

## Correspondence.

**FRENCH HORSES.**—Reader, Scott Township, can buy Canadian horses, in this Province at from \$200 to \$1,000. The breed is becoming extinct; the few left showing some good paternal qualities, but on the whole too much mongrel. Imported Percherons have, of late years, been introduced by some of our more enterprising French Canadians. I have seen some excellent stock from this breed, others again say they are very liable to disease. For my own part, I use only the medium sized Clyde for farming purposes, and find them more reliable, and with less tendency to unsoundness. They also (as a general rule,) command the highest price in the Montreal Market. — *Wm. Mackay, M. D., Lower Laclinc, Quebec.*

**WORK ON AGRICULTURAL CHEMISTRY.**—**POST AUGER.**—H. A. S., Vittoria,—Johnston's "Agricultural Chemistry," \$1 75; same author's "Elements of Agricultural Chemistry," \$1 50; "Agricultural Chemical Analysis," by Prof. Caldwell, of Cornell, \$2 00; Stockhardt's "Agricultural Chemistry," \$1 50, are among the best of the low-priced works. A more expensive and scientific one is Morfit's "Treatise on Fertilizers," \$25 00. There are several good post-augers in use, with which Mr. Rennie, of Toronto, or any other implement dealer can supply you. The post scoop is coming into general use, and possesses some advantages over the auger in that it can be worked in ground too hard for the auger to be operated in. In using them, the ground is loosened with a crowbar, and the soil is then withdrawn with the scoop. A great deal of work can be got through with it.

**SICK AYRSHIRE.**—W. F., Greenbush, Ont.—Your letter was delayed in the mails and we did not get it until too late for our last issue. The cow will now have calved, and the trouble will be over. Probably the food you gave her was of too stimulating a character, heating her blood to too great a degree. If the horse has not recovered, send a full description of his symptoms.

**STONE DRAINS IN ORCHARDS.**—Having noticed that Greeley and others have condemned stone drains for orchards would you please give your opinion on the subject. Would a stone drain in the centre, between rows of apple trees thirty feet apart, be apt to get choked or injured by the roots of the trees extending to the drain?—*A. McL., Tecumseh.*

Our opinion on the subject of stone drains in orchards is, that orchards should not be located in situations which would want a stone drain, if it can be avoided. If there is no choice in the situation, by all means put in the stone drain as large as possible. In time the roots will extend to the drain, and the larger the drain is the longer it will be in getting choked.

**HOLLOW-HORN, SO-CALLED.**—J. G., Elderslie, Ont.—The peculiar low state of cattle called "hollow-horn," is produced by bad and insufficient feeding, and, to repeat a time-honored joke, should rather be called "hollow-belly." Boring the horns, slitting the tail, etc., as are sometimes practised, are just so much nonsense and cruelty. The real treatment should be warm shelter, warm mashes and good nursing. The processes to which the horns are united are always hollow, and it is ignorance of this fact that deceives the "cow-doctors" upon whom some farmers are apt to place reliance. The coldness of the horns in this form of disease shows that the circulation is weak and depressed.

**A COMPLIMENT FROM OVER THE LINE.**—Mr. Benj. B. Hopkins of Griggsville, Ill., in enclosing us a dollar in American currency for a year's subscription to the CANADA FARMER says:—"If not enough money, I will send more by return mail. If you do not send the FARMER, I guess I have got my dollar's worth in the one number you sent me for January 1875."

**STOCK JOURNALS.**—G. R. H., Guelph, Ont.—The *National Live Stock Journal* is published in Chicago, and the subscription price is \$2.15 per annum, post-paid. The *Live Stock Journal* is published at Buffalo, at \$1.60 per annum, post-paid. Of course, these prices are in American currency.

## Miscellaneous.

### The Champion Reaper.

The busy season with the Champion people has now fairly begun, and the energy with which they are accustomed to push forward their operations, is beginning to tell in substantial results. It is yet nearly three months till harvest time, but notwithstanding that fact, large shipments of Champion reapers and mowers, to nearly all portions and quarters of the globe, are now being made almost daily. The demand for this popular machine is greater this year than it has ever been before, though for many seasons past it has stood, by the almost unanimous verdict of American farmers, at the head of all harvesters. To meet this increased demand, the manufacturers are now taxing their energies and facilities to the utmost. That the *thirty thousand machines*, which will be ready for the harvest of 1875, will fall under, rather than overreach the demand is now evident.

This morning (Friday, April 2nd) the largest single shipment of Agricultural implements ever witnessed in the United States or the world, took place from the yard and warehouses of the Champion Machine Company. Since Monday morning last a large force of workmen, detailed for that purpose, have been engaged in loading machines preparatory to shipment. The *forty-fourth* car was loaded late last evening, and all things were pronounced ready for the great shipment.

The forty-four cars contained, in all, *one thousand machines* exactly. To avoid the suspicion which ordinarily attaches to round numbers, the effort was made to load on one more machine, as the orders of several of the parties to whom the machines were shipped, were not wholly filled. But the room was lacking, so that the number rested at the even thousand.

The cars were divided into two trains, which started out together.

It had previously been noised about that the New Champion folks were going to outdo all former efforts in a huge shipment of machines that would astonish the natives along the lines of the various roads over which the trains would pass, a crowd of citizens collected, early in the morning, at the manufactory of the Champion Machine Company to witness the spectacle, and it was well worth their while.

It took some little time to get the trains made up, but by half-past nine o'clock they were ready, and the first one at once began to pull out. The scene presented just before the departure of the trains was one to which a high degree of animation was attached. The cars, locomotives and each caboose were gaily decorated with flags, while large, handsomely printed cards, bearing a fine illustration of the Champion machine at work in the field, and the letters "From the Champion Machine Company, Ohio to" (here followed the name or names of the agent or agents, and the town or the city), were fastened to the side of each car. It was a scene that every citizen in Springfield might behold with pleasure, for it was a very substantial indication of the continued prosperity which an enterprise, which has taken a conspicuous place among the foremost manufacturing interests of the world, and which has contributed so largely to the upbuilding of our flourishing city, enjoys.

As above stated, the number of machines was exactly one thousand. Their average value is \$175, which makes the value of the shipment \$175,000. Think of it; it will bear thinking about.—*Springfield, O., Republican.*

### Fish-Culture and Fish Protection.

We resume our extracts from Mr. Wilmot's essay read to the American Fish-culturists' Association:

It does not necessarily follow that the female shall be accompanied by the male in the act of spawning. It frequently happens that whilst she may be deeply engaged in her work, several male fish will be fighting together to gain the superiority of place. Whilst thus engaged, the female is depositing her ova without the vivifying fluid coming in contact with them. Whilst this operation of laying the ova is going on, the bed is generally surrounded by various kinds of small, predacious fish, watching every opportunity to prey upon the eggs.

Trout cause great havoc in this way, and young salmon (parry), chubs, eels, and almost every other kind of small fish lie in wait to perform the same act of destruction of the ova.

Those of the eggs that shall have escaped these perils will be found embedded in the gravel, where they remain (should they escape all other dangers) from October till the following April or May. Various kinds of insects, water bugs, and innumerable aquatic animals, whilst groping about for food, come upon these salmon beds, and perforating the soft, filmy covering of the egg, with their needle-like teeth and sharp claws destroy vast numbers of them.

Add to this a great number that are lost by decay, for all those which have not received the vivifying fluid die, and, becoming putrid, there grows upon them a species of fungus, which, spreading its grasping web, catches in its

poisonous folds any adjoining eggs, killing them at once. This works great destruction to the semi-incubated egg. Clusters of a hundred and more are thus sometimes found in the crevices of the larger gravel in a putrid state. This great scourge of the ova is very difficult to overcome, even in the purest water, and where the greatest attention is given to prevent its growth.

Another great loss of the ova takes place from the formation of anchor ice. The eggs thus having lost their covering of water, become frozen and die. Great destruction is also caused by the shifting and shoving of ice from the effects of heavy freshets. Whole sections where salmon beds had been made are sometimes swept away.

The remnant of the eggs which may have escaped destruction, will in April and May hatch out and become young fry. At this time they are helpless in the extreme, lying prone on their sides, with a large bag or umbilical sac attached to their bodies. In this stage of their existence they remain about five or six weeks, until by a process of absorption, brought about by the increased warmth of the water in spring, the sac hitherto attached to the body disappears, and the little fish, now symmetrically formed, begin to roam about in a lively manner in search of food. From the time of emerging from the shell up to the present time they are still an easy prey for their numerous enemies.

The numerous difficulties above enumerated are by no means all that have to be encountered. There is to be added the destruction by aquatic birds, polluted water, deleterious substances of various kinds, such as saw-dust and rubbish from saw mills, washings from barn yards and turnpike roads, natural and artificial manures, and other foreign substances used upon the soil in farming, draining, etc.—all flowing more or less at times into the streams, and settling upon these beds, to pollute the water and so cause immense losses to fish eggs, and also to the newly hatched out, and as yet undeveloped and very delicate fry.

Of the eggs thus deposited, scarcely one in a hundred ever produces a living fish. Yet withal, fish are so prolific that there would still be enough, were it not for the ruthless and barbarous manner in which they are killed by man, irrespective of the season in which they are foul and unclean for food, and of the time also in which they are in the act of laying their eggs for producing their young.

Having now shown the manner in which the ova are laid by the parent fish in the natural way, and having described the numerous sources from which great destruction results to the egg by that system, it will be necessary to fully explain the method adopted for the artificial propagation of fish.

For this purpose we will commence at the time at which the parent fish shall have reached the spawning grounds in the river or other water, and when the ova and milt have become mature. The eggs are then taken from the female by the operator in as gentle and careful a manner as possible. There are three methods practiced in securing the adult fish, male and female, for this purpose. One is to catch them by means of nets whilst they are upon the shallows, and if found ripe at the time to then and there carefully extract the ova and milt from them. This will be found a difficult procedure, both in the netting of the fish and also in the uncertainty of afterwards finding them perfectly ripe for spawning, and should not be adopted unless it be impossible to procure them by other means. Another plan is to catch such numbers of the adult fish as may be required at the time of their migration up rivers during the summer months, by means of small meshed nets, and carefully put them into ponds or enclosures, there securely to be kept until they become mature for laying their eggs. The other method, which from the beginning has been used at the Newcastle establishments in Ontario, is by erecting a reception house alongside of the stream (through which a sufficient body of water is made to pass), into which the parent fish, on their journey up stream, are enticed to enter through peculiarly formed traps, from whence they cannot return or escape.

[We are compelled, by considerations of space, to reserve Mr. Wilmot's description of the way of conducting the hatching house, till next month].

**TO CLEAR MUDDY WATER.**—A piece of alum as big as a hickory nut will render clear a pail of muddy water. Dissolve the alum, stir and allow the impurities to settle.

**TO CLEAN CIDER BARRELS.**—Pour in lime water, and then insert a trace chain through the bung hole, remembering to fasten a strong cord on the chain so as to pull it out again. Shake the barrel until all the mould inside is rubbed off. Rinse with water, and finally pour in a little whisky.

**PAINTING OLD BUILDINGS.**—An inexpensive but durable method of painting old buildings is as follows: First give them a coat of crude petroleum, which is the oil as it comes from the wells, and which can be procured for four or five dollars per barrel. Then mix one pound of "metallic paint," which is brown or red hematite iron and finely ground, to one quart of linseed oil, and apply this over the petroleum coat. The petroleum sinks into the wood, and makes a groundwork for the iron and oil paint. The color of the iron paint is a dark reddish brown, and is not at all disagreeable, it is a color not easily soiled, very durable, and is fire-proof.