

sical conditions, the climate, the fauna and flora alike forbid it, and this has not been done. Man lives in less hospitable regions now than when the Trenton gravel was laid down; the climate at the close of the glacial period was not more severe than that obtaining to-day in the Arctic circle. The reindeer, musk-ox, seal, and walrus sustain man to-day in Arctic America, and why should they not have done so in the Delaware valley, when a prominent feature of this fauna, as their bones in the gravel testify, they once were? There is an Arctic flora in existence now; so why not here in the distant long-ago of Glacial times; and forests, we know, can flourish at the very edge of a glacier.

This whole matter is not so exclusively a geological question as the votaries of that science declare. The archæologist has this surface soil and the sand and gravel beneath it clearly within the range of his domain, and he is no archæologist whose training falls short of ability to study intelligently the history of these superficial deposits.

As yet, concerning the gravel deposits of the Delaware valley, the geologists have merely put in a denial, which should not weigh against the careful researches of those who have given years to the study of this subject. What is needed in these overcrowded latter days is a proof that palæolithic man is an impossibility. When this is forthcoming, and not until then, will the student of early man in America haul down his flag.

As to the present controversy, here is the whole matter in a nutshell:—

I.

The stones are inspected,
And Holmes cries "rejected,
They're nothing but Indian chips"
He glanced at the ground,
Truth, fancied he found,
And homeward to Washington skips.

II.

They got there by chance
He saw at a glance
And turned up his nose at the series;
"They've no other history,
I've solved the whole mystery,
And to argue the point only wearies"

III.

But the gravel is old,
At least, so I'm told;
"Halt, halt!" cries out W. J.,
"It may be very recent,
And it isn't quite decent,
For me not to have my own way."

IV.

So dear W. J.
There is no more to say,
Because you will never agree
That anything's truth
But what issues, forsooth,
From Holmes or the brain of McGee.
CHARLES C. ABBOTT, M.D.

Water Rattlesnake in Captivity.

In your issue of Nov. 11, there was an interesting account by R. W. Jones of a rattlesnake that would not eat. I had the care, this year, of a water rattlesnake (*Crotalus adamanteus*), which, after some trouble, I persuaded to eat. It was sent from Florida to the Toronto Natural History Society, in September, 1891; and at first we intended to put him in a cellar for the winter, and let him hibernate; but I thought a warmer place would be more likely to suit him, and so leave was obtained from the authorities to keep him in a large conservatory at the horticultural gardens. He had a glass-sided case to live in, 3 feet long and 15 inches wide, and was himself about 3 feet long.

I put a bull-frog in with him one day, but he took no notice of it, beyond just touching it with the tip (or tips, to be quite correct) of his tongue. I then tried him with a brown rat (he had

now been about three months without food); when he saw the rat he grew quite excited, and struck at him twice. I waited about half an hour, expecting the rat to die, but the bite seemed to have no effect, so I left the rat in the case. As this was a Saturday, I did not see him again until Monday, and I then found the rat still alive; but with a bad bite on the side of its head, and the snake had two holes, made by the rat's teeth, through its rattle. The gardener told me that they had a fierce battle on Sunday afternoon, but they now seemed each afraid of the other. I killed the rat, and left the body in the snake's case, but he would not eat it. I next put a white mouse in his case, but of this he took hardly any notice. About the end of March I shot two goldfinches, and placed the dead bodies in his case. On visiting him again in a day or so, I was delighted to find that one of the goldfinches had disappeared. After this I supplied him frequently with dead birds, and about once a month he condescended to eat; but the birds he eat were always small ones, such as goldfinches, chipping sparrows, and warblers; he never ate any as large as the English sparrow or purple finch, several of which I put in his case; and he never fed while any one was looking at him.

His rattle was permanently injured by the rat's attack, and ever after sounded only a feeble and subdued kind of alarm. He changed his skin once during the summer; and, after the change, the tints of the beautiful diamond pattern on his back were extremely bright and vivid.

I could not get him to feed at all after the beginning of August, and he died in October, 1892, having been in captivity for a little over a year, for the first six months of which he went entirely without food. I gave him a shower-bath occasionally, which he seemed to enjoy, and was, I think, more ready to feed after he had been well moistened in this way.

I have now another and larger specimen of this rattlesnake to take care of. It was received from Florida in October last, and is quartered for the winter in a very warm and comfortable green-house. He has not as yet eaten anything, but I may be able to send you, next year, some report as to how he behaves.

I. B. WILLIAMS.

Toronto, December.

Intelligence in the Lower Orders.

SOMETHING over a year since a young lady of my acquaintance had an experience with a beetle, which, I think, showed a very marked degree of intelligence in the insect; and, as such instances are somewhat rare, I venture to send you an account of it.

This beetle was a specimen of *Pelidnota punctata* Linn., which was given to her in September. At first she kept it in a small box, feeding it with grass, leaves, and small pieces of fruits, such as peaches, pears, etc. Occasionally she would give it a drop of water to sip. It would sometimes bite a little out of a leaf, would eat the fruits, and would take water eagerly.

From the first she would take the insect in her fingers several times a day and stroke or caress it, also putting it to her lips and talking to it all the while she handled it. When she put it to her lips it would brush its antennæ over them with a gentle, caressing motion.

When she left her room she would shut the "buggie" up in its box. One day, about two weeks after she received it, she was called out suddenly and neglected this precaution. She was absent a considerable length of time, and when she returned the insect was not in its box nor anywhere to be seen. Fearing that she might injure it, she stood still and called "buggie, buggie," when it came crawling from its retreat toward her.

After this, she would frequently leave it free in the room when she went out, and when she returned, if the insect was not in sight, she would call it, and it would crawl or fly to her. As this was continued, it would more and more frequently fly to her instead of crawling, until at last it flew nearly every time it was called. When it came in this way, she would put it to her lips or to her nose, and the insect would appear to be pleased, moving its antennæ gently over her lips or taking the end of her nose between them and touching it with a patting motion.