

Correspondence.

Snake Swallowing Its Eggs.

To the Editor of the Scientific American:

Noticing the article in March 8 issue of your valuable paper concerning "Curious Facts about Snakes," I am prompted to pen an experience of my own in same field, which occurred a few years ago near Mystic Bridge, Conn.

While picking whortleberries—must have been in July or August—attention was called to the exposed side of a large adder in the dry oak leaves.

The head and most of the body were hidden. After being killed by a stone's blow, her unusual size in circumference prompted further investigation. Inside were found a number of "wee" snakes—a dozen or so—quite well developed, which, though possessing power to advance slightly by quick wave motions, yet gave unmistakable signs of having been swallowed from the nearly developed egg itself with entire contents. Portions of the yolk, unseparated from the little ones, coupled with the fact that one of the small snakes showed far less development than its brothers and sisters, (in fact, was either deformed or needed a longer period wherein to absorb the sustenance from the yolk still constituting a large part of its organization), led me unhesitatingly to the conclusion that the instinct of the mother had led her, at about the season of development, to the place where the eggs were deposited, and she had then swallowed their contents. Growth and development would have there continued till the offspring first saw light at the mother's throat. What more natural than that the little fellows find their way back down the throat for protection!

Imagination is not being tested when recording this observation. I am assured, if similar observation has never been recorded previously, future search will prove it true.

Perhaps all kinds of snakes may not do thus. The matter is worth some trouble and search.

JOHN S. PALMER.

Texarkana, Ark., March 11, 1884.

Snake Swallowing Its Young.

To the Editor of the Scientific American:

In your issue of the SCIENTIFIC AMERICAN March 8, in an article on "Snakes," the fact of "mother snakes" swallowing their young is spoken of as something unusual.

Some years since while hunting I came across a striped harmless snake about 3 feet long, common in this part of Iowa, with two small snakes protruding from her mouth about two inches. On closer observation five others were discovered near her head on the ground, each about five inches in length. My curiosity being aroused I drew near, when she immediately proceeded to pick up each of the other five by the tail singly, at the same time swallowing down the two whose heads projected from her mouth, until she swallowed them all, usually there being two on the way down at the same time.

Disturbing the last two by presenting a weed to their heads, they bid me defiance by darting forth their little red tongues, showing all the spirit of their kind, and slowly retreated down their mother's throat. On killing the mother snake about a dozen in all were found in her throat and stomach.

J. G. RATCLIFFE.

Waukon, Iowa.

WATER BASIN IN ARIZONA.

The dry, hot southwest winds devastating successively New Mexico, Western Kansas, Nebraska and portions of Dakota suggest the idea whether it would not be possible to create an artificial basin or body of water somewhere in New Mexico or Arizona, the evaporation from which would mitigate the effects of the hot winds in the States aforementioned.

Some years since I read that Gen. Fremont had some such scheme projected. Has it ever been proved to be practical?

J. G. R.

Interesting Facts about Platinum Wire.

To the Editor of the Scientific American:

In your issue of March 22, you state that platinum wire fine enough for cross hairs of telescopes is too weak to handle successfully. Dr. Wollaston published in 1813 (Philos. Trans.) an account of his making the wire $\frac{1}{18400}$ inch diameter. Our Mr. E. W. Arms has, since the fall of 1876, handled large quantities of it, as shown in hundreds of transits and levels now in use. The size ordinarily used for field transits is platinum wire of 0.003 inch, covered with silver to 0.1 inch; this drawn to 0.003 inch will leave the platinum, when the silver is dissolved off, to be 0.00009. This wire will sustain a weight of four grains or a ball of wax the size of a pea.

W. & L. E. GURLEY.

Troy, N. Y., March 21, 1884.

Spring Floods and the Sewers at Cairo, Ill.

To the Editor of the Scientific American:

Our city, as many of your readers know, is surrounded by levees to protect us against overflow during high water. The flood month is February, and we then have generally the heaviest rains of the year, which sometimes raise the water inside the levees; during this time our sewers have to be closed to a rather uncomfortable height. Now, during high floods, a current of water passes our sewer outlets at the rate of from 5 to 7 miles per hour. Could not one of your many readers suggest through your valuable paper

some way how to best make use of this current, to relieve us of the water gathered inside the levees? Has such a thing as a siphon or suction created by the current been used anywhere?

Our highest water rises to about 15 feet above the sewer outlets.

JNO. A. MILLER.

Cairo, Ill., March 20, 1884.

The War against the Patent Laws.

To the Editor of the Scientific American:

The interest which is now exciting the discussion upon the importance of scrupulously guarding our patent laws against the machinations of a combination of railroad sharks, rule or ruin grangers, and our ignorant and reckless Congressmen, may eventually be the means of casting a ray of light into the dark corners of the craniums of some of these would-be figure heads. It is said figures won't lie, yet they may be so arranged as to completely misrepresent the truth.

In regard to the best interest of the railroads, it is susceptible of demonstration that they are only conniving at their own ruin in their efforts to destroy the protection now given to inventions.

We have just returned from a tour on which we visited some of the most extensive manufactories of agricultural machinery at Dayton and Springfield, Ohio, where unusual opportunity was offered for comprehending the character and magnitude of the business there conducted in the manufacture of every machine used by the farmer, for cutting the furrows, pulverizing the soil, depositing the seed and fertilizers, cultivating, harvesting, and thrashing the crops.

And although it has required half a century of the slow but patient, unceasing efforts of hundreds of thousands of earnest workers, morally and physically, to bring these machines up to their present state of perfection, the substance of the whole history may be condensed into the space of a nutshell and expressed by a few words—the stimulus offered by the patent laws, giving ownership to the inventor in his own creations, did it all.

Of the vast manufactures of Springfield, the first in order in magnitude and productive capacity are the Champion Mower and Reaper Works, of which there are three distinct plants. The Whiteley, Fassler & Kelley, the most recently erected, claims first rank, presenting a continuous and uniform frontage parallel with the railroad track for eleven hundred feet, and nearly as far at right angles, being in form of a hollow square.

The external aspect of the massive structure will suggest to any one that something more than usual is going on within.

It will suffice to say that the combined operations of the three works result in turning out a complete reaping machine in the space of one and two-thirds of a minute, during the ten working hours of the day.

An inspection of the wilderness of mowing machinery shows that it has come from the most reputed builders of the country. The entire equipment, almost, of the machine shop is from the Pratt & Whitney Co., Hartford, Conn., and the woodworking from equally distinguished manufacturers, which is a guarantee of the superior character of the work turned out by these factories.

When fully completed, these works will supply from the ore all the steel used in their works.

The old and original Champion Works, which stand near the heart of the town, are hemmed in so that no expansion is possible, while the third works, at Lagonda, a mile out, are on a scale corresponding with the first.

The trains of cars which are continually being loaded with these machines to be distributed throughout the States and Territories, while many train loads are taken to the shipping ports to go to foreign countries, should convince any one that the railroad owners were having a good thing of it, and it would be expected that their sympathies were with these manufactories, but, strange to have to say, such is not the truth.

These works constitute but a fraction of the productive power of Springfield. In the article of horse rakes, Springfield and its neighbor town, Dayton, annually aggregate some sixty-five thousand machines; and allowing one hundred and ten machines to the carload, nearly six thousand cars are required to convey this special kind of goods to their destination, while many train loads are shipped to foreign countries.

To bring the raw materials to these factories furnishes employment to a much larger number of cars, to say nothing of the thousands of tons of coal and other articles consumed directly and indirectly by the army of operatives in and about these works.

And when we take into the account the combined products of these factories, and their dependence upon the transportation facilities of the country, and the endless sources of revenue it affords to them, it would seem nothing short of madness on the part of railway owners to in any way restrict their protection under the patent laws.

In further illustration of the fostering influence of patents, since last harvest three new plants for three large industries have sprung up in the town of Springfield, on locations selected to secure unrestricted bounds for expansion from a future growth of solid business. These men have been induced to invest their capital from the successful operations of the old establishments, which have been producing the same line of goods.

But the first step was to secure the control of patents

which would protect them in the business, and thereby render the investment secure; and without this reliance upon the plighted faith of the government or its servant these millions of investment would not have been made. This single instance will illustrate the history of the thirty odd manufactories at Springfield; those of Dayton as well.

Now, the inevitable result which must follow the criminal course being pursued by the railroad corporations and our blind and reckless Congress will be to give the privilege to whoever chooses to take these perfected machines for patterns, go further West, where the supply of materials is cheap and inexhaustible, set up business, and in a short time supply the customers of our factories at lower prices than it will be possible for them to do; and the railroads will have only the business of hauling the finished work, and will be relieved from hauling the raw materials, which now is worth more to them than that of transporting the goods.

Can any candid, reflecting, well-disposed man look these facts squarely in the face, and then say there is no truth in them?

It is acknowledged by all civilized people, that he who has succeeded in supplying the means with which his fellow men can accomplish a greater amount of work, and that in a better and cheaper way than it was possible to accomplish the same previous to the use of his method, is the benefactor of his race; while he who attempts without authority to take that from his fellow man which is rightfully and justly his own property, is acknowledged by all civilized people to be a thief.

S. L. DENNEY.

Strasburg, Lancaster Co., Pa., March 26, 1884.

Hand and Machine Made Putty.

How the two kinds are made, and the difference between them, is related by an old painter to the ubiquitous reporter as follows:

The best is made of raw linseed oil and whiting, the latter being simply chalk, ground in a mill like flour. It comes out with a fine flint grit in it. Before making putty of it, a few old fashioned men who believe in making the best of everything, wash the grit out. The fine flour is then dried. If it is not dried perfectly, it takes up more oil than is desirable or profitable. From 500 to 600 pounds—about 15 per cent. by weight of raw oil to 85 per cent. of whiting—are put in a chaser and thoroughly mixed. The chaser is an annular trough, 10 feet in diameter. From a vertical shaft in the center two arms extend, on the ends of which are heavy iron wheels that rest in the trough. When the shaft revolves, the wheels chase each other around the trough. When mixed, it is packed in bladders for convenience in handling. The adulteration of putty is effected by mixing marble dust with whiting. It costs about a quarter of a cent a pound, and whiting costs twice that. Paraffine oils, at from 20 to 30 cents a gallon, are used instead of linseed oil at 60 cents. The marble dust makes the putty gritty, and the cheap oil makes it sticky. Cheap putty is decidedly cheap. Putty in bulk, wholesale, is worth \$2.12 a hundred pounds. The other window glass cements run from \$1.40 to \$1.75. They are dear at that. They take longer to put on and longer to dry. Putty is neither imported nor exported. A lot was brought over a long time ago, but that was when oil was very high. The whiting comes from England.

A superior article of putty is made, however, by the further addition of white lead in oil, japan varnish, and a small quantity of turpentine, which makes a hard cement that does not shrink, and when dry can be rubbed down with pumice stone or dusted with sand paper, so smoothly will it cut. Even in the common sorts of putty it is well to use some white lead if a hard putty is desired.

"Creditable and Serviceable Modern Cruisers."

In such language does the President refer to the vessels now approaching completion, as a step in the "reconstruction of the navy." The severe criticisms made upon the plans of the new cruisers are not ignored, but the "character, experience, knowledge, and skill" of the designers are thought to weigh a good deal against these criticisms, and the President thinks it would be "an act of national imprudence" to relinquish or postpone, on account of the criticisms, the building of substantial additions yearly to our present navy. The finishing and armament of the monitors already under way is likewise urged upon Congress, as are also the recommendations of the Gun Foundry Board for promoting the production of material for heavy cannon at private steel works, and that two government gun factories should be established—all as being demanded by "considerations which concern the national safety and honor."

The Keely Motor Stuck Again.

Keely's first week of solitary confinement with his motor, for the purpose of "focalizing and adjusting the vibrators," has resulted, not in the single revolution which is to demonstrate his final triumph, but in another postponement. We learn from one of our contemporaries that the stockholders met in Philadelphia on the 26th, and waited with great excitement for a report from Keely. He sent word that the "focalizing" was making rapid progress, that he was too busy to leave it even for a moment, and that they could fix a date for exhibition on or before April 10. Then the stockholders separated, cheerful and hopeful as usual.