NEW METHOD OF PROTECTING BUILDINGS FROM LIGHTNING.

SPARE THE ROD AND SPOIL THE HOUSE!

Lightning Destroys. Shall It Be Your House or a Pound of Copper?

PROTECTION FROM LIGHTNING.

What is the Problem?

In seeking a means of protection from lightning-discharges, we have in view two objects: the prevention of damage to buildings, and the prevention of injury to life. In order to destroy a building in whole or in part, it is necessary that a path should be determined along which the lightning can pass. This path must be the one of least resistance, and energy is required. Just before the lightning-discharge takes place, there is a period in which we seek to prevent the path from the cloud to the earth, in such form that makes it as difficult as possible for the energy to pass through without injury to living beings. The prevention of such injury is the object of the electrician. The lightning-discharge must pass to the earth before any injury to life is likely to occur. It is the object of the electrician to make it as difficult as possible for the energy to pass through without injury to living beings.

Why Have the Old Rods Failed?

When lightning-rods were first proposed, the science of energetics was entirely undeveloped; that is to say, in the middle of the last century scientific men had not come to recognize the fact that the different forms of energy—heat, electricity, mechanical power, etc.—were convertible one into the other, that each could produce just so much of each of the other forms, and so on. The doctrine of the conservation of energy was not as yet clearly worked out in the early part of this century. There were, however, some facts in regard to electricity a hundred and forty years ago; and among these were the attracting power of points for an electric spark, and the conductive properties of spirits. Lightning-rods were therefore introduced with the idea that the electric energy existing in the lightning-discharge could be conveyed around the building, which it was hoped to protect, and that the building would thus be saved.

It is generally conceded that the energy involved was entirely ignored and wasted; and from that time to this, in spite of the best endeavors of those interested, lightning-rods constructed in accordance with Franklin's principle have not furnished satisfactory protection. The reason for this is apparent when it is considered that the electric energy existing in the air—here before the discharge, or, more exactly, in the column of distance from the cloud to the earth—above referred to, reaches its maximum value at the surface of the conductors that chance to be within the column of discharge; so that the greatest display of energy will be concentrated upon the surface of the very lightning-rods that were meant to protect, and damage results, as so often proves to be the case.

It will be understood, of course, that this display of energy on the surface of the old lightning-rod is aided by their own height and by the current passing from the earth, but in any event it can be reduced to a minimum by proper selection of the point of attachment of the old lightning-rod can only tend to produce a disastrous display of electrical energy upon its surface, — "to draw the lightning," as it is so commonly put.

Is there a Better Means of Protection?

Having observed the minds, therefore, of any idea of conducting electricity, and keeping clearly in view the fact that in providing protection against lightning we must furnish some means by which the electrical energy may be harmlessly discharged, the question arises, "Can an improved form be given to the rod so that it shall a. in this disposition?"

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
whether the word is singular or plural. We will distinguish crochet with *c*, crocheted with *c*; pique (the cloth) with *q*, croquet with *q*, and roofed with *q*. We must not forget that Duquesne requires *e*-e, Duquesne *ee*-e, Niqqaee *ee*, Torquay *ue*, and Queyray *ue*. Chassé (*sashay*) completes our French list with *e*.

We spell seize with *zi*, eigne with *ig*-e, and eyot (ait) with *y*. We must remember rhaphe with *ah*; Thame in England with *ah*-e, heir with *hi*, and renageu with *ai*-u. As an oddity we find quedge, which ought to be obsolete, troubled with *gh* or *ack* (quahgh), quod ("quints" in the country) has *oh*. Theys (tay) goes with *heys*, and old Mr. Trew (Tray) is ever faithful to *ew* in his name.

But why prolong this exhibit? The reader is already exhausted, and the chapter is not yet complete. Suffice it to say there are nearly one hundred different ways of representing the long sound of *a*, many of them in patronyms and names of places that need to be pronounced by English-speaking people. For other vowel sounds there is an equally extensive variety of representations.

All this would, perforce, show the necessity of a reform in spelling—phonetic reform, if need be; but, on the other hand, the letters of a word are the earmarks, if you please, that indicate ownership—that show the philologic derivation and history of a word. Phonetic reform could never touch the majority of irregularities in spelling and retain any intelligence in the word. Therefore, with all its faults, our heterographic orthography is preferable to any homographic orthography that can be devised with our present alphabet.

What we can do is this: Drop some of our redundant letters as we from programme, *we* from catalogue, etc.; final *e* from strychnine, etc., when the preceding vowel is short; *a* from pleased (pled), past tense and pp., and similar words; change *ih* to *i*; as in sulfur. There is plenty of scope for good work in this direction, and such work will finally become permanent. We would become accus- tomed to these words, as to dock-tailed sheep, and prefer them.

B. B. SMITH.