

and such is its waterproof quality, that all wet or damp will be effectually excluded.

3rd. It is of a most elegant appearance, resembling the finest dressed stone, and any tint may be imparted to it by the colour of the sand selected for mixture with it; it may thus be made to imitate Granite, Portland, Bath, or Yorkshire stone, and that so closely that the most experienced mason could with difficulty detect it.

4th. It is not subject to discolouration, it never turns green, it is never known to crack or blister, the hardest frost has no effect upon it, it stands in no need of paint; but should at any time paint be applied to it, such is its non-absorbent property that one coat will bear out and finish.

5th. For repairing damaged stone and fractures, cracks, or perished portions in Roman cement, or any description of stucco or plaster, preparatory to painting, it is invaluable, for the places so repaired may be painted over immediately without the slightest chance of any stain afterwards appearing; and internal walls covered with this cement may be painted upon, or the most costly flock-paper hung upon them in twenty-four hours after the plasterer has finished.

6th. The unexampled success which, without any one exception, has attended the application of this cement in the most exposed parts of the sea coast, warrants the assertion that it is the only cement yet discovered which may be employed with confidence in marine situations, experience having proved that the worst weather that can assail it tends only to harden and improve it.

7th. As an article of export, one most decided advantage that this cement possesses is, that there is no perishable property in it which requires it to be used immediately, or soon after it is made. It, in fact, improves by age; it may, therefore, be exported to any part of the globe, to the hottest or the coldest climate, and the contents of a cask will be found as sound and as serviceable for building purposes five years after its arrival as on the day of its shipment.

8th. With regard to the cost of this material, the application of it is computed by the most careful calculations to be half the price of mastic, and will not exceed the average cost of Roman cement; but when its great advantages of permanency and its highly ornamental character are considered, it is infinitely cheaper than any cement ever introduced.

We come now to Messrs. Johns and Co.'s other invention,

#### "THE PATENT STEPCO PAINT."

This material embraces all the prominent advantages of the cement, with which patent it is incorporated; but it is so prepared as to form essentially an oil paint peculiarly adapted for painting over stucco or plaster surfaces. It is intended as a substitute for white lead, which is expensive; and for the common colouring-washes, which, although cheaper, have no durability.

This paint, from its composition, has a peculiar affinity for cement and stucco, and being of a highly water-proof character, is greatly preservative of any walls on which it may be applied. It requires only thinning with linseed oil for the brush, and without any addition of turpentine or driers. It is more durable than white lead, and in its application is about half the cost of that material. Any painter may use it. Its colour is that of pure stone, and has a most pleasing effect. Like its twin material, the cement, this paint has the decided advantage over every other in marine situations, and, as an interior paint for large public buildings, churches, hospitals, barracks, public schools, prisons, union workhouses, manufactories, railway stations, public markets, &c. &c., it will be found a most economical application, it being of an exceedingly clean and wholesome character, and particularly adapted for all wards, lobbies, and dormitories, as a disinfecting agent, and utterly destructive of the encroach of vermin, and it is equally applicable to brick, iron, and wood work, and in any climate will remain good for years.

We have thus, Sir, endeavoured, to give a plain account of these two materials, and in so doing we have carefully avoided saying one word of their qualifications and value to the

architect and builder, which we are not warranted in doing, by the mass of evidence now before us from practical men in every part of the kingdom, who have made trial of one or both of them, and have forwarded us, unsolicited, their unqualified approbation of their merits.

We apologize for occupying so much space in your valuable journal, at the same time we think you could hardly impart to your readers intelligence that may, in the end, prove more useful to them than the above.

We are, Sir, your very obedient servants,  
MANN & Co.,  
Sole Agents for the Patentees.  
5, Maiden-lane, Queen-street, Cheapside,  
London, 15th August, 1843.

#### LIGHTNING CONDUCTORS.

TO THE EDITOR.

Sir,—In your valuable Journal of the 15th ult., I perceive a communication from a correspondent signed "Φηλεκτρον."

The subject is one of vast importance, particularly to the architect and builder, viz. the effectual protection of buildings and property from the effects of discharges of atmospheric electricity.

Your correspondent wishes to "convince" us of the "utility" of the "lightning rod;" it should be known that it is admitted by those professing acquaintance with the science of electricity that a conductor of the proper dimensions, altitude, metal, &c., with due regard to situation, termination, and fixing, will protect not only the building to which it is fixed, but also those within a circle or horizontal distance of which the length of the conductor is the radius.

Again, speaking of the general unprotected state of "our village churches" from lightning, and the danger they are exposed to from this, the most formidable element of nature, he makes no "venture" or "assertion" when he says "that 9-10ths of our village churches are left without any safeguard from its fury." In fact, from personal observation, I am satisfied that the average number protected by proper conductors is as low, or lower, than 1 in 30; and in a number of churches but recently erected, there is neither any arrangement for their protection against a storm of this description, nor has it entered the mind (I should conceive) or engaged the attention of the party to whom the construction of the edifice has been committed. On the contrary, in some cases I could narrate, so little regard has been paid to what the probable effects of a discharge of the electric element upon it would be, that the metal, clamps, strings, &c., together with the vane, rod, or spindle, and other metal work (often unnecessarily and injudiciously applied), form facilities for the most destructive explosions.

Indeed, it is the subject of remark that architects, with but solitary exceptions, are wholly (or nearly so) unacquainted with the science of electricity, the facts connected with or laws that govern it; and until some catastrophe occur of a more serious nature and greater extent than those which have recently happened to impress upon their minds the importance of the subject, little or no attention will be paid to it by them.

But turning to the letter of "Φηλεκτρον"—it should be borne in mind that the use of a metallic conductor is not to attract the electric fluid, nor will it do so, though it is true that electricity has a greater affinity for metals than other ordinary bodies in that respect; but it is well understood (though I admit there is a popular notion that the contrary is the case) that an electric cloud, unless indeed hovering over or passing immediately in the vicinity, is but little affected by even a metallic body until it come almost in contact.

Allow me to remark, as regards the best material, form, proportions, &c., for lightning conductors, that:—

1st. The metal now generally employed is copper, as it possesses several advantages over iron, amongst which are, that of its being a better conductor, possessing about five times the conducting power, and not being oxidized to any extent by the action of the atmosphere.

The first admits of a conductor of a decreased size or diameter being used, and the second, that of its being but little affected by exposure to the atmosphere upon its being necessary at any time to take it down, is worth three-fifths of its original value.

2nd. The form of a conductor for buildings may be that of the round rod, or any other that can expose a greater extent of surface in the same dimension without a sacrifice of strength or durability.

3rd. As to the size, if a copper rod be used, it should be  $\frac{3}{4}$  of an inch in diameter; the upper extremity should stand some feet above the building and project freely into the air; it should terminate by ex-

posing three or more arms, or branches, each terminating upwards in the form of a leaf, the thinner edges of which to be tinned or gilt, the latter preferable; the conductor to be carried in as direct a line as possible to the ground, should be fastened close to the wall with copper staples, and terminate at its lower end a few feet below the surface of the ground, it having two branches projecting from it horizontally and carried in any convenient direction away from the building; where there is a drain or pool of water immediately in the vicinity, it is much better to connect it therewith.

If the building be a church having a metal vane, the conductor should commence at, and be attached to the collar of the spindle below the socket and continued down, taking into connection as much of the metal work as possible; the methods of attaching it therewith entirely depend on circumstances.

But here, Mr. Editor, I must terminate for the present, having already absorbed too much of your valuable space. In conclusion, I shall be glad if these remarks at all tend to produce the desired effect: at the same time let it be distinctly understood that my observation on and reference to the letter of your correspondent "Φηλεκτρον" emanate but with a view of preventing a misconception of facts.

I am, yours respectfully,  
Regent-street, Aug. 8, 1843. M. A.

#### BUILDING SOCIETIES.

TO THE EDITOR.

Sir,—The article in your last publication respecting these societies having reference more particularly to the "London and Westminster Provident Association and Savings' Fund," merits the acknowledgment of every admirer and well-wisher of that excellent association.

As I am well aware that the workings of these societies are complicated, and are at present the theme of conversation and inquiry among the readers of your valuable publication, I beg leave to trespass on your kindness in requesting the favour of your inserting the following short explanation of its object and operation, especially as in one respect you are slightly inaccurate in your statement regarding it, and am confident that you will furnish your readers, who are anxious for information, a further detailed account of them.

The members of that association contribute out of their savings a small monthly payment, which, as it accumulates, is lent out to enable them to purchase house property, generally producing about 10l. per cent., which the borrower liquidates by instalments, with about 4l. per cent. interest, and at the expiration of the society in about ten years, the property will become gradually freed from all the charge upon it at the least possible expense and inconvenience to the borrower, as by the favourable provisions of the Act of Parliament under which it is established, the necessity of reconveyance and stamps thereon has been abolished. The Act does not limit the society to ten years, but its termination takes place when the association can pay 120l. per share to those members who have not previously had their shares advanced to them; but in order to protect those members who have done so from loss by reason of a protracted duration of the association, in consequence of too great a portion of the non-borrowing members, an event very improbable, the rules provide that if it shall happen that there are not borrowers for the accumulated capital at such a bonus as the directors may think reasonable, it shall be ballotted for by those members who have not had their shares previously advanced. There will be no danger of the association being incumbered at its close with unpaid mortgages, as they will be returned to them in satisfaction of their shares.

To illustrate more clearly the beneficial working, suppose a member to occupy a house at a rental of 30l. a year, the purchase-money of which is 300l.; it is calculated that he will have to pay 42l. a year to the association, being 12l. a year more than he would have to pay his landlord, and he has thus, by prudent and judicious economy, become possessed of his house at the cost of 120l. (only three years' rent or purchase), which had it not been for such an association, perhaps he would not have been able to accomplish without encroaching upon his trade capital, or, not having made the purchase, he would in thirteen years have paid his landlord the value of the house, without becoming the owner.

Surely, an association calculated to do so much good to the industrious tradesman is well entitled to the encouragement and support of all classes of the community.

A MEMBER.

There are, according to the statement of Mr. Cowlyne, a land surveyor, before Mr. Wilmot Horton's Emigration Committee, fifteen millions of profitably cultivatable acres of waste land in England, Ireland, and Scotland.