Walker Prizes in Natural History.

The Boston Society of Natural History offers a first prize of $100 and a second price of a sum not exceeding $50 for the best memoirs, in English, on one of the following subjects:

1. The relations of inheritance to cross-fertilization illustrated by the plants of Eastern Massachusetts, of the same species.

2. What depths of formerly overlying rocks, now removed by denudation, may be inferred from the structure of various rocks in Eastern Massachusetts?

3. Experiments affording evidence for or against the theory of evolution.

Each manuscript must accompany a sealed envelope enclosing the author’s name and signed by a correspondent to one of the Society’s Officers, in order to be considered for the prize.

S P R E A D, TO THE ROOD 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 the past several years, to recognize the fact that the different forms of energy—heat, electricity, mechanical power, etc.—were converted into one another, and that each could produce just as much of the other forms, and more. The doctrine of the conservation and conversion of energy was first 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 mounting power for an electric spark, and the conducting power of metals. Lightning-rods were therefore introduced with the idea that the electricity existing in the lightning-current could be conveyed around the building which it was proposed to protect, and that the building itself be saved.

The question as to dissipation of the energy involved was entirely ignored, naturally, from that time to this, in spite of the best endeavor of those interested, lightning-rods constructed in accordance with Franklin’s principle have not furnished satisfactory protection. The reason for this is simply that when it is considered that the electrical energy existing in the atmosphere before the discharge, or in the bed of such energy from it to the cloud to the earth, above referred to, reaches its maximum value on the surface of the conductors that are most in contact with the cloud of electricity, so that the greatest display of energy will be on the surface of the very lightning-rods we are most in contact with, and not at all on the earth beneath.

It will be understood, of course, that this display of energy on the surfaces of the old lightning-rods is also from their being more or less insulated from the earth, but in any event it is very evident of such a mass of metal that this old lightning-rod can only tend to produce a dissipation of electrical energy upon the earth beneath, and thus we are left as before.

Is there a Better Means of Protection?

Having cleared our minds, therefore, of any idea of conducting electricity, and keeping in view the fact that in providing protection against lightning we must furnish some means by which the electrical energy may be harmlessly dissipated, the question arises, Can an improved form be given to the rod so that it shall aid in this dissipation?
Editor's Summary