intercourse, be a drunkard; for that will render you wholly unfit for it.

"If you are resolved to kill yourself, be a drunkard, that being a sure mode of destruction.

"If you would expose both your folly and your secrets, be a drunkard, and they will soon run out as the liquor runs in.

"If you think you are too strong, be a drunkard, and you will soon be subdued by so powerful an enemy.

"If you would get rid of your money without knowing how, be a drunkard, and it will vanish insensibly.

"If you would have no resource, when past labour, but a workhouse, be a drunkard, and you will be unable to provide any.

"If you are determined to expel all comfort from your house, be a drunkard, and you will soon do it effectually.

"If you would be always under strong suspicion, be a drunkard; for, little as you think it, all agree that those who steal from themselves and families will rob others.

"If you would be reduced to the necessity of shunning your creditors, be a drunkard, and you will soon have reason to prefer the by-paths to the public streets.

"If you would be a dead weight upon the community, and 'cumber the ground,' be a drunkard; for that will render you useless, helpless, burdensome, and expensive.

"If you would be a pest to society, be a drunkard, and you will be avoided as infectious.

"If you do not wish to have your faults reformed, continue to be a drunkard, and you will not care for good advice.

"If you wish all your prospects in life to be clouded, be a drunkard, and they will soon be dark enough.

"If you would destroy your body, be a drunkard, as drunkenness is the mother of disease.

"If you mean to ruin your soul, be a drunkard, that you may be excluded from heaven.

"Finally, if you are determined to be utterly destroyed, in estate, body, and soul, be a drunkard, and you will soon know that it is impossible to adopt a more effectual means to accomplish your—*end*."—*Rowland Hill.*

Scientific.

Curiosities of Science.

The following article is well worth the attention of our readers; it is part of an address by Professor Mapes, before the Mechanics Institute of New York.

I mention these facts only in hope of showing you that there is pleasure in studying the sciences, and when we come to natural history, we shall find the study of that, still more amusing. The animal and vegetable worlds are well worthy of observation. Probably you all know what is meant by a cycloid. If we make a spot on the periphery of a wheel travelling on a plane, the figure which that spot describes is a cycloid. Now there is no figure in which a body can be moved with so much velocity and such regularity of speed, not even the straight line. Mathematicians discovered this not many years ago; but nature's God invented it. When the eagle pounces upon his prey, he describes the figure of a cycloid.

A globe passed in water or air, in moving meets with resistance, and its velocity will be retarded. If you alter the globe to the form of an egg, there will be less resistance, which mathematicians studied for many years to discover; and when they had discovered it, they found they had the form of a fish's head! Nature had "rigged out" the fish into just such a figure.

The feathers of birds, and each particular part of them, are arranged at such an angle as to be most efficient in assisting flight. The human eye has a mirror on which objects are reflected, and a nerve by which these reflections are conveyed to the brain, and thus we are enabled to take an interest in the objects which pass before the eye. Now, when the eye is too convex, we use one knd of glasses to correct the fault; and if it be not convex enough, or if we wish to look at objects at different distances, we use glasses of entirely another description.

But as birds cannot get spectacles, Providence has given them a method of supplying the deficiency. They have the power of contracting the eye, of making it more convex, so as to see the specks which float in the atmosphere, and catch them for food; and also of flattening the eye to see a great distance, and observe whenever any vulture or any other enemy is threatening to destroy them. In addition to this they have a film or coating, which can be suddenly thrown over the eye to protect it; because at the velocity with which they fly, and with the delicate texture of their eye, the least speck of dust would act upon it as a penknife thrust into the human eye. This film is to protect the eye, and the same thing exists to some extent in the eye of the horse. The horse has a very large eye, very liable to take dust. This coating in the horse's eye is called the haw, or third eyelid, and if you will watch closely, you may see it descend and return with electric velocity. It clears away the dust and protects the eye from injury. If the eye should catch cold, the haw hardens and projects, and ignorant persons cut it off and thus destroy this safeguard.

You all know, if you take a pound of iron, and make of it a hollow rod a foot long, what weight it will support; a weight many times greater than before. Nature seems to have taken advantage of this also, long before mathematicians had discovered it, and all the bones of animals are hollow. The bones of birds are large, because they must be strong to move their large wings with sufficient velocity; but they must also be light in order to float easily upon the air. Birds also illustrate another fact in natural philosophy. If you take a bag, make it air-tight, and put it under water, it will support a large weight, say an hundred pounds. But twist it or diminish the air in it, and it will support no such weight. Now, a bird has such an air-bag. When he wishes to descend, he compresses it at will, and falls rapidly; when he would rise, he increases it, and floats with ease. He also has the power of forcing air into the hollow parts of the body, and thus to assist his flight. The same thing may be observed in fishes. They also have an air-bag to enable them to rise or sink in the water, till they find their temperature.

If they wish to rise they increase it; if they wish to sink they compress it, and down they go. Sometimes the fish, in sinking, makes too strong an effort to compress it; then down he goes to the bottom, and there remains for the rest of his life. Flounders and some other fish have no air-bag: and so they are never found floating on the surface, but must always be caught at the bottom.

In this way are the principles of science applied to almost everything. You wish to know how to pack the greatest amount of bulk in the smallest space. The form of cylinders leaves large spaces between them. Mathematicans labored hard for a long time to find what figure could be used so as to lose no space; and at last found that it was the six-sided figure, and also that a three plain ending in a point, formed the strongest roof or door. The honey-bee discovered the same things a good while ago. The honey-comb is made up of six-sided figures and the roof is built with three plain surfaces coming to a point.

If a flexible vessel be emptied of air, its sides will be almost crushed together by the pressure of the surrounding atmosphere. And if a tube partly filled with fluid, be emptied of air, the fluid will rise to the top. The bee understands this, and when he comes to the cup of the tall honeysuckle, and finds that he cannot reach the sweet matter at its bottom, he thrusts in his body, shuts up the flower and then exhausts the air, and so possesses himself of the dust and honey of the flower. The feet of flies and lizards are constructed on a similar principle, and they thus walk with ease on glass or ceiling. Their feet are so made as to create a vacuum beneath them, and so they have the pressure of the atmosphere fifteen pounds to the square inch, to enable them to hold on. The cat has the same power to a less extent.

Plants require the sunlight, and some flowers turn themselves towards the sun, as it travels round from east to west. The sunflower does this, and so does a field of clover. The facts, though we have not yet got at the reason of them, are still extremely interesting.

The gastric juice is worthy of remark. It is a tasteless, colorless, inodorous, limpid fluid like water, and is adapted, in different animals to different purposes. In the hyena and other carnivorous animals, it will dissolve dead flesh. These creatures then live upon other animals and even bones are soluble in their gastric juice while it will not dissolve animal food.

Man cannot alter the nature of an animal by changing its food. It will still belong to the family. In this particular, bees are better instructed. When they lose their queen bee—which is an entirely different animal from the working bee—if you present another to them within twenty-four hours they will not accept of her nor obey her. They prefer taking an ordinary grub, before it has become a flyer, and feeding it in a particular way—and when it leaves the grub state it becomes a queen bee, and they always suffer themselves to be governed by her.

The habits of ants are extremely curious. We all have heard of ant houses sometimes twenty feet in diameter, filled with halls and rooms of great size and strength. These and beaver dams are constructed upon strictly mechanical principles.

Glue Made Water-proof.

A mechanic in Albany has just made an experiment which promises to be of much advantage by making glue perfectly waterproof, and having the property of drying immediately after its application. His method, we learn, is first to immerse common glue in cold water, until it becomes perfectly soft, but yet retaining its original form; after which, it is to be dissolved in common raw linseed oil, assisted by a gentle heat, until it becomes entirely taken up by the latter, after which it may be applied to substances for the adhesion to each other, in the way common glue is applied. It dries almost immediately, and water will exert no action upon it. It is unnecessary to say for how many valuable purposes in the arts this application may be used. For cabinet makers it is important, as mahogany veneers, when glued by this substance, will never fall off by exposure to the atmosphere. In ship building it will probably answer a valuable purpose, as it has infinitely more tenacity than common glue, and becomes impervious to water.

Chain of Being.

Bitumen and sulphur form the link between earth and metals; vitriols unite metals with salt; crystallization connects salts with stones; the amainthus and lythopites form a kind of tie between stone and plants; the polypus unites plants to insects; the tube-worm seems to lead to shells and reptiles; and the eel forms a passage from reptiles to fish; the anasnigra are a medium between fishes and birds; the bat and flying-squirrel link birds to quadrupeds; and the monkey equally gives the hand to the quadruped and to man.—*Scientific Jour.*

Rust.—A most excellent varnish to prevent rust is made of one pint of fat oil varnish, mixed with five pints of highly rectified spirits of turpentine, rubbed on the iron or steel with a piece of sponge. This varnish may be applied to bright stoves, and even mathematical instruments, without injuring their delicate polish.

The Farm.

Varieties of Soils.

Some of the most valuable improvements in modern agriculture proceed from the discovery, that all plants do not exhaust from the soil in which they grow the same ingredients or component parts of it; and that no two plants of a different kind abstract the same proportion of each ingredient.

Hence, beyond all question, it is established: 1st. That every kind of soil is, in its natural state, fitted for the production of some one or other of the thousand plants that cover the earth; and 2d. That the addition to it, by human labour, of those ingredients or substances of which any soil is deficient will fit it for the production of plants that require those ingredients.

Careful examination has also shown that silicious or flinty matter not only constitutes a large proportion of all soils, but also the largest ingredient in the composition of oats, wheat, Indian corn, rye and barley. It also demonstrates that certain other substances, of which lime is always one, are contained in these and other plants, a large proportion of it entering into the composition of clover and corn.

From these facts, it follows that the addition of lime to soils from which it is naturally absent, must confer upon them the power to produce those useful plants, especially corn and clover, so far as unproductiveness of them was caused by its absence.

The same may be said of potash, soda, magnesia and certain acids, all of which are ingredients in most of the useful plants.

In this view of our soils, the presence of limestone in quantities, in any quantity, is second in value to that of no other mineral; not even excepting coal or iron.

For, as the productions of the farmer are indispensable to persons in every business, and as the proper application of lime to the soils which are destitute of it will convert them into fruitful agricultural districts, the value of limestone must be beyond that of any mineral we possess.

Nor does this good effect alone follow the addition of lime or any other single substance of which a soil happens to be deficient. The mixture of entire soils with each other often has the same result. For instance, the carting of a certain proportion of the surface of rich boggy or bottom land upon upland, or the reverse, the addition of pure sand to stiff clay fields, or the application of any other soil to one of an entirely dissimilar character, has generally the same beneficial effect.

In all these cases, the applied soil being dissimilar from that to which it is added, the chances are, even without the certainty of a scientific analysis, the productive substances have been obtained, and consequently that productiveness will be increased.

In this way there is a great truth in the remark, that in the hands of a judicious farmer, almost every farm contains, within its limits, the means of its own fertilization.

Colour of Houses.

The Horticulturist for May opens with some much needed advice concerning the colour of country houses; which, if it could receive the attention it deserves, we should in a few years see harmony and beauty in our rural districts, where the eye is now constantly offended with glaring and offensive colours. Scarcely anything can be more unpleasant to the eye, than to approach the sunny side of a bright white house, in one of our brilliant mid-summer days. Nature, full of kindness to man, has, it is well suggested, covered most of the surface that meets his eye in the country with a soft green, so refreshing and grateful to the eye. His habitations appear to be colored on the opposite principle, and one needs in broad sunshine to turn his eye away to relieve them by a glimpse of the agreeable shades that everywhere else pervade the landscape. Hence landscape painters studiously avoid the introduction of white in their buildings, and give them some neutral tint—one which contrasts agreeably with the prevailing hues of nature around them. It is laid down as a rule among artists that the colour of all buildings in the country should be of those soft and quiet shades, called neutral tints, such as fawn, drab, gray, brown, &c., and that all positive colours, such as white, yellow, red, blue, black, &c., should always be avoided.—*Newark Adv.*

Can Horses Scent Water in the Ground?—It has been observed by travellers who have driven cattle on the "pampas" or plains of South America, that they could scent water for a considerable distance, and also would indicate the coming of rain, by their snuffing in the air, some time before it fell, as if they smelt it coming in the distance.

It is also said by those who have travelled on the deserts of Africa on camels, that this animal could scent water at a great distance.

A friend was relating to us, the other day, as a fact, that horses had a similar faculty.—He states that if a horse be shut up in a pasture where there is no water, he will at certain times of the day make it a practice to stand in those situations where water is nearest to the surface, and thus indicate the best place for digging for it.

Have any of our readers ever observed this trait in the horse?—*Maine Farmer.*

Heaps.—There is one kind of heaps on a farm that is a perfect nuisance—heaps of stones in mowing fields, left for a convenient opportunity to be removed—which seldom or never arrives, and so they remain to encumber the ground. For such jobs take the time—make it, if you cannot find it—haul off the stones at the time of picking them, and make a finish by depositing them in some proper place.

Corn.

We do not think that corn requires a deep furrow, yet we agree that people do not generally plough deep enough for the permament good of the land: Rye may do better for a year or two with a light furrow—and so may almost any plants with the exception of root crops.

The Englishman is decidedly a travelling animal. At this moment there are 75,000 in various parts of this country, which is considerably less than previous to the revolution, when it exceeded 150,000.—[Paris paper.