Protection from Lightning.

During a recent thunderstorm in the village of Trumbull, Conn., a family of three persons, husband, wife and child, who had taken refuge on a feather bed, were instantly killed by lightning; the house had no rods. In the same village, during the same storm, a dwelling house, which had two lightning rods upon it, was seriously damaged. Several of our readers, who have seen the accounts of these disasters, and others who cite analagous examples, have had their faith in feather beds, as a place of safety during thunder storms, severely shaken; while some of them would fain believe that lightning rods serve to destroy rather than to preserve life and property. We are asked to print something upon the subject; and we cheerfully comply, premising, however, that there is little that is new to be said, and that the subjoined information has for the most part been heretofore reiterated in our columns.

ARE FEATHER BEDS A PROTECTION FROM LIGHTNING?

Feather beds are not a protection from lightning, and the popular belief that they are, doubtless results from a misapprehension of the laws that govern the passage of electricity. The human body is a better conductor of electricity than feather beds or other objects ordinarily contained in the apartments of dwellings, and therefore, a priori, when the lightning enters an apartment, the human body is likely to form one in a chain of inductions, determining the path of an electrical discharge, unless

Houses constructed entirely of iron manifestly stand in no need of lightning rods at all, because the electric fluid, on striking so good a conductor, would rapidly diffuse itself in all directions and flow into the ground, provided, of course, that the construction of the building is such as to allow its free escape.

ARE LIGHTNING RODS OF ANY REAL VALUE ?

Unquestionably they are. Examples are numberless where the lightning has been seen to fall upon the rods of buildings and descend harmlessly to the earth ; while the fact is undisputed that the principal damages suffered from lightning are in connection with buildings that are not provided with conductors. Notwithstanding these facts, some people are apt to be indifferent whether their houses and stores are provided with lightning rods or not, and are always ready to give an example where some building so provided was struck in spite of its protection. Such cases are quoted by the old fashioned "practical men" with much satisfaction, because they hail in them what they are pleased to call the victory of their sound common sense and the discomfiture of the scientific man. This class is, however, rapidly diminishing in numbers under the influence of the extensive diffusion of scientific education among the people.

It may be well to assure unbelievers that the efficacy of the lightning rod is no longer an open question, and that any failure are attributable to bungling or ignorant construction. It would be an easy matter to multiply statistics in proof of the assertion; but none would carry with them more force than the following statement obtained from the records of the British navy, by Sir As it is inconvenient to manufacture or transport the Snow Harris, F. R. S:

frigates and smaller vessels were completely disabled; | moisture.

and in 200 cases recorded, 300 seamen were either killed or injured. When the lightning rod was introduced, every mast was furnished with a capacious conductor permanently fixed and connected with bands of copper passing through the sides of the ship under the deck beams, and with large bolts leading through the keel and keelson, and including, by other connections, all the principal metallic masses employed in the construction of the hull " (Harris). Since the adoption of this arran-gement, " it appears that damage by lightning has positively vanished from the records of the navy.'

In England, the various telegraph companies suffered serious damages by every thunderstorm, by the destruc-tion by lightning of their poles. The poles are now provided with small-lightning rods, and all damage has ceased.

In this country the Western Union Telegraph Company has suffered in the same manner, especially, says a recent number of the Journal of the Telegraph, "upon the plains and prairies, where every lightning storm formerly shattered and destroyed more or less of our poles, but which are now fully protected by a conductor (No. 8 wire) placed on every fifth pole. Wherever telegraph poles are provided with such lightning rods, all damage is prevented. Where the poles are not provided with rods, damage ensues.

WHAT IS THE PROPER SIZE AND MATERIAL FOR HOUSE LIGHTNING RODS ?

According to the best authorities, a copper rod of one better conductors are in its vicinity to divert this action. WHAT IS THE SAFEST PLACE DURING A THUNDERSTORM ? Inch in diameter, or an equal quantity of copper under any other form, will resist the effect of any discharge of lightning hitherto experienced. The copper rod is there The only place of absolute security in a thunderstorm is an iron building; or next in safety is a building properly protected by lighning rods. commonly used, and, if pointed with solid copper and properly put up, are efficacious in the great majority of cases. The particular form of the rod makes no difference. It may be round or square, twisted or hollow, composed of one solid piece or made of wires twisted together. It is the quantity of metal contained in the cross section of the rod that is of value, not the form.

WHY SHOULD THE ROD BE POINTED ?

The reason for terminating lightning rods in a point is as follows : When a thunder cloud highly charged with positive electricity comes up, it repels the positive electricity of all bodies on the surface of the earth coming within its influence, and causes negative electricity to accumulate in them. This is called induction, and it always takes place before a discharge Now it has been discovered that, when electricity is accumulated in a body in this manner, it can most readily escape by sharp points because in them it meets with the least resistance. A lighted candle held near the prime conductor of an electrical machine furnished with a point will be nearly blown out by the current of air produced by the escape of the electricity. Lightning rods are therefore provided with sharp points to allow the accumulated negative fluid to pass off readily into the air and neutra. lize the positive fluid of the thunder cloud.

HOW SHOULD RODS BE MADE AN APPLIED ?

The object being to make so good a passage for the lightning to the ground as to remove all danger of its leaping to some conductor in the house, the greatest care must be taken not to have any break in the conductivity. rods in one piece, the different parts must be in intimate "Between 1810 and 1825, before rods were introduced, connection when they are put up; it is best to have them no less than thirty-five sail of the line and thirty five soldered and the joints protected from the air and