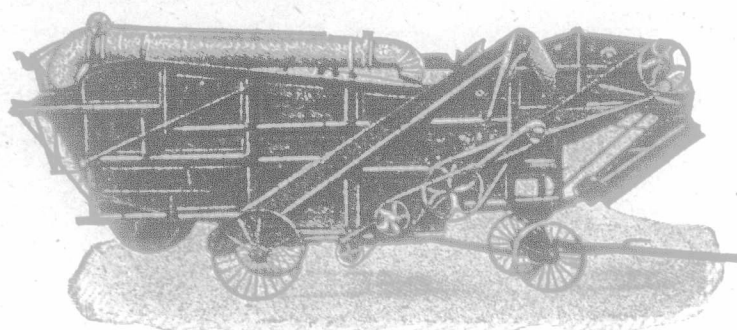
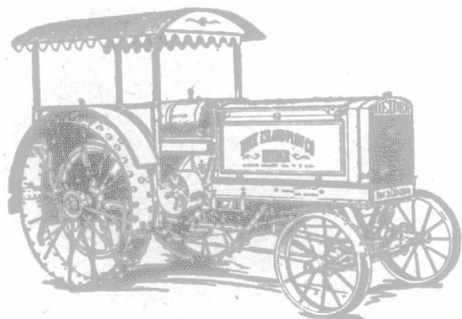


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species of burrowing wasps, have for centuries had a method of keeping animal food in fresh condition. They provision their nests, not with dead insects, which would decay before the larvae could make use of them, but with insects and spiders which they have paralyzed by stinging in the nerve-ganglia, and which thus still alive, but in a quiescent condition, remain in perfect shape to serve as food for the larvae.

The use of glues and cements for sticking substances together in all probability was first suggested to man by observing the use of such adhesives by various animals. In many animals there are special glands which secrete a fluid that hardens on exposure to the air, or in the case of aquatic animals, hardens on being extruded into the water, and these substances are used by the animals possessing them in a great variety of ways—for attaching eggs, for affixing themselves to the substratum as in the case of the barnacles, for making cocoons, and, as in the case of the Chimney Swift, for gluing sticks together to make a nest. Varnishes, likewise, have their prototype in the weather-proof varnish with which the buds of certain plants are protected. There is one form of fluid which hardens on exposure to the air which is very common among certain insects and among spiders, and which has so far not been successfully imitated by man, and that is silk. Artificial silks of various kinds have been manufactured from time to time, but none of them compare in quality with the natural product, and man still has to employ the animal as a manufacturer to obtain his supply of this material.

The construction of long bridges over huge chasms is a comparatively recent development with man. A fallen tree spanning a ravine or stream was for ages the only kind of bridge which man knew, but:

"Mr. Spider, B. Sc.  
A civil engineer was he.  
Long before man, began to plan,  
Across ravines to throw a span,  
Mr. Spider, B. Sc.  
Built his bridge from tree to tree."

The hypodermic needle, now so important in the practice of medicine for the injection of serum, and of narcotics, has its prototype in the fang of the venomous serpents. These hollow fangs, with their sharp points and with the gland at their bases containing the venom, and the action of the muscles of the widely-opened mouth which play the part of the piston of the medical instrument, are analogous to the hypodermic needle adjusted to its syringe.

The number of lessons which man has learned concerning the working of the various organs, and the function of the different tissues, of his own body, from the observation of animals in which the physiological processes go on more slowly, or in which the corresponding tissues are better developed, is innumerable, and many of these lessons have been of the utmost importance for the welfare of the human race.

### The Horse and the Christmas Stocking.

If tradition is to be trusted, we owe the associations connected with the Christmas stocking to the horse. It is said that in Holland and Germany, where wooden shoes were once so common, on Christmas Eve the people used to fill their shoes with hay and then place them by the fireplace. The hay was for the tired horses of St. Nicholas. In the morning the hay would be gone, and in its place there would be a present from the "grateful Saint." Those ancient fathers and mothers must have found the same joy in filling their children's shoes, after taking out the hay, that we still find in crowding the stockings the dear children have hung by the fireplace before going to bed to dream of Santa Claus.

Oh, may the blessed Christmas cheer be in thine heart through all the year.  
May fragrant memories of the day attend thee on thy coming way.  
May friends be many, foes be few  
And every blessing be to you.  
A Merry Christmas now, my friend,  
Let happiness and joy ne'er end.

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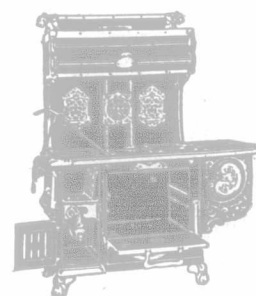
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