

united to him, as the branch is united to the vine; then we know what it is to have our lives hid with Christ in God.

WHAT SHALL I PREACH ABOUT?—"What shall I preach about?" inquired a clergyman, on a visit to a neighboring pastor, as they sat together in the pulpit. "Are the people, who are here to-day, principally professors or non-professors?" "Preach the gospel," was the reply; "they are all sinners, and they all need it."—*Presbyterian*.

As soon as pride is humbled enough, not to enter into controversy with God about the justice of his own declarations, every man confesses himself a guilty sinner, in danger of eternal ruin.—*Venn*.

Scientific.

The Effect of the Rotation of the Earth upon the Flight of a Projectile.

Captain E. M. Boxer, of Woolwich, England, has recently been investigating a curious question with regard to the rotation of the earth, viz:—The amount of its effect upon a projectile in causing it, during its flight, to deflect from the object to which it is directed, or more correctly speaking, the object to alter its position with regard to the path of the shot. He finds by calculation, based upon data taken from actual practice, that in latitude 52° a ball projected due south 5600 yards, whose time of flight was 34 seconds, would fall 10,914 yards to the west or to the right of its direction. If fired due north the shot will fall nearly the same distance east of the object, but still to the right of its direction.

Captain B. by a process of reasoning shows that the same amount of effect would be produced if the ball be projected due east or west, and finally arrives at the conclusion that the deviation of the shot will be the same in amount in the same latitude, or nearly so, whatever may be the direction of the range, and that the deviation will in all cases be to the right of the object. He does not consider it of any importance in the present state of gunnery, yet he further remarks perhaps, at some future time such perfection may be obtained in the machine from which the shot is propelled, as well as in the projectile itself, as to make it worth while taking into account the rotation of the earth.

Fire Without Coals.

Dr. Bachhoffner proposes to effect the warming of towns by means of gas. We were invited to the Polytechnic Institution on Saturday evening to enjoy the private view of Dr. Bachhoffner's "patent fire." Ushered into the lecture-room, we saw a large party of gentlemen chatting and laughing round what we would call a roaring fire, only that it burned fiercely without making the slightest noise. It was an ordinary small drawing-room grate, and within the bars was a very ordinary looking fire of what we took to be the "clean best screened." We saw nothing peculiar about the matter, except a woven gutta percha pipe attached to the back of the grate, and shaking off into some distant region of the mysterious institution. Dr. Bachhoffner stated that he had applied a well known combination to ordinary purposes; that what we took to be Walls-end were thin layers, or flakes of metal (platina) over and through which a stream of water-gas was passed, that when set on fire with a lighted taper these flakes of metal throw out a heat far greater than could be got from the same body of coals; that they were, nevertheless, indestructible—the metal (vice the coal) merchant never having the chance of getting more than one order per house; and we were, ourselves, enabled to give evidence that there was no smell. The flakes were red hot; and the large amount of radiating surface they presented, licking over one another, completed the illusion of a brisk coal fire.

The new fire could be used at once in all houses where "gas" is already "on," and in all such cases there would, it is stated, be a direct saving in expense, as compared with the costs of coals—coals involving wood too. But the patentees desire to apply non carbonised gas, obtained by the decomposition of water; and with this object are starting a company to lay such "gas" on in towns. Their calculation is, that this gas would cost about 1s. per 1,000 cubic feet.—*London Daily News*.

A Singular Case of Sargar and Dentistry.

A very singular and a very successful operation in surgery and dentistry has been re-

cently performed in Philadelphia, which is deserving of notice. A young lady from Maryland, afflicted with painful and dangerous malignant tumor, had as the only remedy which promised relief, a large portion of the upper jaw-bone, on the right side of the face, removed. The operation proved successful, the lady recovered from its effects, and the next step was to supply, by artificial means, the absence of the jaw-bone and the loss of teeth, which caused an ugly disfigurement of the face. This has been done by a dentist of that city. The plate upon which the teeth are set covers the whole of the roof of the mouth, the form of which is first carefully taken, so as to make the plate fit accurately. But as, in this instance, there is only half of the roof of the mouth solid enough for the plate to rest upon, the plate is accommodated in form to the inequalities upon which it rests, and is extended by hollow projections—accurately fitting the mould—up into the space which the jaw-bone occupied, forming an artificial maxillary. The person, without this plate, is unable to speak distinctly, or to take fluids into the mouth without their passing out through the nose. With the plate in the mouth, the tongue is able to perform its office, and fluids are easily swallowed. The idea of supplying so serious a loss in this manner is as ingenious as it is successful.

A FACT TO BE EXPLAINED.—The "Republican," of Springfield, Pa., gives on its own authority, as a well known fact, the following account, to which I have seen no contradiction, though I have looked for it. I think therefore, there is proof enough of the fact. The statement is, that Hiram De Witt, of that town, lately returned from California, was on last Thanksgiving day showing a piece of quartz gold rock to some friends, when it accidentally fell on the floor and broke open. Near the centre, firmly and closely imbedded in the rock was an *iron nail*, about the size of a sixpenny, straight, with a perfect head, and but slightly corroded.

This fact deserves consideration. Much is said of the immense periods necessary to produce certain rocks, &c., but we have no facts by which to determine their length. Now here is a fact of importance. How long does it take the Creator to make any thing, is a question which some pretenders of science had better settle, before they set aside the Bible on the ground of the mere assertion that periods must have been as long as they guess.—*Christian Chronicle*.

RUSSIA SHEET IRON. The method of manufacturing Russia sheet iron is one of the secrets which have been successfully locked up within the dominions of the Czar, and the production of this particular quality of sheet iron has been monopolized by the iron workers of that country. Some gentlemen at the West claim that they have discovered this process, as appears by the following extract of the record of doings in the U. S. Senate on Wednesday last. "Mr. Brodhead presented a memorial, which he characterized as important, coming from G. J. H. Shoenburgh & Co., of Pittsburgh, Pennsylvania, and citizens of St. Louis, Missouri, asking the passage of a law by which there may be secured to them for a limited period the manufacture of the article known as Russia sheet-iron, within the limits of the United States.

The Farm.

Plant a Tree.

"A thing of beauty is a joy forever."

There has been such a change in the views of our people with regard to the beautiful, as well as the profitable, that all who can control the merest patch of land, proceed at once to do something which shall both please the eye and gratify the taste. How much better this than to see the back yard cluttered with brick bats, old shoes, and the cast-off rubbish of years. A man loves his wife and children better for a pleasant prospect, especially if within the limits of that prospect they may run and gather delicious and wholesome fruits for the dessert or to offer their friends; and they certainly will love him better for surrounding them with cooling shades and gratifying tastes. Here, then, is a moral effect not taken into account when the old boots are ostracized—the heart is sustained and made better as well as the corporeal frame.

It is a real pleasure for a child to say, "My father set and cultivated this tree; my mother planted this rose-bush and trained it about this

old window-frame, where the Pewee has built its tiny nest, and baby hands have scattered the fragrant blossoms. And does not the parent reap another joy in such expressions? Think, then, of the moral influence of planting a shrub or a tree, and thus in that pleasant way add something to the progress of the race. Trees promote health. They break the winter wind, and shield us from the summer sun, and breathe the air which we have expelled and is poisonous for us to breathe again. And then the heart that is oppressed by care or softened by affliction finds sympathy and peace in their gentle whisperings.

Dollars and cents, in this connection, we say nothing about—we desire to touch another chord. Picture to yourself what charms you may cause to cluster about your dwelling, and what true enjoyment you may realize in their creation; what bonds of affection you may implant in the hearts of your children, so that the seductions of wealth, or the blandishments of courts, or elegant life, shall never alienate their love from the old rural flower-embosomed home, and then you will be thankful to him who first induced you to PLANT A TREE.

N. England Farmer.

From the New England Farmer.

Nursery and Transplanting.

BY A. G. SHELDON.

Were I about to select a piece of land for a nursery, I should choose a sandy loam that is free from stones. I would be careful that there should be no hollows where water would stand and ice freeze in the water. It will be found convenient in cultivating the trees to have the land perfectly free from stones. I think it well to have the rows from 4 to 5 feet wide. This gives good room to take up the trees in one row without injuring the roots of the others. When the trees become big enough to inoculate and at the time of inoculating, it is well to cover the ground with meadow grass. This preserves the moisture in the earth, and if the weather should prove dry, as it often does in the month of August, the buds will be much more likely to live. In wet, misty weather, sift ashes on to nursery trees—this helps to preserve their health. One, two, and three years' growth from the bud is the right time to transplant the trees. In taking the trees from the nursery, always be sure that the spade is sharp, to cut the roots smooth. Be sure you cut off the tap-root under the tree, lest you should strain the tree in pulling it up. Trees should be taken up early in the spring. If your ground is not dry enough for setting out your trees, cover up the roots with earth in a cool place where the sun will not shine on the tops; let them remain until the land is fit to receive them. When you set them out dig the hole broad enough to receive the roots at the whole length in the same direction from the trunk that they had naturally grown, and set them as near as possible the same depth that they grew in the nursery. Fine pulverized soil from the garden or from the corn hills well warmed by the sun is good to sift in among the roots. After the trees is set out, it is well to lay some flat stones around them; this will keep down the roots and steady the bodies in the wind much better than staking. If the season should prove dry, put about the trees some hay or straw by the last of June or first July; let this remain till the first of October, then remove it for fear of mice, and put about the body of the tree compost manure. In the spring, spread this out as far as the end of the roots. If you can keep the whole of the ground plowed in the young orchard it is well; if you cannot, never let the grass grow anywhere within the length of the roots of the tree.

Particular care should be taken in pruning trees, that the top be well balanced. I have thought, sometimes, that it needed a hard-hearted man to trim an orchard, for if a branch be ever so thrifty where it is not needed to balance the tree, it should be cut off; this done, although you have nothing but a bud left in the right place, you will soon find the branch where it is needed. Very small limbs may be cut off in May. Large limbs should be cut in August. Wood, cut at this time, will remain sound and hard, although it may be some years healing over. Wash trees once or twice a year with soap suds and ashes, and scrub them with an old broom. Destroy all caterpillars' eggs in the month of March. From what I have learned of others and the addition of my own experience, I am firm in the belief that a good apple tree set on good ground, if well cared for, being in a thrifty

condition, in one year from the time it is set, may be counted worth one dollar; and if properly taken care of for nine years more, will gain a dollar each year—making a sum of ten dollars; and for the next twenty-seven years will pay the owner the principal and interest, and leave him the tree at thirty years old net profit.

In selecting the kinds of fruit, I would select some of every good kind, both early and late, sour and sweet; but Baldwins I would make the principal. I will not spend time to prove that no man is too young to set out an orchard; but I will say a few words to prove that no man here is too old to set out one. My own dear mother, when she was between 88 and 89 years old, wished me to send her four apple trees to set out in the four corners of her garden; I did so, and she superintended the setting of them out and helped with her own hands, and has lived to eat fruit from one of these trees.

By way of caution, I would say to nurserymen who raise apple trees to sell, never deceive your customers in the name of the fruit; and to farmers I would say, never set out an orchard until you are determined you will take good care of it; for that man who sets out an orchard and takes no care of it, is to the society of farmers as the backsliding professor is to the society of Christians. Worse than a cipher.

REMARKS—Friend Sheldon utters above some sound doctrines in relation to the culture of trees, and some excellent advice, which we trust none of us will forget.

HOW TO SAVE POULTRY MANURE.—Having learned the value of poultry manure, we suppose now our readers would like to know what is the best manner to save it:

First, build you a poultry-house, if it be no more than a rough scaffold of poles or slabs, laid upon crotchets, forming a double pitch roof, with end boards in winter, to keep out the wind and driving storms. Under this, place paralled roosts; and manure during the night, then will all drop down into a narrow row beneath. Here place light loam about a foot deep, rather wider and longer than the roost, and give it a sprinkling of plaster of Paris about an inch thick with manure, give it a layer of loam four inches deep, and another sprinkle of an inch of plaster, and so continue. In the spring, mix all well together, keep it from the rain, and use it at the rate of one pint to a hill of corn, or in a corresponding quantity for cucumbers, squashes, pumpkins, melons, peas, onions, strawberry or any other fruit vegetables or grain, requiring rich warm manure, and our word if you will have a large crop of a superiority. Thus you will become one of those who is desirous to benefit himself, and in saving more than a million of dollars ally to the country.—*Am. Agricult*

THE HOT-BED.—This may be the most simple contrivance; it may be made without hammer or nail, if you drive small stakes by the boards to keep them on their edges, the whole to the south. Tied with fine loam and rotter your delicate seeds will come as in a gilded frame. But a bed would be cheaper in the tuce, tomatoes, radishes, pe thing else that you may far little attention you will get ent and wholesome vegetal the system in the spring tl and veal diet.

MEADOWS AND OLD F any meadows or old fie bound, or which bore but hay last season, give them ing as soon as the frost is while the ground is soft, t quarts of timothy seed, ter seed, one bushel of plaster els of wood ashes, and five slaked lime, all well mixe rolling.—*American Agricult*

GRASS LANDS.—Cattler ed to run upon the mowin ho They poach it badly, m 3 fiel to mow and rake, and king grass, which makes hem d afterwards, and par hem d young trees than babl any at after the maw you will have pati chief is done.