# New Inventions.

### New and Ingenious Tooth Puller.

Dr. J. C. Burch, of Evansville, Indiana, has invented one of the most ingenious and effective instruments for pulling teeth stumps that we have ever seen, and we believe it is the best for the purpose in use. The cause which brought into energy the faculty to make this instrument, was the great number of decayed teeth which he had been called upon to extract—teeth of which nothing was left but the stumps. He found great difficulty with the old instruments to rout out such troublesome old friends, although very ill-liked ones, and he had recourse to his head to conceive something to meet the case—for doctors and lawyers have their cases, and very serious ones too, sometimes. The new instrument has a neat small pad, forming one side of the jaw, while the other is of the hook-bill form, like the old kind, and has a lateral motion. The shoulder and lever handle of the hook-jaw has a joint in it which is operated by an inside spring, so that when the two handles are brought together like those of a pair of pincers, the joint spoken of throws the hook jaw into and grasps the tooth at once, while the cushion is made to rest on the jaw, and gives a firm fulcrum for action. The operator jerks the decayed rascal tooth from its seat with the utmost ease. The Doctor has found this instrument to operate even beyond his expectations. It is no trouble either to patients or the operator—we mean the drawing bad teeth.

### Improved Grain Drill.

Messrs. L. Bickford, and Henry Huffman, of Macedon, Wayne Co., N. Y., have invented some valuable improvements in Grain Drills, for which they have taken measures to secure a patent. There are a number of movable tubes or spouts which conduct the grain from the hopper to the ground. These spouts can be raised singly, so as to use only one or two, or any number desired. They can also all be raised at a moment by a single lever, which turns a roller shaft, to which each single spout is attached by a collar.

The hopper which receives the grain has a slide in the bottom of it, into which are cut a number of slots through which the grain passes into a small channel, in a revolving roller above the tubes, and which convey the grain from the hopper to the said tubes. This roller, has large channels made in it, for large grain and small channels for smaller grains. The slide spoken of in the hopper, by moving the slot over the large channels, will allow the large grain to pass down, but if it is desired to drill in small grain, the slide is just pushed in a little farther, so as to have the slots above the small channels in the roller, when at that time the large channels will be closed by the same slide. The revolving conduit roller is fixed below the hopper, and is made to revolve by having a spur wheel outside, gearing into a spur wheel on the axle of the moving wheel of the machine. The main axle and the conduit roller can be connected by gearing wheels, so as to give the roller any speed desired, and thus drop the seed at any required distance, one foot, two or three, as may be wanted in the drills.

### New Swingle-tree for Carriages.

Mr. James Adam, of Norfolk, Va., has invented a safety spring swingle-tree, which is so arranged that both traces can be slipped off at the will of the driver and the horse detached in a moment from the vehicle, thus obviating any danger from the animal's taking fright and running away.

### Balloon Navigation.

It is said that a balloon has been constructat Paris which obeys the helm, and can be driven against the wind by its conductor. This machine has made several voyages around the Hippodrome, and has been made to turn in every direction, but its progress in the air has not yet been tested, and the utmost secrecy is observed as to the means employed.—[Exchange. [Old invention and a no go.]

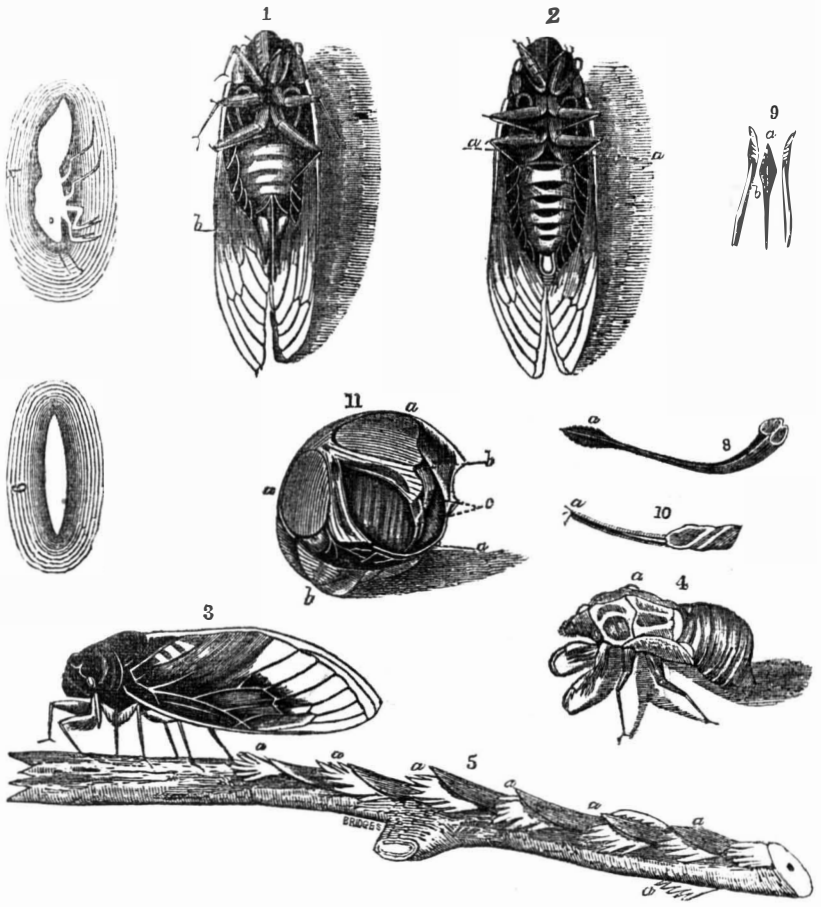
### To Clean Rusted Iron Work.

Cover over the work with oil and let it stand for five or six hours. Then wash it off with strong soap-suds and a good brush. The brush must be long in the bristles. Iron work should never be left wet any length of time.

### Restoration of Sight.

An Italian peasant, born blind, of a blind mother, was not long since successfully couched by a Venitian surgeon. The patient had previously been able to discriminate between the day or night and he immediately called the white light, and the black dark, but could not distinguish red from yellow or blue from green. When first taken to a window and shown the blue sky above and the living world below, the man though a poor half witted creature was overpowered by his emotions and actually swooned.

## THE AMERICAN LOCUST "CICADA SEPTEMDECIM."




An article in number 23, page 170, contains some errors of fact and inference which ought to be corrected. I have made this remarkable insect a special object of study for seventeen years, beginning in April, 1834. During the spring and summer of that year I made a careful examination of its anatomy and habits, from the perfect larva state to the descent of its progeny, in July and August, into the earth.

The accompanying drawing is made from a painting I then had executed by an excellent artist, from the living subjects in all their various stages.

Figure 1 is a female of the natural size; *b* is the *ovipositor*. Figure 2 is a male of the natural size; *a a* are scales covering the membranes of the large cavities. Figure 3 is a side view of the natural size. Fig. 4 is a shell of the pupa; *a* is the opening in the back through which the insect escaped. Figure 5 is a section of the Mock Orange limb, with the excavations made by the female (*a a a a a a*). Figure 6 is an egg magnified 10 diameters. Fig. 7 is a young insect magnified 10 diameters. Fig. 8 is the *ovipositor*, magnified. Fig. 9 are parts of the *ovipositor* separated and magnified. Fig. 10 is the rostrum or snout magnified, the capillaries, (*a*). Fig. 11 is a section of the chest of the male at the upper ring; *a a* are the posterior walls of the large cavities within the chest; *b b* are the external musical membranes or drums; *c* are the two muscles; *d* the capacity of the chest.

I have frequently found the larvæ since 1834, in the ground where they went down in that year, but in no instance have I found them as stated by the writer above alluded to, "in comsact cells, with no outlet except that in immediate contact with the roots." I find them from one to two and a half feet from the surface of the ground, in oblong cells of about an inch in the shortest and two or three inchest in the largest diameter, the cells generally being horizontal. These cells, however, appear to be *movable*, that is, the insect digs the earth from one end and packs it in the other. The object of these movements seems to be to obtain fresh vegetable matter on which to feed. The insect obtains its food from the small vegetable radicals that everywhere pervade the fertile earth. It takes its food from the surface of these roots, the moist exudation (like animal perspiration), for which purpose its rostrum or snout is provided with three exceedingly delicate capillaries, or hairs, which it projects from the tube of the snout, and sweeps them over the surface, gathering up the minute drops of moisture. This is its only food. The mode of taking it can be seen by a good glass. It does not puncture the bark, because it has no instrument for such a purpose; the inference intended to be drawn that they puncture the roots of pear trees, and thus cause the death of the tree, is therefore erroneous. It is also an error to say, "should a tree on which these larvæ have been feeding be cut down, the insects perish for want of wood." If the author of the article referred to will find a place where trees or shrubbery grew in 1834, and which were cut down, the land cleared, and even houses built upon it sixteen years ago, she will find the locusts there *now*, and will see them emerge from that ground about the 25th of next May, just as undoubtedly as she will from under the very tree in which they were originally deposited.

The tract of country that will be occupied this year by the locusts extends from the Patapsco river, in Maryland, to Bucks County in Pennsylvania, and from the Delaware river to the middle of the range of the Allegheny Mountains, including Bedford County, Pa.

The insects leave the ground about the 20th of May, in Maryland, to the 25th of May in Pennsylvania.

There is another locust district this year in Georgia and South Carolina—a small tract embracing a portion of these States, and another small one in Mississippi. I have the location of thirty-four different districts, occupying fourteen of the seventeen years. The other three years are no doubt occupied in the western wilds of North America, between latitude 43½° N., and 29° S., beyond which parallels I have not been able to hear of them. The locusts will appear about New York in 1860; this district extends to the Connecticut river, East, and as far North as Washington Co., N. Y., West to Amsterdam in Montgomery Co., and a large portion of New Jersey.

I have seen specimens of the insect from a great number of districts, and can find not the slightest difference in them.

In the whole range of natural history there is nothing more strange than the fact,—which has been established with as much certainty as any fact in astronomy ever was,—that a little insect not as large as the smallest ant shall pass into the ground and remain there seventeen years, and then emerge in the form of a comparatively large insect; or, that a certain tribe of insects shall appear here in immense numbers—numbers almost equal to those of the sands on the sea shore—exactly once in seventeen years, always in the same month, almost on the same day and same hour. It is indeed wonderful, but it is nevertheles true.

The music, song, or sound, produced by the myriads of insects in a warm dry day from about the 25th of May to the middle of June, is wonderful. It is not deafening as many describe it,—even in its height it does not interrupt ordinary conversation. It seems like an atmosphere of wild monotonous sound, in which all other sounds float with perfect distinctness. I never could distinguish anything like the word "Pharaoh" in these sounds. After you have become satisfied with the novelty of this music, which will be in a day or two, it becomes exceedingly tiresome and doleful, and to many very disagreeable. To me it was otherwise, and when I heard the last note on the 25th of June, the melancholy reflection occurred—shall I live to hear it again?

Probably the first indication many persons will have of the approach of the locusts, will be the industry with which they will find the hogs rooting up the ground in the woods and fields. It is a great festival for them. And as soon as the insects appear above ground, chickens, turkeys and all poultry will also have their feast. So fond are the fowls, birds, pigs &c., of these insects, that they will scarcely touch other food during the locust season. This has a remarkable effect upon all hen's eggs laid after the locusts appear—their yolks are nearly white. The chickens become very fat, and of fine flavor. Even the little wren will be seen flying off with a locust in its mouth, and all the insectivorous birds then have a great festival.

From the 1st to the 20th June, all shrubbery of value should be protected, either by covering it with cheap gauze, or, in case of pot plants, by keeping them in the house. About the 15th of June they commence depositing their eggs About the 25th of June the old locusts will have disappeared altogether.

In conclusion, people ought not to be alarmed. The W on its wings does not indicate *war*, nor the E England. The "sting" of the locust never killed any body, for the best of all reasons—because it *has none*. The insect has neither means of offence or defence; and all the stories that are told of children being killed by their sting or bite are fablous. If death ever was produced, or any less injury when locusts were present, some other cause effected it.

I have given the public such a picture of this most interesting insect, as will enable any one to observe them understandingly at the approaching season.

The accompanying drawing [represented by our engraving above] is a fac-simile of them in all their stages. Yours,

GIDEON B. SMITH, M. D.

[This description of the "Seventeen Year Locust," will be of great interest to our readers, and especially to those of them—and the number is not small—who are residents in other countries than our own. The communication requires no comment.—[ED.

### Eratum.

The direction of Mr. Child, in last week's Sci. Am., in describing his invention, said "Putnam Co., Ohio;" it should have been "*Illinois*," not Ohio.

### Notice.

We have quite a number of communications on hand, and a number of useful books, &c., to notice, all of which are unavoidably left out this week.