

knew him well, when I was a boy; his heart was in his hops, and his fruit, and his poor people. He died insolvent, in spite of his exertions, but his name is respected all over the dear old county.

"On an orchard of thirteen acres," says he, "for nine successive years both blossoms and leaves of the apple-trees were completely destroyed by caterpillars, before I commenced smoking them, and for the ten subsequent years I never lost the crop."

The smoking is done by placing a large covered iron tub, with a hole at the bottom, on four low wheels, and putting dry wood, with any weeds and rubbish, sprinkling brimstone on the smouldering stuff from time to time, and forcing it to burn by a pair of bellows, which drives a strong and continuous stream of disagreeable smoke through a movable tube to every tree, and every part of a tree, in succession. By constantly commencing on the windward side of the orchard, and following up row by row till the moth disappears, I prevent it producing caterpillars, and consequently save the crop."

"Donaldson asserts that the properties of a milk-cow and of a cow disposed to fatten are quite incompatible. This must be entirely a mistake. The very circumstance of a cow yielding much butter in her milk shows that her food is readily converted into fat. She would not be a good milk-cow if she fattened at the same time her milk was being secreted. But when the milk has ceased to flow, then she must have an aptitude to fatten rapidly."

The above is a quotation from an essay by Dr Lyon Playfair, written in 1844. How thoroughly the knowledge of facts, learnt since that time, has proved the utter weakness of his theory!

I can recommend to every fruit-grower a book that has been sent me for review. It is styled, "*Insects injurious to fruits*," by William Saunders, F. R. S. C., and a host of other honorary titles too numerous to be mentioned. The engravings are beautifully executed, and the whole work bears marks of having been carefully studied. Published by Lippincott and Co., Philadelphia.

*Feeding animals*, by Elliott W. Stewart, one of the editors of the "Live Stock Journal," is, *meo arbitrio*, rather too long spun out for general use. Still, a great deal may be learnt from a patient perusal of it, and the description of the points of a *milk-cow* is very good. Practice has always been in advance of theory in feeding animals.—A. R. J. F.

**Hot Water for Insects.**

It has been many years since we first employed hot water for killing destructive insects, but never with the accuracy of the experiments described in a late number of the *Gardeners' Magazine of London*. A large number of experiments were made with different plants, to determine what degree of heat they would bear without injury. Among the plants which would bear 140° without being harmed, but which were hurt at 150°, were centaureas, sedums, fuschias, calceolarias, potunias, ferns, and several others. It was curious, that all the plants tested would bear nearly the same degree of heat, with scarcely any variation. Pelargoniums were unhurt up to 150°, but the slightest rise above killed the young wood and leaves. It is probable that the same result would take place with hardy plants, and the green shoots and leaves of trees. The question next occurs, what insects will yield to this temperature or to one some degrees lower? This information is not furnished by the *Gardeners' Magazine*, except that aphides quickly perish in water heated to 120°. The practice has been adopted by nurserymen for clearing their young pear, cherry and other trees in the nursery rows of the aphides which have infested them, by hending the branches which they covered so as to immerse them in soap-suds, which has proved effectual; but doubtless a better way would be to use hot water, the temperature of which could be kept at the right point by the use of a thermometer, and by occasional additions from a vessel kept heated to boiling.

A useful series of experiments, easily performed, would be to ascertain what insects would yield to this hot bath, might be tried on rose bugs, slug, currant worms, or any others which feed on or occupy the green and flexible shoots of plants and trees. A most important advantage of this mode is that it leaves no defacing or hurtful poison on the plants.

In the experiments which we have performed for many years in destroying the cabbage-worm with hot water, the precise temperature could not be determined by using the thermometer, as the plants could not be immersed, but must be treated by showering from a watering pot. This required some care and judgment, and was not therefore so well adapted to kept quite hot in the vessel, as it was necessarily considerably cooled in the fine jets through the air from the rose, and when too hot, the application must be for a briefer moment than when the temperature is lower. It is worth while to ascertain how low a point will be fatal to them, and then fill the watering pot with water a few degrees higher, and apply it promptly and freely, keeping a thermometer on hand as a guide. A certain and successful application of this remedy, easily performed, would be of great value to the cabbage-eating community.

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