

To Test Lightning-Rods.

Mr. George B. Prescott, the electrician of the Western Telegraph Company of the United States, has published an article concerning an alleged electrical phenomenon observed during a thunder-storm in a private dwelling. This phenomenon consisted of electrical discharges from the water and gas pipes of the dwelling, which was furnished with a lightning-rod. The question was as to the cause of the electrical manifestation. Mr. Prescott believed that it was due to the defective connection of the lightning-rod with the earth; but in order to satisfy himself fully in the matter, he took the trouble to send an assistant to the locality, and subject the premises, pipes, and rod to actual electrical tests with the galvanometer.

The result was that the lightning-rod was found to be so sadly defective in its ground connections that it could not conduct the electricity into the earth, except feebly; and whenever a thunder-storm occurred, the house became charged with electricity, and the current, being unable to pass down the rod, made its way through the building to the water-pipe, and escaped through it into the ground. The details given by Mr. Prescott are quite interesting. He advised the immediate connection of the rod with the water-pipe, which would thus serve as an extensive conducting terminal for the rod, ensure the safety of the building, and put an end to the electrical manifestations among the pipes before mentioned.

The case is a representative one, as the rod was put up in the same defective manner as the majority of rods, that is the bottom of the rod was simply stuck down a few feet into the ground or rock, and thus practically insulated. The advice has been repeatedly given in many respectable newspapers and scientific journals, that a lightning-rod, in order to serve as a protection for a building, must have a large conducting terminal in the earth. The terminal may consist of an iron water-pipe, as in the present case, or a very considerable extension of the rod itself into wet or damp earth; or a trench, filled with iron ore or charcoal, may be made available.

If a man, employed to put up a tin pipe to conduct the rain-water from the roof to the cistern, were to solder up the bottom of the pipe, thus preventing any flow, his work would be rejected, and he would be stigmatized as a fool. But this is substantially what our lightning-rod men are doing every day. They put up rods for the alleged purpose of conducting the electric fluid, but seal or insulate the bottom of the rods so that the fluid cannot flow into the ground; and the majority of employers are so ignorant of the subject that they are unable to detect the fraud.

The known laws that govern the flow of electricity are almost as simple as those relating to water. If a proper connection exists between the rod and the earth, the building will be protected, for electricity will flow through the rod with the same certainty that water will pass through an open leader from roof to ground. But if the bottom of the pipe be sealed, the water cannot run; and if the bottom of a lightning-rod be sealed or insulated, the electricity cannot flow.

The golden rule for safety is to have the bottom of the rod placed in connection with a large mass of conducting material in the ground.

Wooden Shoes For Farmers.

EDITOR CANADA FARMER:—In the FARMER for August, I notice an extract from the *Practical Farmer*, respecting wooden shoes. These are no new invention. I have often seen the wooden shoes or *sabots* in use among the French *habitans* in Canada East, and very useful auxiliaries to personal comfort they certainly are. In this part of the country, in wet weather, a woman cannot go ten steps beyond her door yard without getting wet feet, except by using India rubber overshoes, which are not only troublesome putting off or on, but not nearly so efficacious in keeping the feet dry as the good old fashioned French *sabots*. By keeping a pair just inside the kitchen door, any one, either man or woman, might step into them, and walk about the barn yard or garden, and on returning to the house, just step out of them, with feet as dry as when they went out.

It might be a good thing for some enterprising speculator to go through some of the French Canadian parishes in

the fall, and bespeak a few thousand pairs to be delivered in the spring. The *habitans* would be able to make them during the long winter evenings, so that they would be disposed to sell them on more favorable conditions than if they were required during the summer. If the speculator, whoever he might be, were to be satisfied with a little less profit than the rascally tree peddlers ask for their trashy surplus stock—the *sabots* would be readily purchased by our farmers, and once having tried them, they would never be without them again.

SARAWAK.

IT IS NO NEWS TO OUR READERS to tell them that Canadian forests are being exhausted but little less rapidly than the forests in the United States. As to the supply in the latter country, an authority stated recently that in a comparatively short time the supply of timber must be exhausted unless proper regulations are adopted to prevent such a calamity. He estimated the annual demand for railroad ties alone to be nearly 40,000,000 pieces, or 100,000,000 cubic feet, this of course being in addition to the needs of building and other purposes. One serious cause of the destruction of timber he considered to be the felling of hemlock trees for the bark alone, the wood being left to rot. He strongly urged the importance of State action in reference to this subject, and showed the amount realized by foreign nations in the way of revenue by a judicious system of treatment which maintains the forests perfectly at full vigor of growth, France alone deriving annually \$41,000,000 income from 12,500 square miles, which, it is believed, will continue at this rate indefinitely.

IN MR. JAMES CAIRD'S annual letter about the cereal crops, there are some interesting statistics about the English consumption of wheat. Previous to 1860 the annual breadth of British wheat land exceeded 4,000,000 acres when the population was barely 28,000,000. The average breadth during the last eight years is 200,000 acres less, while the population has increased to 32,000,000. The produce of 3,000,000 acres of foreign land sufficed for our wants before 1870, that of 4,500,000 acres has been consumed in each year since that time. The consumption of wheat in the United Kingdom in the year 1874 may be stated in round numbers at 100,000,000 cwt., in the following order of supply:—Home growth, 50.7; United States and Canada, 31.5; Russia, 5.8; Germany, 4.0; Chili, 2.2; France, 1.1; other countries, 4.7; total, 100. This is subject to considerable fluctuation, Russia sometimes rising to 18 per cent., and America so recently as 1872 falling to 12. But on the average of the last six years the United States and Canada have taken the leading place, and Russia the second. The countries of Western Europe—Germany, France, Denmark, and Spain shew, he says, a declining export, either from a greater home consumption or lessened production. The mainstays are the United States and Canada and the Black Sea ports of Russia, whose rich and unexhausted lands, with a comparatively sparse population, finds a profitable outlet for an abundant surplus in the United Kingdom.

PROF. RILEY, the eminent entomologist, tells the *New York Tribune* that we are probably to suffer from the depredations of another *Bruchus*, akin to the *Bruchus pisi* or pea weevil. The new enemy is the *Bruchus fabae*, bean weevil, which, although undoubtedly indigenous in this country, has only within the last 10 or 15 years manifested its destructive propensities in our gardens. "It is now," says Mr. Riley, "pretty generally disseminated over the country, and bids fair to outdo the notorious pea weevil in its injurious work. The larvæ and pupæ, though smaller than those of the pea weevil, closely resemble them. One great distinction between the two species is found in the fact that whereas the pea weevil places but few eggs on a pod, so that it is but seldom that more than one grub is found in a pea, the bean weevil deposits so large a number that a single bean often contains from a half-dozen to 14 or more larvæ. Infested beans can always be distinguished from those that are sound by one or more round, transparent spots on the skin, where the larvæ have prepared places of egress, in order that they may the more readily issue as beetles. Many of the beetles are perfected in the Fall, but a large proportion of them not till the following Spring, so that there is the same danger of introducing them from one locality to another in seed beans as there is in the case of the pea weevil. All beans intended for seed

should be closely examined, and the infested ones separated and destroyed. Where large quantities are required the most expeditious way of separating the sound from the unsound is to throw them into water, when the sound ones will mostly sink, and the unsound swim."

DR. CARPENTER is inclined to believe that a purely vegetable diet, if it contains a due proportion of oleaginous matter, is capable of maintaining the physical powers of the body at their highest natural elevation, even under the exposure to the extreme of cold. We are inclined to believe that if Dr. Carpenter were set to undertake a course of farm work in keen, bracing weather, on a "purely vegetable diet"—even though it were "oleaginous" enough to nauseate an Esquimaux—he would be hankering after the flesh-pots of Egypt before the first day was out.

A NEW JERSEYMAN was badly bitten by a new variety of strawberry called "Brown's Wonder," introduced from England. He bought it on the faith of a beautifully got-up illustration representing its habit. Each plant was to bear about a bushel of berries. His experience, as detailed in the *Gardeners' Monthly* is that it is indeed a wonderful variety, but for its worthlessness only. "Should this variety continue to grow and produce in the future as it did the past season, I think it would take about a hundred acres, under extra cultivation, to produce one mess for a sick grasshopper. When picking what a tempting sight it was—the bed of Brown's Wonder! Such a display of foliage and such a want of fruit, while the contrast with Monarch of the West was very "pleasing." This bed of Brown's Wonder was so tempting that I immediately let the Monarchs hang, and went for a hoe. It struck me that the contrast would be still more pleasing to have bare ground by the Monarchs. Brown's Wonder might be a good thing for covering sandy door yards, where grass cannot be made to grow."

Correspondence.

PEARS FOR NORTHUMBERLAND COUNTY.—Subscriber, Cobourg.—For your district we should recommend Beurre d'Anjou, Flemish Beauty, Vicar of Winkfield, Louise Bonne de Jersey, and Sheldon. If the Bartlett has not been already tried and found wanting in your section, try it in a small way.

THE PRICKLY COMFREY.—As well as the May number of the CANADA FARMER, see also the June and July numbers. We are pleased to find the amount of interest evolved by our articles on the *Symphylum*, which we think worthy of a systematic trial here. Mr. Edwards, of Burbage Hall, Leicestershire, is the principal English grower of the plant.

APPLE SCIONS FROM ENGLAND.—E. E. Woodburn.—Apple scions can be sent by mail from England here. It would be most convenient for them to reach you by the beginning of April; if earlier they should be stored in a moist place. They can be packed in damp moss enveloped in oilskin. It is well also to stick the ends of the scions into a potato.

THE JAPANESE PEA.—H. A. P.—If you had read your CANADA FARMER more closely, you would not have been victimized. In the April number you will find that we stated, in answer to a correspondent, that the pea would not succeed in Canada. We never heard of its having got so far as flowering, here. It may be profitable to cultivate so far south as Tennessee, but the extravagant claims made for it justify anyone in classing it among the swindles. It will drop out of sight now, but will surely be resurrected again in a few years, probably under another name.

ENTOMOLOGICAL SPECIMENS FOR NAME.—C. J. Sarawak.—The two moths in your first letter were crushed beyond all identification except that they belonged to the *Agrotis*. The second letter contained a dark grey moth, *Agrotia trilinea*, both European and American. The larva feeds on the leaves and culms of wheat before heading, and does much damage to the cereals and fruiting grasses. The quill contained the larva case of a *Coccinella*, lady bug, and the perfect insect which had undergone its transformation *en route* to us. The variety is *Hippodamia convergens*, not a very common one; useful to agriculture as preying on *aphides*.