wisdom. For what is life but the "flower of the grass,"—or the dream of the night? and what is the endeavor to banish eternity from the mind, but the desire to have a pleasant dream for a night?—*Cecil.*

CHRIST'S IMAGE.—To have the image of Christ, is practically to say, in our measure, as he said, "I came not to do mine own will but the will of him that sent me." It is, when an occasion of self-denial and taking up our cross is presented,—to take up our cross and to be self-denying. It is in the very midst of contradiction and reviling, to be meek and lowly, and forgiving as he was. It is to have the graces of the spirit in exercise.—*Mrs. Hawkes.*

IDOLATRY.—People in general are apt to affix gross ideas to idolatry. If a man goes to China he is astonished at the horrid and absurd things that are the objects of their worship; he is not aware that his own idol is his *cargo.—Cecil.*

Scientific.

METALS.

The following table comprises a list of the metals generally known, with their relative weight, as compared with that of water, which is allowed to weigh 1000 ozs. per cubic foot.

Platina,	22,000
Gold,	19,000
Mercury,	13,000
Lead,	11,352
Silver,	10,474
Copper,	8,788
Brass,	8,395
Wrought Iron,	7,778
Cast Iron,	7,207
Zinc,	7,190
Tin,	7,091
Antimony,	6,700

EXPERIMENTS.—Melt any quantity of lead, in the open air, and keep it melted until it becomes red lead, and it will be found to have increased in weight ten per cent.

Expose a small quantity of mercury to a moderate heat, in contact with atmospheric air, and it will slowly combine with oxygen, and become red oxyde; but, by an increase of heat, the oxygen will be driven off, and the metal will be restored.

Place together on a shovel, a little sulphur and mercury, and make the whole red hot over a strong fire, and the beautiful paint, called vermillion, will be produced.

Melt on a shovel, or in a ladle, a small quantity of zinc, and when it becomes red hot, it will burn with a full flame, and become apparently consumed: but the smoke will descend in flakes of beautiful fine oxyde of zinc.

To a little diluted sulphuric acid, add as many fillings of copper as the acid will dissolve; afterwards evaporate the solution by a moderate heat, and beautiful blue crystal of sulphate of copper will be formed.

Into a mixture of nitric and muriatic acid, put a few leaves of gold; they will almost instantly disappear, showing a perfect specimen of metallic solution.—*Scientific American.*

A Fountain of Fire.

Into a common tumbler or large wine glass, put fifteen grains of finely granulated zinc and six grains of phosphorous, cut into small pieces. On account of the exceeding inflammability of the latter ingredient, it should be cut amongst water, with a pen-knife or other sharp instrument, avoiding all unnecessary friction. In another vessel mix one drachm, (about a tea-spoonful and a half,) of sulphuric acid, with twice that quantity of water. Now, taking these ingredients into a dark room, pour the diluted acid upon the phosphorous and zinc. Effervescence will immediately ensue, occasioned by the evolution of phosphoretted hydrogen gas, which fluid, by its superior levity, ascending in the air, will spontaneously take fire; brilliant jets of bluish flame will now dart from the whole surface of the liquid; the liquid itself, and the air around it, will be illuminated, and curling columns of luminous smoke will ascend from the fiery mixture, producing an appearance applicable to its appellation—a fountain of fire.

The experiment is very beautiful, which beauty is enhanced by its simplicity.

Zinc may be granulated by melting it, and while fluid, pouring it from a height of about five feet into cold water.—*Phil. Sat. Cour.*

Useful Receipe.

I send you below, Messrs. Editors, a receipt for making a composition which will render wood entirely incombustible. It is very simply prepared, and quite easy of application, and being used the same as applied to the floor underneath stoves would be an excellent precaution.

Take a quantity of water, proportioned to the surface of wood you may wish to cover and add to it as much potash as can be dissolved therein. When the water will dissolve no more potash, stir into the solution, 1st, a quantity of flour paste, of the consistency of common painter's size; 2d, a sufficient quantity of pure clay to render it of the consistence of cream.

When the clay is well mixed apply the preparation as before directed to the wood; it will secure it from the action of both fire and rain. In a most violent fire, wood thus saturated may be carbonated, but will never blaze.

If desirable, a most agreeable color can be given to the preparation by adding a small quantity of red or yellow ochre.

It might also be useful for you to mention in your paper, especially at this season, of high winds, that a handful or two of sulphur thrown on the fire when a chimney is burning out, will almost instantaneously extinguish the flames.—*Buff. Com. Adv.*

HOW TO COLOR GREEN.

Put two ounces of indigo into four ounces of the oil of vitrol, (sulphuric acid) about two weeks before you want to color, shaking it well every day. When ready for coloring make a strong decoction of black oak bark, sufficient to wet what you design to color. To this add one pound of alum to every eight pounds of yarn, stirring it till the alum is dissolved. Then pour in of the mixture of indigo, till you think you have it of the shade desired. Then put in the yarn, as much at once as you can; let it be over the fire for twenty-five or thirty minutes; then lift it out to air for a few minutes, and then return it to the kettle and let it simmer three hours, stirring it frequently. The two ounces of indigo will color about ten pounds of yarn deep green, and five pounds pale green. The pale green is managed in the same way, only use a less quantity of indigo.

The above receipt is taken from the Ohio Cultivator, and it is different from the too many published, because it is a correct one. Fustic, however, will answer as well as oak bark. The indigo must be powdered and of the best quality.

VINEGAR DESTRUCTIVE TO INSECTS.—It should be generally known, that a small quantity of vinegar will generally destroy immediately any insect that may find its way into the stomach, and a little salad oil will kill any insect that may enter the ear.

The Farm.

Importance of Knowledge to the Farmer.

"A lack of mental culture and discipline is the most serious impediment to the diffusion of agricultural science among the farmers.—Its language to them is an unknown tongue. Hence, the most sublime truths in the economy of nature are shut out from the popular understanding. It is feared that this will ever be the case, until schools designed to teach these branches of learning, which the practical farmer greatly needs but does not possess, are established and maintained throughout the United States."

The investigation of scientific men have proved, beyond the possibility of a doubt, that by the analysis of the soil, and the desired crop, and a wise reference to atmospheric influences, we are as competent to adapt food to the different species of vegetables, as the various kinds of animals; for instance, to feed a crop of corn, as a herd of swine.

An example will illustrate this remark. In a letter from Professor Mapes, the scientific editor of the "Working Farmer," addressed to General Tallmadge, President of the American Institute, is the following statement:—

"During the last winter, I made an analysis of soil from a field which refused corn last year, and found the soil deficient in the following constituents, chlorine, soda, phosphoric acid, lime, potash, and ammonia. The las spring, I applied a compost of common saltt decomposed by lime, thus supplying chlorine, and soda; spent bone dust, of the sugar refiners, which furnished phosphoric acid; Peruvian guano, containing potash and ammonia, to which was added a small portion of charcoal dust and plaster of Paris, to retain the volatile portions.

"The above was added to the soil at an expense of *one dollar and thirty cents per acre*, and the field planted with corn. The crop is now standing, and the Committee of the American Institute on Farms will state to you that the crop will probably be from fifty to seventy-five bushels of shelled corn per acre."

Professor Mapes further states, that in no instance has the experiment failed to produce desired crops, of superior quality, where manure has been founded on the chemical constituents of the soil, &c. Among these he mentions several instances where corn has produced over one hundred bushels per acre; wheat forty to fifty-seven bushels per acre; potatoes, three hundred to four hundred bushels per acre; carrots, one thousand bushels; ruta baga, twelve hundred bushels; and other crops in proportion.

Similar facts have been developed by the mere rotation of crops, instances in which lands had produced abundantly, without the application of manure, for several years.

This theory teaches, that certain products are adapted to certain soils, and that, where particular ingredients have been exhausted from the soil by vegetation, the indiscriminate use of fertilizing materials will not necessarily ensure a crop.

Already the exhaustive process of perpetual cropping has travelled over the once fertile lands of New England, and in its desolating march is wending its way over the fair fields of New York, Ohio, and on to the "Far West." Under the influence of this system of cultivation, the crops of wheat in these States have receded from an average of twenty-two bushels to fourteen bushels, or less per acre; and the same remark will apply to other crops, in like ratio of reduction.

From this sad but common error, Europe is just recovering; and, under the influence of her agricultural schools, now scattered all over the continent, (as will be seen by this report,) and of scientific cultivation, her crop of wheat in many parts has advanced from sixteen bushels to an average of over thirty bushels per acre; and a similar increase has taken place in other crops. Wonders have also been achieved in reclaiming waste lands, and in converting those which were barren and worthless, into rich and productive farms.—Many who have laboured for the improvement of agriculture and the education of the agriculturists, for a quarter of a century, with little hope of reward, now realize the beginning of an auspicious change in public sentiment. Thanks to agricultural societies and journals, the people will soon discover that labour and capital devoted to tillage and husbandry, are as worthy of legislative consideration and aid, as when applied to mining, commerce and manufactures.

Influence of the Rhubarb Plant in Producing Gravel.

The fourteenth number of Braithwaite's Retrospect of Practical Medicine and Surgery, contains an article on this subject which is calculated to alarm those who indulge in the pies and tarts made of this palatable plant.—It seems that it furnishes the material of one of the most dangerous diseases to which the human system is subject.

The substance of the article is briefly this:—The young stalks of rhubarb contain oxalic acid, and hard water contains lime; and consequently those who eat articles of food made of the plant, and drink such water, are introducing into their system the constituent ingredients of the mulberry calculas, which is an oxalate of lime; and if they are dispeptic and unable to digest the acid, "are very likely indeed to incur the pain and the exceeding peril of a renal concretion of that kind." "The oxalate was found in three out of four after eating the rhubarb."

This, it must be admitted, is rather startling. The mulberry calculus is the most painful form of the concretion of the kidneys and bladder. The rhubarb plant has come into extensive use, and is generally considered a very wholesome article of diet. If the danger of using it is as great as is represented in the Retrospect, it should be universally known. Indeed, there would seem to be reason to infer that the danger is not confined to those who use limestone water, for the acid will probably combine with other bases as well as with lime. The presence of oxalic acid in the plant, perceptible to the taste, would lead one to conclude *a priori*, that the ascribed effect would result from its use, whenever it is not decomposed by the stomach, which seems to be the case in the greater proportion of instances; and the experiments leave little room to doubt its agency in the production of oxalate gravel in the urine.—*Albany Cultivator.*

The Fork vs. The Spade.

As digging and stirring the soil is the most laborious and most indispensable operation in horticulture, (says a correspondent of the Gardener's Chronicle), it is highly important to inquire by what tool digging is best accomplished. The spade is almost universally used—so much so indeed that the fork has generally a specific name, as though it were only fit for one department of labor. It is generally called the "potato fork," because it is employed in unearthing that root, and in many gardens that is its sole occupation. Much has been said at various times on the superiority of the fork to the spade for general purposes, but the advice is seldom followed. The spade has always been used on my own premises until the last winter, and no man who has worked for me has ever said: "Sir, will it not be better to use a fork?" But having occasion to dig myself last autumn, I used the fork, and was so amazed at the ease and rapidity with which the work was done, that I have never since allowed a spade to be used when the former instrument is available. A moment's thought will point out in what the superiority consists. The friction is only one-half that produced by the spade, and stones present comparatively no obstacle. A sandy soil, of course, could not be worked by the fork, but light grounds may. Another advantage is the lightness communicated to the soil when it is forked up. The fork, indeed, gives the land a subsoil ploughing, if the prongs are long enough. Let the amateur make the experiment himself, and I am sure he will seldom afterwards use the spade.

Preserving Corn from Worms.

In the spring of 1847, we ploughed up one acre in a corner of a six-acre meadow, which had been several years in grass, and the whole of which was much infested with cut-worms and the yellow wire-worm. The acre was planted with corn, and totally destroyed by the worms. Late the ensuing fall, the whole field was manured and turned over smoothly; in the spring of 1848 the whole was sown with barley, which was very much injured by the worms—in many places entirely destroyed. In September it was sown with wheat, with the same result as with the barley. In the spring of 1850, we manured it well with fresh barnyard manure. turned under; harrowed and marked three feet and a half apart by two and a half, and planted corn four grains in a hill, the first of June. The seed was soaked in a decoction of a pound of tobacco in four gallons of water. There were plenty of worms in the ground, as I found in planting and hoeing; but they would not touch the tobacco scented corn, while there was not a single weed to be found; and, indeed, they did no small benefit in destroying the grass and weeds. The field was kept as clean of everything but corn as it well could be. At the first hoeing I observed a large mullen plant, the leaves of which were eaten through like a riddle, and upon digging around it I found over twenty cut-worms.—*Albany Cultivator.*

Improvement in Baking.

It has been known for some time at Vienna, that if the hearth of an oven be cleaned with a moistened wisp of straw, bread baked therein immediately afterwards presents a much better appearance, the crust having a beautiful yellow tint. It was thence inferred that this peculiarity must be attributed to the vapor, which being condensed on the roof of the oven, fell back on the bread. At Paris, in order to secure with certainty an appearance so desirable, the following arrangement is practised; the hearth of the oven is laid so as to form an inclined plane, with a rise of about 11 inches in 2 feet, and the arched roof is built lower at the end nearest the door, as compared with the furthest extremity. When the oven is charged, the mouth is closed with a wet bundle of straw. By this contrivance the steam is driven down on the bread, and a golden yellow crust is given to the bread, as if it had been previously covered with the yolk of an egg.

Ashes.

Take especial care of all the ashes made on your place—don't permit them to be exposed to the weather, but keep them under cover.—Five bushels of ashes, mixed with two double horse-cart loads of marsh river mud, muck, or peat, will convert the whole into good manure. A hogshead or two of soap suds would do the same thing—therefore, among your other things, save and use them.