

Science and Art.

How the Solar System was Developed.

"Professor Mitchel's lecture, last evening, was an explanation of Herschel's theory of the manner in which the Universe was created. He stated the leading laws and facts in support of this theory in a most masterly and attractive manner. According to this hypothesis, our solar system was at first a mass of gaseous matter, with a diameter of at least six thousand millions of miles, being the diameter of the orbit of the planet Neptune. By the dissipation of heat and the force of gravitation, in the lapse of ages, it has gradually diminished to the dimension of our sun, the central body, with a diameter of less than a million of miles. The planets were thrown off from the central mass in its rotation from time to time, and the satellites were in like manner thrown off from the planets in their rotation and condensation. Altogether it was one of the most instructive and successful lectures we ever listened to."—[Manufacturers Journal, Providence, R. I., Feb. 6th.]

[The above theory is not satisfactory, although its author, La Place, (not Herschel,) was one of the most distinguished astronomers that ever lived; still the most profound men sometimes advance erroneous ideas, and pursue strange fancies, like the philosopher Boyle, spending years in search of a perpetual motion.]

It is our opinion that gas was not the primitive, and is not the most natural condition of matter. The evidence of this opinion is to be found in the very small amount of matter existing in a gaseous state in the universe, in comparison with the vast amount of solid and fluid matter.

Science Increasing Longevity.

Dr. Buchanan, in a recent lecture before the Mechanics' Institute at Cincinnati, said that, in the latter part of the sixteenth century, one half of all who were born died under five years of age; the average longevity of the whole population was but eighteen years. In the seventeenth century one half the population died under twelve years. But in the first sixty years of the eighteenth century, one half of the population lived over twenty-seven years. In the latter forty years, one half exceeded thirty-two years of age. At the beginning of the present century, one half exceeded forty years; and from 1838 to 1845 one half exceeded forty-three. The average longevity at these successive periods has been increased from eighteen years in the sixteenth century up to 43.7 by the last reports.

This increase in the duration of life has been caused by improved medical science, improvements in the construction of houses, drainage of streets and superior clothing.

Search for the Course of Ocean Currents.

In the bays of the northern coasts of Spitzbergen, Iceland and Greenland, is found much floating wood, which, after having wandered a long time in the sea, impelled by currents, is at length thrown on shore.

Last year the French frigate *Reine Hortense* made a voyage in the northern Atlantic, and at various points threw overboard painted floats made of pine wood, in the form of short cylinders. In each of these were several holes, enclosing sealed vials containing a descriptive account of the vessel, the latitude and longitude when the float was thrown into the sea, &c. The holes in these cylinders were covered with pitch, and over that with pieces of sheet lead.

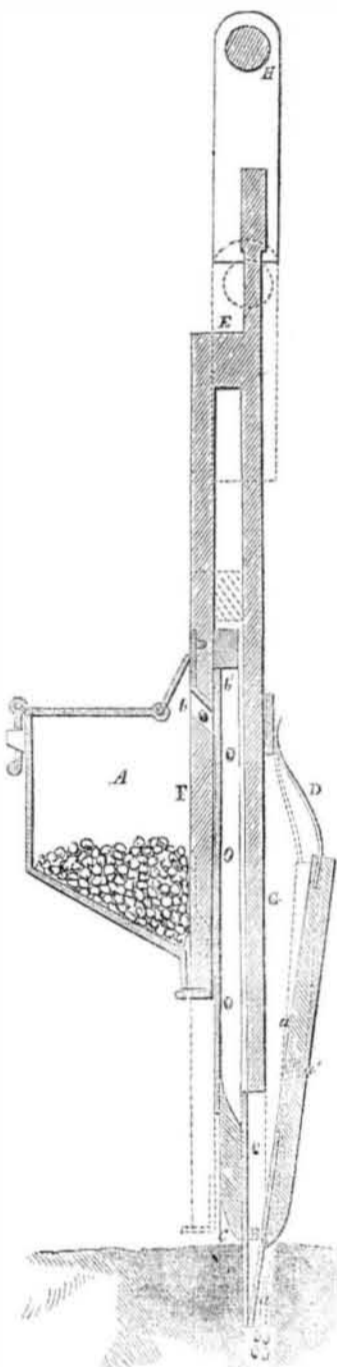
The Paris Academy of Sciences calls upon all scientific bodies in Europe and America to report to that Institution, any case where and when one of these floats has been found by the commander of a vessel. We hope that every American captain who finds one of these floats, will, as soon as possible afterwards, report the circumstance to Lieut. Maury, at the National Observatory, Washington, D. C.

Coating Iron with Copper.

Birmingham, Eng., has patented and put in use, to a small extent, a method of plating, which, it is affirmed, induces the metals to adhere much more ten-

aciously than any other. It is, in short, that of simple soldering. The sheet iron is "pickled," or thoroughly cleaned in diluted acid, as usual, and covered evenly with brass solder, and this again with borax. The sheet thus prepared after being in a furnace for only about ten seconds, is coated so firmly that it may be rolled, stamped, and manipulated in every desirable manner.

Sherman & Mason's Hand Planter.



This figure is a vertical section of a new Hand Planter for corn and other seed, a patent for which was issued to N. C. Sherman & J. Mason, of Hazel Green, Grant county, Wis., on the 23d of December, 1856.

The improvement in this planter consists in providing a double plunger, composed of two bars which unite at their upper ends into one head or handle, but whose lower portions are separated, one of the bars being made to pass through a seed box and lift a certain quantity of seed therefrom at each stroke, while the other bar serves to open jaws at the foot of the implement for the escape of the seed, and also to press the seed into the ground.

A is the hopper for containing the seed; it may be made of wood or sheet metal. B is a jaw plate attached to its lower end; this plate has a flange, a, at each end, forming a three sided box. C is a moveable vibrating jaw formed of plate metal, and attached to a wooden shank that is pivoted between the flanges, a, at a', and having a spring, D, bearing against its upper end. This spring, when not acted upon, or overcome by any extraneous power, keeps the lower end of jaw C against the lower end of the stationary jaw B—the jaw C being a little shorter than B. The plunger, E, is formed of two bars, F and G; one (F) passes through the hopper, A, and the other (G) works between the two jaws, B C.

When the plunger is forced downward to its fullest extent, the bar, G, has its lower end

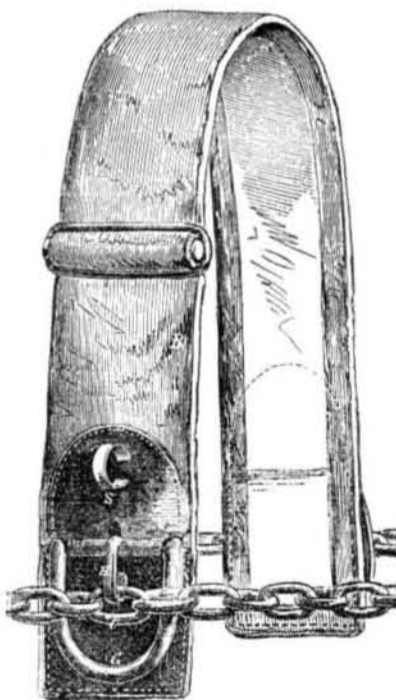
flush with the ends of the jaws, or extending a very little beyond them. There is an oblique opening, b, in bar F—this bar works closely against the side of the hopper. An opening, b', is also made through the inner side of the hopper. The aperture, b, in consequence of its obliquity, forms a pocket for containing the seed, so that when the bar, F, is pushed down it enters among the seed or corn in the hopper, and is filled or charged, and when it rises the seed in the pocket is drawn up above the mass of the seed, and then falls down through the passage, b', to the mouth of the jaws below the plunger bar, G, and is ready to be discharged. By regulating the pocket, b, a greater or less amount of seed may be deposited. c is a gauge bar attached to the stationary jaw, B. To the upper part of the plunger a handle, H, is secured.

Operation.—The hopper of the implement being filled with corn or other seed, the operator carries it in his hand through the field to be planted. In each spot where the seed is to be planted, the implement is held over it, the plunger, E, drawn upward; the seed with which the pocket b is filled then falls down through the way, b', to the lower part of the jaws, which are kept closed by the spring, D; the jaws are then thrust into the loose soil until the gauge, c, strikes the surface and arrests their further descent. The plunger bar, G, now comes down, forces open the jaw, C, which turns on its pivot, a', and thrusts the soil to the one side, forming a pocket for the seed, which drops into it, and then the bar, G, presses it into the ground, as represented in the dotted lines in the figure. As the jaws are of a wedge shape, they enter the soil easily, and do not carry any dry soil from the surface with them. The seed is, therefore, always deposited in the moist soil, which ensures its more certain and speedy germination.

This construction of a hand seed planter allows its parts to be made of light material. It is very simple in all its arrangements, and its parts are few, and, apparently, not liable to get out of order.

More information may be obtained respecting it by letter addressed to the patentees.

Back Band Hook for Plow Harness.



This figure is a perspective view of an improved Hook for Plow Harness, for which a patent was issued to Noah Warlick, of Lafayette, Ala., on the 28th of last October.

The figure represents the harness band doubled, as laid over the back of a horse, with one of the harness chains in the high hook, and the other chain in the off hook, thus supporting the chains of the traces. The ordinary hooks for this purpose turn outwards, by which arrangement the chain often slips off, is liable to catch objects with which it comes in contact, and is apt to gall the side of the horse.

This improvement consists in constructing the hook turned inward to the band, and surmounting it with a guard, the upper arm of which is the axis of the hook.

B is the band which passes over the back

of the animal, and it has a hook, H, (one not seen,) on each end. G is the hook guard; it is made of metal, and its upper side is enclosed in the leather, S, of the strap, and turns in it. The hook is secured to, and is hung loosely on this suspended arm of the guard, which forms its axis, and is represented turned inwards, and inserted in one of the links of chain, C, which passes over the face of the guard, G. The guard prevents the chain from rubbing the sides of the animal, while the rise and fall of the chain in turning at the ends of the furrows will not cause it to slip from the hook. It is also evident that the hook thus arranged is not liable to catch bushes and other objects in the field.

More information may be obtained respecting it by letter addressed to Mr. Warlick.

A small volcano is stated to have broken out in the mountains in Loudon county, Va. It has thrown out stones and black smoke to a great height.

Literary Notices.

BLACKWOOD'S MAGAZINE.—"Old Ebony" for January just re-published by Leonard Scot & Co. No. 64 Gold street, this city, is a capital number. It contains "The Athelings," part 8; "European Politics," and other seven articles—tales and essays. This magazine maintains its old reputation for originality and ability.

THE AMBROTYPE MANUAL.—This is a practical treatise on the art of taking positive photographs on glass, to which is added the method of taking photographic pictures on paper, by N. G. Curless, practical photographer and manufacturer of chemicals for the art. This treatise is clear, comprehensive and practical throughout, and deserves a wide circulation. It has reached a third edition. Published by J. M. Fairchild & Co., No. 109 Nassau st. this city.

THE BIBLIOTHECA SACRA.—The first number of the above-named Theological Quarterly, for this year, contains six original and able papers. The first is by M. S. Storr, Jr., D.D., of Brooklyn, on "Character in the Preacher," is scholarly and yet clear and simple. An article on the "Mosaic Six Days of Geology," by Prof. Barrows, of Andover, exhibits great candor and research. This Review is published by Warren F. Draper, Andover, Mass., is conducted with eminent ability, and has a world-wide reputation.



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