

PROTECTION FROM LIGHTNING.

A recent number of the *Evening Post* contains an article of considerable length on this topic, and it is valuable in directing public attention to this question. The awful uncertainty which reigns during a thunder storm, as to the place where the fatal fiery bolt may strike, inspires general fear; hence the momentous question of protection from its dangers. Some proof has been adduced as to the ancients being acquainted with the use of lightning conductors, but there is not a line of evidence to be found in history which would lead us to conclude that they had a single correct idea in regard to the science or practice of affording protection from strokes of lightning. Thus Pliny, the Roman author, exhibits his ignorance of the subject by recommending that houses should be covered with seal-skins, that being "a marine animal which lightning could not strike." Seal skins, when dry, are non-conductors, and would be more injurious than beneficial for covering houses, and there is no difference between the skins of land and marine animals in this respect. Lichtenberg, a German writer, contends that Solomon's temple at Jerusalem, "which, during a thousand years, had never been struck by lightning, was protected by the forest of acute gilt spikes which covered the roof of the temple, and communicated, by means of metallic water-pipes, with the cisterns and subterraneous excavations of the hill on which it stood." This may really have been so, but the cause why the temple never was struck by lightning was wholly unknown to the Jews themselves; and in reading the description of the temple in the Bible, there is not a crumb of evidence in it to warrant the above conclusion.

To Franklin, our American philosopher, belongs the credit of inventing lightning-rods and providing protection from lightning. This, we believe, is not a doubtful question. It is a scientific fact, demonstrated by Franklin and others, that complete protection from lightning is provided in metal rods of sufficient height and thickness, when they are properly arranged on houses or other structures. In proof of this, Lichtenberg describes the following remarkable case:—"At the country seat of Count Orsini of Rosenberg, in Carinthia, the spire of a church built on a mountain had been on many occasions struck with lightning; and so very frequently and with such loss of life, that during summer divine service was not performed in the church. In 1730 the spire was entirely demolished by lightning, and after it was rebuilt it was struck four or five times every year. In the same thunder-storm the lightning fell upon it no fewer than ten times, and afterwards, in 1778, it was five times struck with lightning. The fifth stroke, on this occasion, was so violent that the spire began to give way, and Count Orsini was obliged to take it down. It was rebuilt a third time, and protected with a pointed conductor; and up to 1783, when Lichtenberg writes, it had received no injury in thunder-storms. The lightning had struck it only once, and the electricity was carried off without even fusing the sharp point of the conductor."

We could cite a whole host of such instances of the efficacy of lightning-conductors, but we will just state two others, these being sufficient for our purpose. The first lightning-rod which Franklin erected was on the house of Mr. West, in Philadelphia. A short time after this—July, 1770—a severe storm visited that city, several houses were struck with lightning in the neighborhood of West's, and the fluid struck his conductor and fused its point, but the charge was conveyed to the ground without doing any damage to the building. In the month of April, 1827, the American packet-ship *New York* was struck by lightning while in the Gulf-stream, and considerable damage was done. At this time there was no lightning-conductor on the vessel, but as the storm continued next day, the captain erected a chain on the mast for safety, and such security did it afford, that when the vessel was struck by a powerful charge a few days afterwards, the electricity was conducted by the chain into the sea, and did no damage whatever.

Some have contended that lightning-rods were of no benefit whatever, because in a few instances houses have been struck which were provided with them; but in no instance has this been the case without there being some deficiency in the arrangement of the conductor. It should form a continuous metallic connection between

the point in the atmosphere above and the end in the moist ground below; and it should also be insulated from the building by the interposition of non-conductors at the points where it is secured. In former volumes we have described the nature and mode of erecting conductors; we therefore need not recapitulate such information, as our object at this time is principally to urge their more general adoption, because we hear of accidents from lightning striking houses almost every day, and all because well-known means for affording protection are not more generally applied.

COMMERCIAL POWER OF COTTON.

At the meeting of cotton-planters, recently held at Macon, Ga., an interesting paper was read on the commercial influences of cotton, considered in its relations to the trade and industry of the world. It was prepared by a committee appointed for the purpose, consisting of Messrs. Rogers, Davis, Hillman, Rumph and Belvin, and the substance of it is given in the *National Intelligencer*. The committee take for their calculations the estimate of Mr. Marcy, when, as Secretary of State, in obedience to a request made by the House of Representatives, he submitted a report in which he placed the average value of the annual cotton crop of the United States at \$100,000,000; the committee add to this sum \$33,000,000 as the value of the cotton crop produced in other countries, thus stating the total production of the world at \$133,000,000. Supposing that, of the product thus raised in different countries, an amount to the value of \$33,000,000 is retained at home for the purpose of immediate domestic consumption—and this is about the amount, according to the best data attainable by the committee—they assume as the basis of their departure in estimating the commercial power of cotton, that at least \$100,000,000 worth of the raw material enters into the commercial exports of the world. As these exports imply an import of equal value in the way of exchangeable commodities, the commercial power of cotton in its primary aspect rises to the sum of \$200,000,000.

But the manufacturing countries which receive this cotton turn it into textile fabrics, which acquire a greatly enhanced value above the cost of the raw material. This increased value is moderately estimated by the committee at six times the original price of the commodity. All of this manufactured cotton is not needed for home consumption, and, according to the best tables, it is estimated that more than one-sixth of the cotton imported into manufacturing countries is re-exported in the shape of the manufactured article, which thus lends itself anew to the promotion of commerce. The skilled labor expended on the portion thus re-reported gives to it the value of at least \$100,000,000, which, determining in return an import to an equal amount, adds at least \$200,000,000 to the commercial exchanges of the world, inasmuch that, in the light of these statistics, the committee estimate that the immediate influence of cotton in supporting and maintaining the commercial activity of civilized States is represented by a sum not less, in round numbers, than \$400,000,000 per annum.

It is obvious that this calculation may be indefinitely extended in its industrial application and connections, in order to show in all its relations and bearings the politico-economical importance of cotton, considered as an element in the great web of human affairs.

VEGETABLE LEATHER.

The London *Mechanics' Magazine* states that there are very extensive works at Stepney Green, London, in which great quantities of artificial leather are manufactured. In appearance, it resembles common leather; and it is only by a very close scrutiny that the distinction between them can be detected. It is manufactured in webs 50 yards in length and 4½ feet in breadth, and is now much used for book-binding, and several other purposes for which tanned calf and sheep-skin are employed with us. It is also used by saddlers for making harness, and may be made of any thickness desirable, and is capable of being stretched or cemented. India-rubber is the principal substance of its composition, but there are other ingredients mixed with it, whereby its leather qualities are secured. The method of making it is not given, and it appears that this is kept secret; but that such a substance is now manufactured, sold and used, in large quantities, is a fact of too great importance to be overlooked.

HOW TO LOOK CHARMING.

From reading some of the popular English periodicals, the other day, we came to the conclusion that all their subscribers must be troubled with dirty faces, freckles or flesh-worms, judging from the number of recipes for the cure of such disfigurements which were in their columns. But as some of them are very good, we have selected such as we think best, should any of our readers be troubled with either of the two latter inconveniences.

One of the above editors informs a correspondent (who signs himself "A Troubled One") as follows:—"Little black specks are occasionally observed upon the nose and forehead of some individuals. These specks, when they exist in any number, are a cause of much unsightliness. They are minute corks, if we may use the term, of coagulated lymph, which close the orifices of some of the pores or exhalant vessels of the skin. On the skin immediately adjacent to them being pressed with the finger-nails, these bits of coagulated lymph will come from it in a vermicular form. They are vulgarly called 'flesh-worms,' many persons fancying them to be living creatures. These may be got rid of, and prevented from returning, by washing with tepid water, by proper friction with a towel, and by the application of a little cold cream. The longer these little piles are permitted to remain in the skin, the more firmly they become fixed; and after a time, when they lose their moisture, they are converted into little bony spines, as dense as bristles, and having much of that character. They are known by the name of 'spotted acne.' With regard to local treatment, the following lotions are calculated to be serviceable, especially No. 2, which is particularly recommended: 1. Distilled rose water, one pint; sulphate of zinc, 20 to 60 grains; mix. 2. Sulphate of copper, 20 grains; rose water, 4 ounces; water, 12 ounces; mix. 3. Oil of sweet almonds, 1 ounce; fluid potass, 1 drachm. Shake well together, and then add, rose water, 1 ounce; pure water, 6 ounces; mix. The mode of using these remedies is to rub the pimples for some minutes with a rough towel and then dab them with the lotion. Sometimes an advantage is gained by having two lotions, one for the evening and one for the morning. The best for morning application is the following: Sublimate of mercury, 2 grains; almond emulsion, half a pint; mix."

Another correspondent (Winnie Bristow) receives her advice in the shape of a reproof, for the all-knowing editor remarks:—"Had you perused our paper more attentively you would have found directions for the treatment of the spots, or black pimples, of which you complain. They should be thoroughly but cautiously squeezed, and on retiring to rest a paste, for which we are about to give directions, should be applied to the part effected. Recipe for the paste: Take 1 ounce of powdered bitter almonds and 1 ounce of barley flour; add enough honey to make the above ingredients into a paste. There is another and a still more simple remedy, which you may perhaps prefer. Bathe the spots several times a day with lukewarm water and a sponge, rubbing the sponge over a piece of yellow soap. There is a healing power in soap distinct from its cleansing properties."

Another editor publishes a recipe how to look charming, with a clear skin, bright and polished visage, as follows:—"You may generally remove freckles without using cosmetics (which are oftentimes dangerous by reason of their containing mineral agents), by merely stimulating the absorbent vessels of the skin to take them up and carry them away as refuse. Any smart stimulant will act in this way; but it has been found that the safest are taken from the vegetable kingdom. One of the best and easiest is a lotion made of a tea-cupful of soured milk and a small quantity of scraped horse-radish; let this stand from six to twelve hours, then use it to wash the parts affected twice or thrice a day."

DIRECTIONS FOR LAYING TILE DRAINS.—The ditch should be formed wedge-shaped, and dug from two and a half to three feet deep, and should be smooth on the bottom, with a proper descent. The tiles are simply placed end to end; wedged a little on the sides if necessary, to keep in line; the top of the joints covered with a sod, turned grass side down. If sods are not at hand, use shavings or straw for a covering. Water will find its way through the joint; experience will prove that you cannot keep it out. In wet lands, lay drains 25 feet apart, other locations from 15 to 25 feet. On soft bottoms, lay under the tile a narrow board, and fill up the ditch with surface earth.—Ohio Valley Farmer.