift in a species you will find hints and suggestions of it, as it were, preliminary studies of it in other allied species. I am not thinking of the law of evolution which binds together the animal life of the globe, but of a kind of overflow in nature which carries any marked endowment or characteristic of a species in lessened force or completion to other surrounding species. Or if looked at from the other way a progressive series, the idea being more and more fully carried out in each succeeding type—a kind of lateral and secondary evolution. Thus there are progressive series among our song-birds. The brown-thrasher is an advance upon the cat-bird and the mocking bird is an advance upon the brown-thrasher in the same direction. Each one carries the special gift of song or mimicking some stages forward. The same among the larks, through the tit lark, shore lark up to the crowning triumph of the sky lark. The nightingale also finishes a series which starts with the hedge warbler, and includes the robin red breast. Our ground-sparrow songs probably reach their highest perfection in the song of the fox-sparrow; our finches in that of the purple finch, etc.

The same thing may be observed in other fields. The idea of the flying fish,

the fish that leaves the water and takes for a moment to the air, does not seem to have exhausted itself till we reach the walking fish of tropical America, or the tree-climbing fish of India. From the protective coloring of certain insects, animals and birds, the step is not far to actual mimicry of certain special forms and colors. The naturalists find in Java a spider that exactly copies upon a leaf the form and color of bird droppings. How many studies of honey gathering bees did nature make before she achieved her masterpiece in this line in the honey bee of our hives? The skunk's peculiar weapon of defense is suggested by the mink and the weasel. Is not the beaver the head of the series of gnawers, the loon of divers, the condor of soars? Always one species that goes beyond any other. Look over a collection of African animals and see how high shouldered they are, how many hints or prophesies of the giraffe there are before the giraffe is reached. After nature had made the common turtle, of course she would not stop till she had made the box tortoise. In him the idea is fully realized. On the body of the porcupine the quills are detached and stuck into the flesh of its enemy on being touched; but nature has not stopped here. With the tail the animal strikes its quills into its assailant. Now, if some animal could be found that actually threw its quills, at a distance of several feet, the idea would be still further carried out.

The rattlesnake is not the only rattler. I have seen the black snake and the harmless little garter snake vibrate their tails when disturbed in precisely the same manner. The blacksnake's tail was in contact with a dry leaf and it gave forth a



MEADOW MOUSE ON THE AUTHOR'S HAND.

loud humming sound, which at once put me on the alert. A western correspondent writes me that she once put a looking glass down on the floor in front of the canary bird's cage. The poor canary had not had any communion with his own kind for years. He used often to watch the ugly sparrows—the little plebeians—from his aristocratic

gilded palace. I opened his cage and he walked up to the looking glass and it was not long before he made up his mind. He collected dead leaves, twigs, bits of paper and all sorts of stray bits and began a nest right off. Several days after in his lonely cage he would take bits of straw and arrange them when they were given him.

I thought what different emotions this bird's reflected image awoke in its little breast from those aroused in a male blue bird last summer that so disturbed the sleep of my hired man in the early morn-



ing. The bird with its mate had a nest in a box near by the house, and after the manner of the blue birds was very inquisitive and saucy about windows; one morning it chanced to discover its reflected image in the windows of the hired man's room. The shade, of some dark stuff, was down on the inside, which aided in making a kind of looking glass of the window. Instantly the bird began an assault upon his supposed rival in the window and made such a clattering that there was no more sleep inside that room. Morning after morning the bird kept this up till the tired plowman complained bitterly and declared his intention to kill the bird. In an unlucky moment I suggested that he leave the shade up and try the effect. He did so, and his morning sleep was thenceforth undisturbed.

I encountered a little mouse in my travels the other day that interested me. He was on his travels also and we met in the middle of a mountain lake. I was casting my fly there when I saw just sketched or etched upon the glassy surface a delicate V shaped figure, the point of which reached about the middle of the lake, while the two sides as they diverged

faded out toward the shore. I saw the point of this V was being slowly pushed towards the opposite shore. I drew near in my boat and beheld a little mouse swimming vigorously for the opposite shore. His little legs appeared like swiftly revolving wheels beneath him. As I came near he dived under the water to escape me, but came up again like a cork and just as quickly. It was laughable to see him repeatedly duck beneath the surface and pop back again in a twinkling. He could not keep under water more than a second or two. Presently I reached him my oar when he ran up it and into the palm of my hand, where he sat for some time and arranged his fur and warmed himself. He did not show the slightest fear. It was probably the first time he had ever shaken hands with a human being. He was what we call a meadow mouse, but he had doubtless lived all his life in the woods and was strangely unsophisticated. How his little round eyes did shine and how he sniffled me to find out if I was more dangerous than I appeared to his sight.

After a while I put him down in the bottom of the boat and resumed my fishing. But it was not long before he became very restless and evidently wanted to go about his business. He would climb up to the edge of the boat and peer down into the water. Finally he could brook the delay no longer and plunged boldly overboard, but he had either changed his mind or lost his reckoning, for he started back in the direction he had come, and the last I saw of him he was a mere speck vanishing in the shadows near the other shore.

Later on I saw another mouse, while we were at work in the fields that interested me also. This one was our native white-footed mouse. We disturbed the mother with her young in her nest and she rushed out with her little ones clinging to her. A curious spectacle she presented as she rushed along, as if slit and torn into rags. Her pace was so precipitate that two of the young could not keep their hold and were left in the weeds. We remained quiet and presently the mother came back looking for them. When she found one she seized it as a cat seizes her kitten and made off with it. In a moment or two she came back and found the other one and carried it away. I was curious to see if the young would take hold of her again as at first and be dragged away in that manner, but they did not. It would be interesting to know if they seize hold of their mother by instinct when danger threatens, or if they simply retain the hold which they already have. I believe the flight of the family always takes place in this manner, with this species of mouse.

The day I disturbed this mouse I saw a spider, probably the wolf spider, kill a young toad. When perceived he was dragging the toad along over the plowed

ground. The toad was of course small, yet a good deal larger than the spider. The toad was alive, but died very soon after when the spider left him, alarmed no doubt by my presence, and hid under a clod. There is a spider in South America that kills small birds, and here is one at home that kills small toads. This wolf spider is a very savage creature. It spins no web by which to catch its game, but prowls about like a wolf and pounces upon its prey where it finds it. If you encounter one in your walk or confront him with a stick or the point of your cane, he is instantly up in an attitude of defense or will leap upon your stick and sink his poisonous fangs into it.

If I have seen an insect kill a toad, I have seen the little piping frog in the woods swallow an insect, the pretty green tree cricket; and it was a slow and laborious task for the little frog, too.

JOHN BORROUGHS.

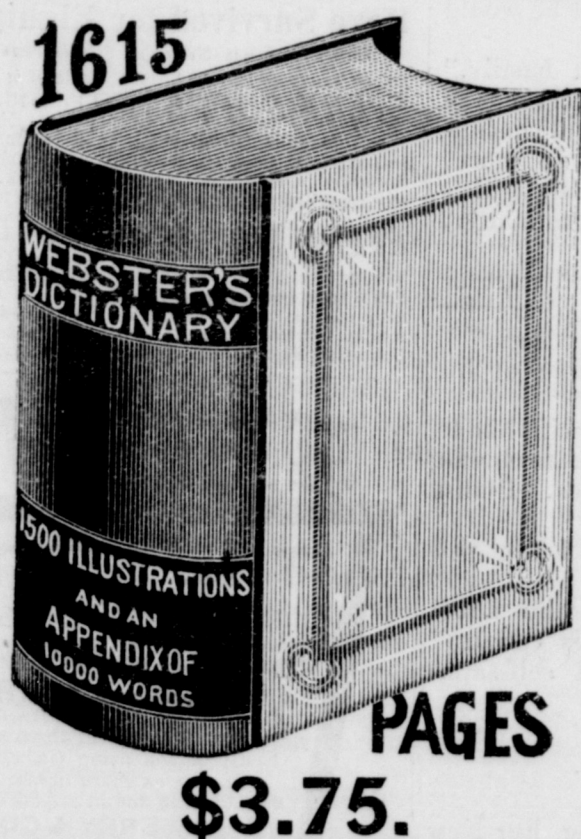
### The Antiquity of the Slot Device.

There was a coin-in-the-slot machine in Alexandria, Egypt, a couple of thousand years or so ago. It was invented by a priest, and dispensed holy water automatically. A coin dropped through the hole tilted the nicely balanced lever and a spoonful of liquid ran out into the palm of the hand. The slot idea is as old as the christian era.

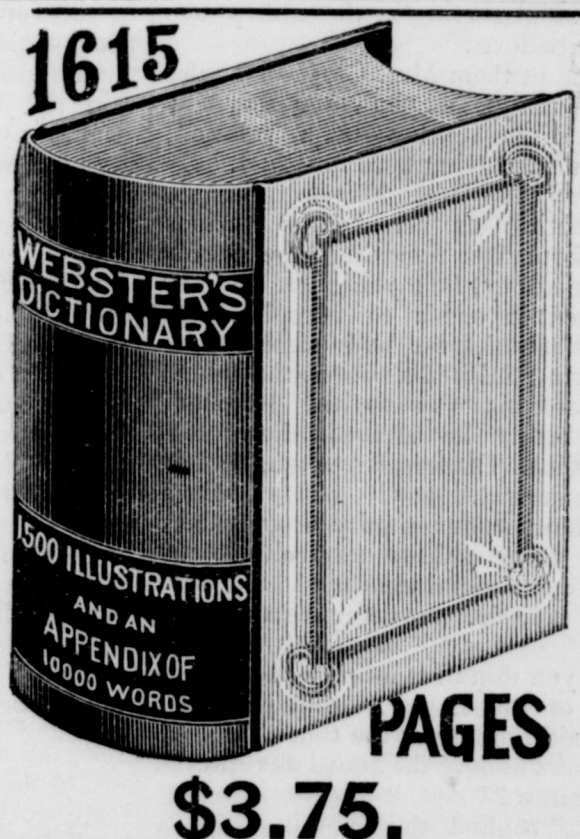
But what has puzzled inventors has been such an application of it as could not be beaten by bad boys. The earlier slot machines could be worked by buttons, by iron washers, by coins with strings attached and by iron rods. In one way and another the contents were pumped out and the owner of the machine and the merchandise was none the richer. About four years ago the inventors, by zigzag tubes or by careful adjustment of weight, or by some other contrivance succeeded in getting slot machines which could not be deceived by youthful ingenuity. Since then applications have poured in. Principal Examiner Aughinbaugh says that the patents on slot machines now number in the hundreds. There are seven different patents for slot machines for taking photographs. In England a patent has been granted for a machine which automatically weighs a person and announces the result audibly by a phonograph arrangement.

The most profitable slot machines of this immediate period are the musical phonographs. They are so many mints to the owners. Music rolls are changed daily. The owners have gone so far as to hire the famous Marine band to play many tunes for reproduction by the phonograph. An accomplished young lady performer is kept regularly employed in Washington at a salary of \$18 per week to play all of the latest music to the phonograph.—Globe-Democrat.

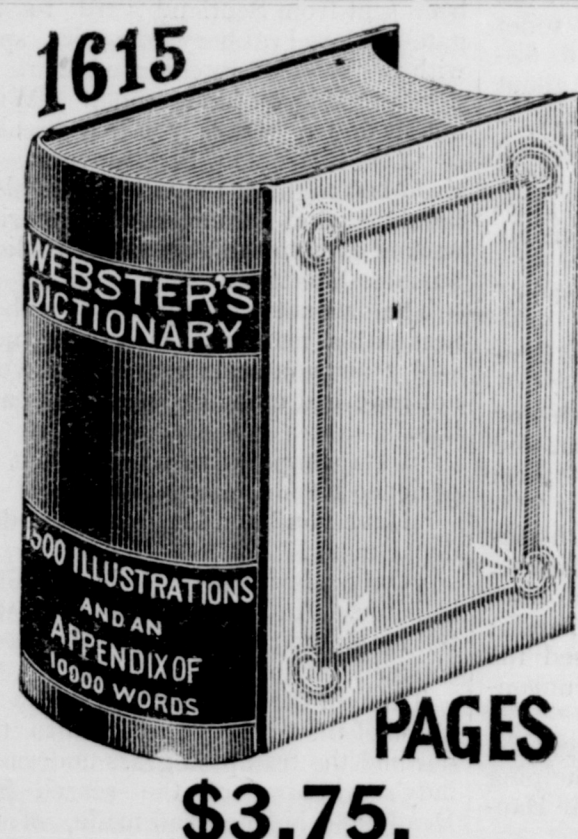
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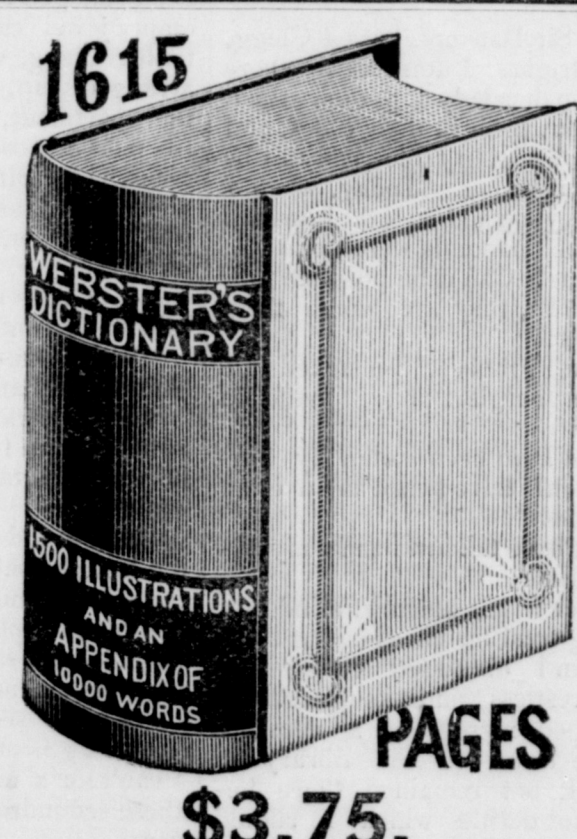
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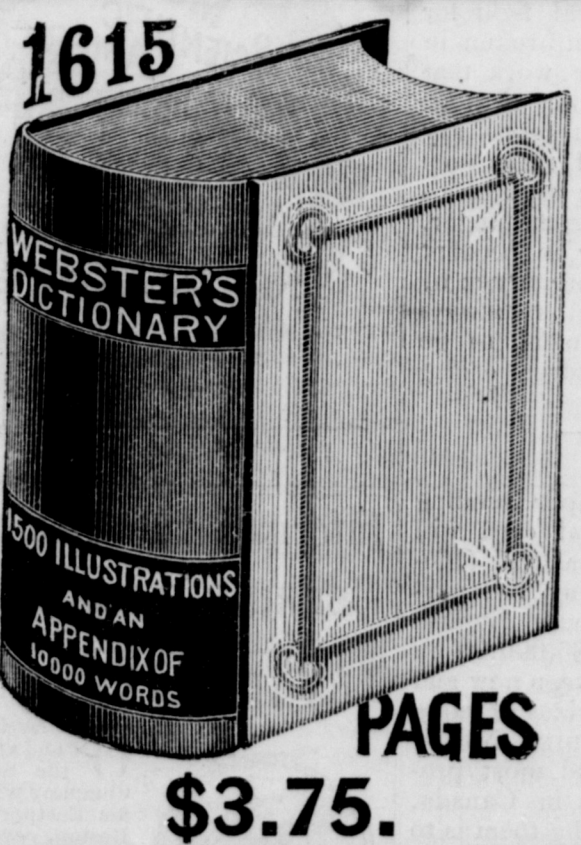


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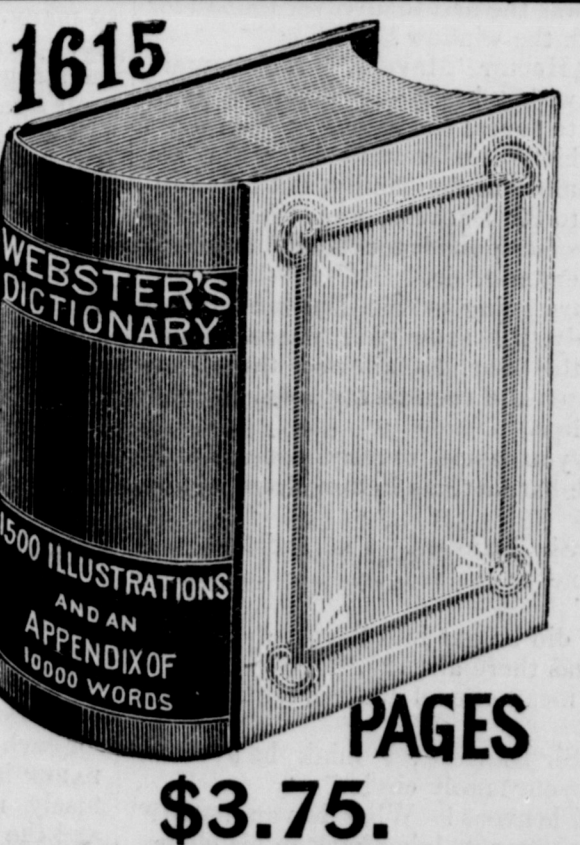


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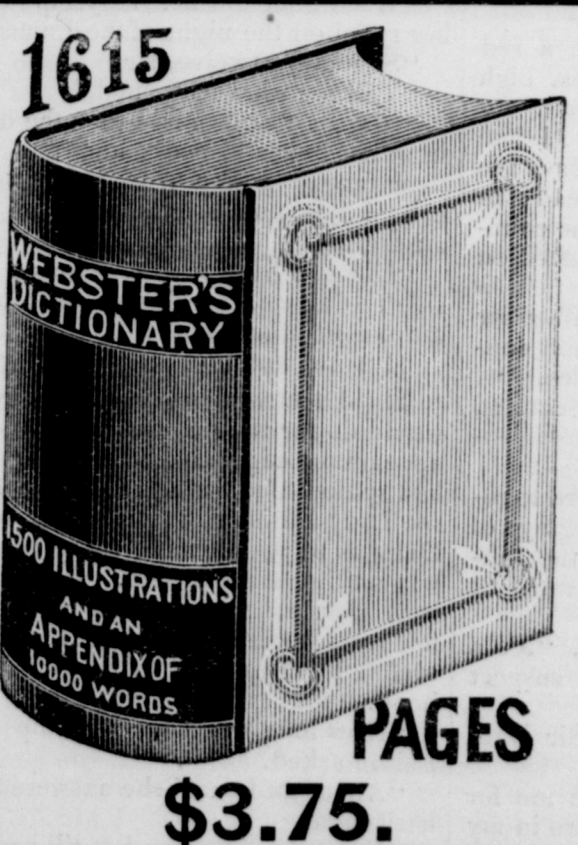
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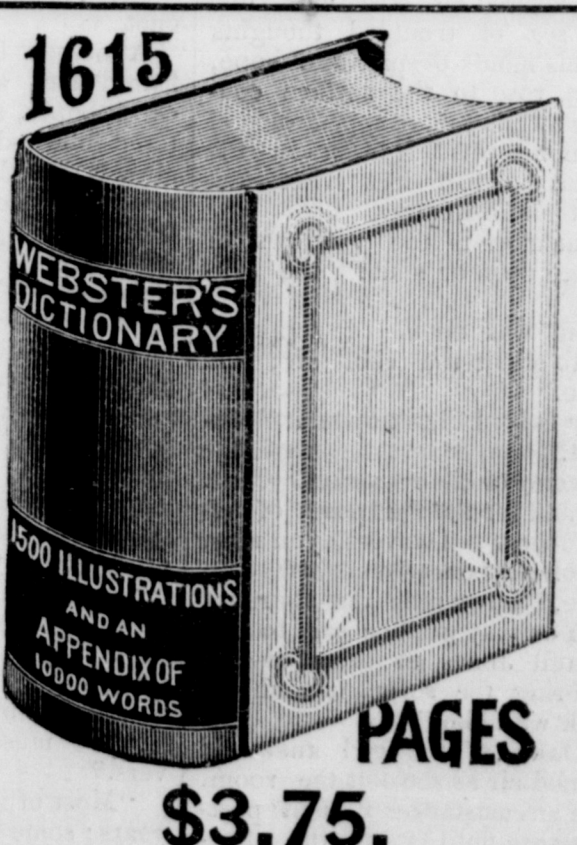
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