Incubation by Hot Water.

SIR,—As I am going into the raising of poultry on rather a large scale, and having seen some reports of the hatching of eggs by hot water, I would feel obliged by your letting me have what information you can in your valuable paper concerning this novel method.

A FOWL FANCIER.

There was never a time when the rearing of poultry was attended with greater profit than now. Prices are enormous when considered in the light of those which ruled only a few years ago, and a considerable addition might, therefore, be made to the income of almost every farmer by increased attention being paid to the poultry yard. That much greater attention is being paid now than even a few years back all of us who know anything of modern farming are well aware: but neither our farmers' wives nor other people, who know something of agriculture, and practice it, are enough acquainted with the efficiency of modern apparatus for hatching. Several methods have been got out for effecting this purpose. The most recent, and, as it should be, the most simple, and, as we are inclined to think it will prove, the most effective method is that of Messrs. Thomas Christy & Co. Their hydro-incubator consists of a cistern of hot water surrounded by a thick lining of cork dust or other non-conducting material, and the only attention required is to replace a portion of the hot water once in the morning and once in the night, and to turn the eggs, which are in a drawer beneath the cistern. The incubator resembles a wooden box with a drawer at foot. This drawer has a real, and also a false bottom, cool air being admitted between them; and in the false bottom are a few slits, covered by a loose sheet or lining of felt. On this lies the charge of 100 eggs, kept in a warm atmosphere by the radiation from the hot water cistern immediately over the eggs. Thus the eggs are warmed from the top, and a sufficient amount of moisture is self-applied from the condensation of the cold air on the felt below. The cork or cork-dust lining around the cistern, except at the bottom, acting as a non-conductor, keeps in the heat. They have likewise got out an apparatus for rearing the chicks, by the use of which the chickens can be much more effectually reared even than by that bugbear to poultry keepers, the "brooding" hen, notwithstanding that her ladyship will take charge of two dozen young chicks at once, and care for them without ever having sat on the eggs. It is said that "an incubator and rearing mother are now essential machines on every farm." Half an hour in the morning and twenty-five minutes in the evening is sufficient time to expend in attending to the artificial rearing we have described. Ducks, turkeys and game, as well as ordinary farm-yard poultry, can be raised with certainty under Mr. Christy's systems. A hydro-incubator and a rearing mother can be supplied complete, with a set of thermometers and ready packed, for less than £8.

The Grape Vine Flea Beetle.

SIR,—I wish to ask a question about my grape vines, of which I have nearly a hundred. A week ago I noticed bugs on them, eating the buds and causing them to bleed, and now there are not more than five or six that have any sound buds on them. I have gone over them and taken off two or three hundred in one day, yet the number increases. It is a small bug with blue-green cased wings, with a pair of transparent wings underneath. Can you or some of your numerous readers tell us in your next number the best way of destroying them? I have raised grapes for twenty years, and was never troubled with them before. Will hellebore be of any use, and will the vines bud again provided the bugs can be destroyed? A reply will much oblige.

S. F., Sutherland's Corners.

[This beetle is known as the Grape Vine Flea Beetle (*Haltica chalybea*). It is very destructive sometimes to the buds of the grape vine, eating out the centre and destroying them. Syringing the canes with a mixture of Paris Green and water, one teaspoonful to a pail of water, would no doubt destroy them, provided the Paris Green be of good quality. They may also be destroyed by hand-picking. Later in the season the larva of this beetle—a little blackish grub with six legs—appears feeding on the leaves, eating holes in them. These may be killed by using a solution of hellebore, two tablespoonfuls in a pail of water, and showered on the vine from a syringe or the rose of a watering pot.]

Shelter Belts for Orchards.

SIR—An article in the March number of the ADVOCATE, under the title of "What Variety of Trees are Best Adapted for the Shelter of Orchards, and What is the Best Time to Plant," gives expression to the opinions of different individuals on this subject. Our personal experience in this matter is limited, so far as practice is concerned, but we have learned some facts from observation which are applicable to this consideration of the subject, and may be of service and value to the readers of the ADVOCATE.

A few years since we were making a visitation of the farm of Hon. E. H. Hyde, of Stafford, Conn., Vice-President of the Conn. State Board of Agriculture, and among other portions visited were the fruit orchards. It may be stated here that Governor Hyde is an extensive fruit grower, more especially of apples, but largely of pears; the field in which pears were growing was near the residence —the soil a clayey loam. Upon those portions of the lot nearest the house were set evergreen trees or shrubs for ornamental effect, being mixed in with the fruit trees.

In one place, for artistic effect, the pear trees were set in a circle and plants of arbor-vitæ set between the trees, filling in all the intermediate space, with the view of forming a hedge to the height of about five feet, which was to be kept headed back; but, like many another ideal plan, it was never carried to a successful termination, so far as original designs were concerned. Inside the circumference of this circle were set a number of the pear trees of the orchard.

As intimated, the hedge was allowed undisturbed growth, and all the time of our observation was at a height equal or nearly so to that of the trees.

Now as to effects, and in this there could be no mistake, because other trees of the same variety, but without shelter, were sufficiently near as to be under the influence of the same character of soil, and all other conditions save the influence of the evergreen trees.

While trees of the same variety of fruit at a little distance away would blossom and give promise of an abundant fruitage, as they increased in age they gave unmistakable signs of being in some way blasted, and while they would mature fruit, it was still hard, knotty and immature in general character, flavor, juiciness, &c. On the other hand, those trees that were protected by means of their connection with the circular wall spoken of, or by being within the enclosure, would be laden with fruit perfectly developed in form, of about the average ordinary size, juicy, rich and melting as could be desired for the most cultivated taste. And while the former would be green and unattractive to the eye, the latter would be richly colored and exceedingly beautiful.

Here are the two cases brought into direct comparison, with very dissimilar results. Whether these results are attributable wholly to the change of condition effected by the simple shelter, or to other causes in combination, it might be difficult to decide. We noticed in the case of the protected trees that from the annual defalcation the trees were more thoroughly and effectively mulched than was the case with the unprotected. Then, again, what particular chemical elements this peculiar mulch might contain, if any, that would be beneficial to the development of fruit, is an undetermined question; but it is enough to know that by a combination of conditions induced by a collection of arbor-vitæ trees certain favorable results were produced. Now, if this can be relied upon as a general result, it will well pay any fruit grower to set arbor-vitæ trees in his orchards, so as to form a barrier sufficient to break the shelling and blasting winds that are so effective in not only diminishing, but destroying an entire crop.

We could name other cases of a similar character, but space will forbid further mention. Arbor-vitæ seems to be especially adapted to this service, because of the ease of its propagation and average hardiness.

WILLIAM H. YEOMANS, Columbia, Conn.

The Hessian Fly.

Agricultural College,
Lansing, April 19, 1878.

To the Editor of the Michigan Farmer:

About a week ago the Hessian flies commenced hatching out in this vicinity. Now they are present in the wheat field to the tune of countless millions, reminding one of swarms of mosquitoes in summer. Every farmer can see them by close observation. In the morning the females are very noticeable, as their bodies—abdomen—are red from their load of that color, looking not unlike a small mosquito after he has taken his fill of blood. At night, having deposited their burden of eggs, they too are black, but still can be told by their spy-glass-like tip, the ovipositor, while the claspers of the male resemble a blacksmith's forceps.

They are now busy laying their minute red eggs, just visible, upon the closest scrutiny, without a glass.

The prospects look dark, and would look darker except for the little black parasites with their four wings and active habits, which are also numerous, but less so than "the fly." Knowing the general interest in this subject, I hope this will reach you in time for your next issue.

Yours truly, A. J. COOK.

Millet and Orchard Grass.

The grasses referred to are Golden Millet and Orchard Grass, the former for hay and the latter for grazing. The Golden Millet must be sown every spring after the danger of frost is over, broadcast or in drills, in the same manner as oats, three pecks to one bushel of seed to the acre. It is a very rapid-growing grass, and matures in about ten weeks time. Its yield is enormous—often as much as five tons of hay and one hundred bushels of seed to the acre. It takes much labor to save it, and a good force is necessary to follow the machine when cutting as grain. It is eagerly eaten by all stock; even hogs live and thrive on it, and it is a crop of which the farmer is sure to raise a fair yield every time he sows, one rain insuring a good crop. I have seen good hay from it when the season was too poor to make hay from anything else, and I am sure that when any farmer once gets into the seed he will not want to get out. It will grow in almost any climate, having been successfully grown in some part of nearly every latitude from Maine to Florida.

Orchard grass is good as a pasture or for the seed. Growing the seed has been a very profitable business in this country until the present year—the price ranging from $1.75 to $2.50 per bushel, but this season an unusually large crop brought the price, even at retail, down to about $1 per bushel. It is one of the earliest and most hardy grasses of which I have any knowledge. Cold or heat will neither freeze nor burn it out, and when once set you have a good pasture that will always be the first you can turn stock into, and it will outlast all others in dry, blighting weather. It will grow on any land that will grow anything at all, and will improve and lighten the land every year you leave it on, and it will be there until you remove it intentionally. I know some farmers who have had a stand of twenty years, and seemingly it is good as new.—*W. J., in Country Gentleman.*

THE ONTARIO VETERINARY COLLEGE.—The annual examination took place on the 4th of April. The gold medal was carried off by W. Jex, of Brantford, and the silver medal by S. Foelcker, of Pennsylvania. Diplomas were also given to the following:—S. G. Anderson, Tottenham; L. P. Chase, Illinois; J. R. Deacon, London; F. W. Derr, Ohio; G. Falls, Ottawa; T. Hagyard, Kentucky; C. Hand, Alliston; H. Heckenberger, Pennsylvania; G. P. Hinman, Cobourg; J. Humphries, Pennsylvania; W. Jex, Brantford; A. Moore, Guelph; J. McKerracher, Highgate; J. V. Newton, Barrie; S. P. Palmer, Toronto; B. A. Pierce, Illinois; H. Sutterby, New York; A. N. Smeall, Toronto; E. P. Smithers, St. Louis; A. R. Stephenson, Cobourg; J. Waddel, Seneca; L. E. Wheat, Pennsylvania; G. Theobald, Teeswater.

O. F. Atwood, of Richville, Vt., recently killed a bull calf that was eight months old lacking four days, which dressed 476 pounds. This calf was fed with sour milk through the summer, with a quantity of meal during the last three months. This shows the efficacy of sour milk as food for calves.