Scientific.

The Caloric Ship Ericsson.

It was stated a short time since, that a ship was building in New-York, to which a new motive power was to be applied, viz., caloric. A New-York letter in the *Transcript* gives some interesting particulars in regard to this new power, and the ship which is to be propelled by it. The correspondent says:

"On Saturday I visited the engine manufactory of Messrs. Hogg & Delamater, of this city, and had the privilege of inspecting Ericsson's caloric engine of sixty horse power, while it was in operation. It consists of two pairs of cylinders, the working pistons of which are 72 inches in diameter. Its great peculiarities consist in its very large cylinders and pistons, working with very low pressure, and in the absence of boilers or heaters—there being no other fires employed than those in small grates under the bottoms of the working cylinders.

"During the eight months that this test-engine has been in operation, not a cent has been expended for repairs or accidents. It is a beautiful and imposing object, and conveys the idea of power and symmetry much more impressively than the largest steam engine that I have ever seen.

"The leading principle of the caloric engine consists in producing motive power by the employment of the expansive force of the atmospheric air instead of that of steam, the force being produced by compression of the air in one part of the machine, and by its dilatation by the application of heat in another part."

The great advantages claimed for this improvement, are the saving in fuel, and its entire safety. A ship carrying the amount of coal that the Atlantic steamers now take for a single trip could cross and re-cross the Atlantic twice without taking in coal. A slow radiating fire without flame is required, and this can be best supplied by our own anthracite. An explosion cannot happen to the caloric engine—the only result from neglect will be the stoppage of the machinery. If these great desiderata are really found, and can be successfully applied, the world may look for another revolution in ocean navigation equal to that produced by the application of steam.

The Ericsson is a beautiful model, 2200 tons burthen, and will be ready for sea by October. The machinery is described as of the most perfect kind. The cylinders are 108 inches in diameter—72 inches larger than those in the Collins steamers.—*Boston Journal.*

Galvaniz.d Iron.

Mr. R. Hunt, in the course of a lecture on mining, delivered at the London Institution, said,—"Considerable attention had been lately paid to the process of galvanizing iron,—a discovery which promises to be of the highest utility. Mr. Nadsmyth, of Patricroft, near Manchester, and Mr. Owen, two gentlemen connected with the government committee on the subject of metals, had lately been making experiments, the result of which would indicate that, by giving iron a coating of zinc, or by combining zinc with iron in its manufacture, it would be much improved, preserved from oxidizing, and rendered less brittle; and that old plates of iron—such, for instance, as had been used for the bottoms of ships—with an admixture of zinc, still possessed its original qualities; and, in fact, iron re-melted from such plates was found to be of a better quality than at first. These experiments had, indeed, excited great attention to the important question, whether iron would not be improved by a small portion of zinc. Tinned iron, exposed to the atmosphere, very soon became oxodized; but in iron protected by zinc although exposed to all weathers, there was no change. Indeed, a piece made bright remained so after being placed in water several months. The zinced iron, which was now used in roofing large buildings—as, for instance, the new Houses of Parliament—had the quality of becoming incrusted with a coat of oxide of zinc, which prevented any further destructive effects from exposure to the atmosphere."

Why A Nettle Stings.

The common large nettle is known by grievous experience to every one, though, perhaps, you have never yet inquired whence the pain arises from touching it. The sting is not, like a pin or needle, solid throughout; but it is hollow at the centre, and perforated at the point; and when touched it is not only sharp enough to pierce the skin, but also is so constructed as to inject a particle of poisonous fluid into the wound it makes, and this is the source of the pain which follows. The wound itself is so minute that it would scarcely be felt, but the poison irritates, inflames, and causes the well known pain alluded to. The plant, the small species of which stings the most severely, is covered all over with hairs; but by using a microscope or magnifying glass, you may perceive that these are not all of one kind, some being perforated, which are the stings, while others are not. Each sting stands upon a pedestal, and this pedestal performs the office both of a gland and a poison bag. It is cellular and spongy within; the sting is placed in its top, and may be moved by a light pressure to either side, or round in a circle; it seems to stand, as it were, on a universal joint. When a body touches its point, the base is pressed down into the spongy pedestal, and the poisonous fluid rushes up through the tube of the sting, and flows out of the terminal aperture.

A Horse's Foot.

The foot of the ass is one of the most ingenious and unexampled species of mechanism in animal structure. The hoof contains a series of vertical and thin laminae of horn, so numerous as to amount to about five hundred, and forming a complete lining to it. In this are fitted as many laminae belonging to the coffin bone; while both sets are elastic and adherent. The edge of a quire of paper inserted leaf by leaf into another will convey a sufficient idea of the arrangement. Thus the weight of the animal is supported by as many elastic springs as there are laminae in all the feet, amounting to about four thousand; distributed in the most secure manner, since every spring is acted on in an oblique direction. Such is the contrivance for the safety of an animal destined to carry greater weights than those of his own body, and to carry those also under the hazard of heavy shocks.

The Human Voice.

How many singers are aware that they have an eight-feet organ pipe in their throat? Says a writer in the *Puritan Recorder*:—

"How small is the diameter of the human throat, and how short its measure! Yet, it will give the same note with the pipe of an organ *eight feet in length!* and the valve which covers it, and plays with electric swiftness (imitated by the reed of the organ) is, as all know, a very little thing; yet with the contraction and expansion of the throat, it will utter a scale of seventeen degrees; and divide every whole tone into an hundred parts!"

Cure for Cancer.

A Mr. Benson, of Franklin county, Tenn., has been cured of a cancer by the following means. He procured a peck of cleaned oak bark, by first cutting off the rough outside, and put it into a vessel containing about two gallons of water, which he boiled over a slow fire until the ooze became quite strong, when he strained it through a cloth to remove all the particles of the bark, then he put it into a clean vessel, and simmered it over a slow fire, till it came to the consistency of molasses when it is fit for use. It is then spread upon a piece of silk or other soft rag, and applied to the diseased part. He used about two plasters each week, until the cancer was removed and the wound healed. He says it is not painful, but believes it an infallible remedy.

Vegetable Poisons.

Mr. Editor:—I saw in the last season's paper inquiries for what would cure vegetable poison, and cures prescribed; some of one thing and some of another, and one of buckwheat flour and vitriol, which is no doubt good. I feel disposed to give you a recipe of my own, which would have paid me eight years ago for five numbers of your paper in a single season. It is as follows:—First scratch as long as it feels good, then take wild salandine, (some call it jewel weed,) crush it and rub it on until it smarts well, then go to bed, and you will be ready for a good day's work the next day. It may need a few applications afterwards, but not many.—*New England Farmer.*

In Fits.

If a person fall in one, let him remain on the ground, provided his face be pale, for should it be fainting or temporary suspension of the heart's action, you may cause death by raising him upright or bleeding; but if the face be red or dark-colored, raise him on his seat, throw cold water on his head immediately, and send for a surgeon and get a vein opened, or fatal pressure on the brain may ensue.

Small Pox.

Dr. Field, of Wilmington, Del., says that one tablespoonful of good brewer's yeast, mixed with two tablespoonfuls of cold water, and given from three to four times a day to an adult, and in less quantities to children, is a cure for the small pox. This disease is very prevalent at the present time. The remedy above stated may be of use to persons affected with it who have not consulted a physician.

The Farm.

The following article, from the pen of one of the best Farmers in Plymouth County, is taken from *The Old Colony Memorial*, and is worthy of consideration:

BARN CELLARS.

Mr. Editor:—Barn cellars have become so common and so generally praised both by scientific and practical farmers, it is doubted whether the many think there are any evils attending them, or any precautions necessary to protect stock and their food against unhealthy influences. The barn cellar is justly described as a favorable situation for composting manure; and in exact proportion to its excellence for this purpose it will send forth unhealthy influences to the animals and hay situated over it. Would any man in the exercise of reason, direct a zinc spout into the cellar of his house, or doubt the injurious influences of the air thus produced on the health of the inhabitants, and on their provisions. Very similar cases to those such an arrangement would produce, are continually ascending from the barn cellar; the animals kept there may not be quite so sensitive as human beings, nor quite so particular concerning the purity of their food, but pure air and clean food are no less necessary to their health, than that of man. It may not be possible to construct a barn in such a manner that composting manure under it will not produce some injurious effects. Much evil, however, can be avoided with seasonable and suitable precautions. The flooring of the barn should be double and made tight as possible. Before hay is put on the floor a coating of plaster or lime should be applied. Lime will do very well under the hay, but under the cattle plaster should be placed and often renewed. Plaster should also be scattered in the cellar often as the manure is worked over. With these precautions the air of a barn with a cellar under it may be kept in a tolerably healthy state. And to this amount of labor, we suppose, all owners of barn cellars ought to submit, in view of personal interest and the health and comfort of those animals to which they are bound to be merciful.

Pembroke, March 26th, 1852. M. A.

It is the dictate of reason, that these "gases" if allowed to penetrate the building *must* injure both the cattle and their food.

"A merciful man is merciful to his beast," and ought in every way to consult its comfort.

LIQUID MANURE FOR FRUIT TREES.

It is a fact satisfactorily established with me that there is nothing connected with a farm in the line of fertilizers, that appears to produce a greater effect on fruit trees than liquid manure. Thousands of gallons of this invaluable fluid are wasted on farms annually, which, if applied to the trunks and roots of trees, would benefit them ten times more than it would cost to make an application of the liquid. No one need apprehend any danger in applying it, for it bites not, nor does it cause any serious derangement of the olfactory region. Where trees have been injured by drought, and have been set out heedlessly, it produces a most striking effect, causing a circulation of the sap at once astonishing. It is unquestionably preferable to solid manures, for its effect is almost immediate. It penetrates the pores of the earth and comes in contact with the roots and fibres as soon as an application is made; whereas, in applying coarse manure, such is not the case, it requiring several showers to wash the strength of it out.

The manner in which I have applied it is to dig a cavity around the body of the tree, and then fill up with the liquor. In a few moments, it will be absorbed ready for replacing the dirt, thus preventing evaporation. The introduction of a pailful around the trunk of a tree, at an interval of a month during the growing season, is sufficient to produce the most astonishing results. An extraordinary growth immediately commences and shoots are forced out in a few weeks, truly astounding both in length and size. I have tried soap suds and am convinced that they do not contain all the invigorating and enriching powers common to liquid manure. It must be acknowledged, however, that soap suds are efficient, causing a rapid growth when judiciously applied, but not equal in my opinion to the liquid.

TO RAISE CUCUMBERS OR SQUASHES.

Take a large barrel, or hogshead, saw it in two in the middle, and bury each half in the ground even with the top. Then take a small keg and bore a small hole in the bottom. Place the keg in the centre of the barrel, the top even with the ground and fill in the barrel around the keg, with rich earth, suitable for the growth of cucumbers.—Plant your seed midway between the edges of the barrel and the keg, and make a kind of arbor a foot or two high for the vines to run on. When the ground becomes dry, pour water in the keg in the evening—it will pass out at the bottom of the keg into the barrel, and rise up to the roots of the vines and keep them moist and green. Cucumbers cultivated this way will grow to a great size, as they are made independent both of drought and wet weather—in wet weather the barrel can be covered, and in dry the ground can be kept moist by pouring water in the keg.

CURRANTS AND GOOSEBERRIES.

It is to be presumed that not one in a hundred understands the simple process of cultivating either currants or gooseberries, although it has been detailed in all the horticultural books with which the world abounds. Thousands of persons, with every appliance for success, are still content to live without a plentiful supply of these delicious, healthy, and cheap luxuries, merely because they have not thought of the matter. They have a few stinted bushes set in the grass, with three-fourths of the stocks dead, and then wonder why they do not bear in abundance.

There is not a more beautiful shrub growing than the currant, properly propagated; and the same may be said of the gooseberry. Cultivators who pay any attention to the subject, never allow the root to make but one stock, or, as the English say, "make them stand on one leg"—thus forming a beautiful miniature tree.

To do this you must take sprouts of last year's growth, and cut out all the eyes, or buds, in the wood, leaving only two or three at the top; then push them about half the length of the cutting into mellow ground, where they will root, and run up a single stock, forming a beautiful symmetrical head. If you wish it higher, cut the eyes out again the second year. I have one six feet high. This places your fruit out of the way of hens, and prevents the gooseberry from mildewing, which often happens when the fruit lies on or near the ground, and is shaded by a superabundance of leaves and sprouts. It changes an unsightly bush, which cumbers and disfigures your garden, into an ornamental dwarf tree. The fruit is larger, and ripens better, and will last on the bushes, by growing in perfection, until late in the fall.

The mass of people suppose that the roots make out from the lower buds. It is not so—they start from between the bark and wood, at the place where it was cut from the parent root.—*Vermont Chronicle.*

Wash for Fruit Trees.—All fruit trees will bear a wash of ley. For apple trees, the rule is one pound of potash to a gallon of water. But all potash is not equally strong, therefore another rule is observed. Let not the ley be stronger than enough to just bear up an egg. Such ley will make soap.

Other trees may be washed with weaker ley. The bark of the pear, plum, peach and cherry, is more thin and tender, than the bark of the apple tree.—*Ibid.*

Hilling Corn.—In cultivating Indian corn, I am confident that "hilling is a disadvantage to the crop. Of this I became fully convinced several years ago on contrasting its results with those of the opposing system, in a field belonging to a friend. Since then I have instituted a variety of experiments, and have found that the least surface is most eligible, and that in all modifications of soil and temperature, corn which is not "hilled up" is the most vigorous, less injuriously affected by drought, and produces more and sounder corn —*Germantown Telegraph.*