

### Hotbeds.

Numerous failures in the management of hotbeds are annually reported to the Experimental Farm, and this seems to be an opportune season in which to give a few hints with reference to the making and care of this necessary adjunct to the cultivation of flowers and vegetables, as there is absolutely no reason for non-success, provided that proper precautions are taken.

The best material for hotbeds is, of course, horse manure, and this should be as free from straw as possible, though its total elimination is not absolutely necessary to success. Should the pile show signs of heating before it is convenient for building the hotbed, it will have to be turned, which operation must be repeated on every recurrence of fermentation, the last week in March or the first week of April being usually the best period for commencing hotbed work.

There is no doubt that efficiency is increased by making an excavation instead of building on the surface level. By the latter method, the whole surface of the bed is exposed to the cold winds, which causes serious fluctuations in temperature, especially when the hotbed is a small one. By making an excavation two feet deep, and filling this so that, when finished, the manure is about one foot above the level, the foregoing danger is minimized, although care must be taken to select a location where the hole will not become filled with water, and it is unnecessary to add that the position should be as sheltered as possible, a southern aspect with protection on the north and north-west being preferable. A fruitful source of mischief in connection with hotbeds is the careless packing of the material. The manure should be put on in thin layers, each layer being well tramped, as, if this is neglected, the bed is certain to settle and heat unevenly, rendering proper watering and sowing impossibilities. As soon as the bed is thoroughly packed, the frame may be placed in position, a thermometer inserted in such a way that the sun's rays do not strike it, and the sash closed. It is necessary that, when completed, the manure should extend at least one foot beyond the outside of the frame on all sides, and this, of course, must be taken into consideration before building the hotbed, the size of which will necessarily be regulated by the length of sash obtainable. The standard hotbed sash is six feet by three feet, but when these are not available, storm sash, or windows of any description, will answer the purpose, and in order to carry off the rain, the frame should be twelve inches high at the rear, sloping to six inches in front. In the course of a few days the bed will commence to heat, the thermometer rising to 100° Fahr., or even higher, and when this has receded to about 75° or 80° Fahr., the bed may be considered ready for sowing. There are several ways of accomplishing this operation, the one most generally in vogue being to place six or eight inches of soil on the surface of the bed, and sow directly into this. While this may be considered as fairly satisfactory for such plants as *cabbage*, *tomatoes*, etc., it has many disadvantages, and I would not recommend it for tender plants. Perhaps the greatest argument against this manner of sowing is that very often, even with the best of care, the heat will rise a second time after sowing, and as the plants cannot possibly be removed, there is no chance of saving them when this occurs. Another undesirable feature attendant upon sowing directly in the bed is the difficulty experienced in watering evenly, as it is practically impossible to retain an absolutely level surface. By far the better plan is to procure some boxes about sixteen inches square and three inches deep and sow in these; old soap boxes sawn into three answer admirably for this purpose. By this means, should the bed settle unevenly, leveling is easily accomplished, and should it become necessary at any time to remove the plants, it can be done quite easily, and without injury. When the plants are large enough to be handled, they may be transplanted into other boxes or (as by this time there is no danger from overheating in the bed) into the bed direct.

The soil used should always be passed through a fine sieve, and contain a liberal mixture of sand, the latter tending to keep in check that dreaded fungous disease known as "damping off" (which often destroys a large percentage of plants in the hotbed), besides allowing free drainage. Of course, when transplanting, a richer compost may be used, but even then it is desirable to sprinkle the surface with sand. I omitted to mention that when employing boxes, only enough soil should be put on the bed to admit of more easily leveling, and should transplanting be made direct to the frame, this must be brought to the depth of six or eight inches.

Watering should be performed with the utmost care, as many failures may be attributed to carelessness in this respect. Until the plants have become quite vigorous, they should never be watered with the spout of the can, but with a spray attachment, which can be procured very cheaply. Another prevalent error among amateurs is the supposed necessity of regular watering—that is, that the plants must be watered at certain intervals, irrespective of their condition. Nothing is more disastrous to the successful cultivation of plants than this fallacy. No water should be given at any time until it has been ascertained, by the condition of the soil, that they are in need of same, and then a thorough watering should be given, and entirely withheld until the soil is again dry.

Ventilation is an important factor in the successful management of hotbeds. The continuous steaming of the manure renders it imperative that air should be given at all times of the day, when possible, by drawing down the sash a few inches, and on cool nights some covering should be applied. Another necessary precaution is the whitewashing of the glass as soon as the sun's rays become strong, this operation being rendered necessary towards the end of April. When the season for planting out arrives, the frames should be gradually thrown open, so that the plants may be thoroughly hardened off, thus insuring greater success in transplanting. By bearing in mind the above rules, there is no reason for non-success in this branch of horticulture.

Exp'l Farm, Brandon.

H. BROWN.

### Raising Strawberries.

SIR,—I have been very successful in raising strawberries the last four years, so thought I would give you my experience. First have your ground heavily manured in the fall and plowed. As early in spring as it is dry enough, work it up, and when it would do to sow wheat on, it is in good shape to plant. I prefer to set in long rows, as there is less turning around with the scuffer. I put the rows four feet apart, and two feet apart in the row. I grow a hill of early potatoes between each row of strawberries, so the use of the ground is not lost and the plants are taken care of with very little more work than it would take for the potatoes alone. I find it best to pick all the blossoms the first spring, and keep the runners cut back until the first of August. You then have good strong plants, and they will more than repay for the extra trouble. The potatoes are dug by this time, and so do not interfere with the strawberry vines. About the last of November is the time to cover. Before doing this, go over the patch carefully and dig out any plantain, dock or other weeds that might be started. A clean bed of strawberries is a beauty spot in any garden. I cover with manure. Some object to this on account of the weed seeds, but the weeds are easily destroyed, as the roots are in the manure, not in the soil. On a warm day take a hoe, and where you see they have started just stir the manure and the sun will soon fix the weeds. The manure keeps the ground rich, which it has to be if you would get a good crop of berries. Concerning the plants, do not set out inferior kinds, even if you can get them for nothing; they will prove the dearest in the end. But you say, I could not buy enough to set out a big patch. Well, then, start a small one. I started with three dozen plants, and the third year I could have set out several acres if I had wished to. I had several berries that measured between five and six inches around. I sent samples to some friends, and they told me after that they seemed more like apples or oranges than strawberries. I do not say they were all large, but they were a good sample. Our grocer told me he would rather give me fifteen cents a basket than pay ten for others that were offered. There is always a better demand for first-class fruit. Many are of the opinion that only nurserymen can grow first-class fruit, but we can all do it if we only go at it in real earnest. Read good papers, put in practice what you read, and if you set out a strawberry bed, or if you start something else, tend to it wisely. It is sure to prove a success.

L. R. F.

## POULTRY.

### Beginning in the Poultry Business.

If the beginner has not had any experience with poultry, it is best not to begin on too large a scale. Many who know nothing about poultry think there is a fortune in it, and rush into it, investing a large sum of money, and then when they have the equipments and fowls, know nothing about the care of them; the fowls are not cared for properly, and the result is—as nothing else can be expected—a partial or total loss. Then the loser condemns the poultry business, and convinces some others that there is nothing to be gained from the keeping of poultry.

First, money must be invested in buildings, in good foundation stock, and in food and other materials; and, finally, work in the care and management is unavoidable.

The fowls, to do their best, must live in comfort and shelter. The land under and around their quarters should not be wet, and a soil containing stagnant water is especially to be avoided. A slightly elevated site, facing and sloping to the south or south-west, if attainable, is preferable. The cold of winter and heat of summer must be tempered for the comfort of the fowls, if they are to thrive and do well for their owner.

Whatever the form or style of the building intended may be, it should be so placed that the surface water will flow away from and not into or under the house. There have been many forms and plans of poultry houses given in the *Advocate*, some of which are desirable and some are not. Each poultry-keeper ought to make a study of this matter as related to the particular conditions of his location and the scope of his plans. A great many henhouses are adapted only to winter condi-

tions. The nature of each season and of all kinds of weather must be kept in mind, in building, if the house is to provide a comfortable home for the poultry throughout the entire year. Winter and summer quarters and a scratching shed may be combined in one house, or in one room if so desired. Make the interior fittings of the house as few, as simple and as economical as possible, and all easily removable, so that they can occasionally be placed out of doors in the sunshine and fresh air.

I hope that this rough pen-sketch of a plan has made plain the desirability of so constructing a poultry house that the whole floor space will be available for use by the hens; that it will catch the first rays of the sun in the morning, and, unless clouds interfere, be blessed with sunshine in some part of the house throughout the entire day; that the house may be tightly closed and yet well lighted in cold and stormy weather; that it may be opened in front on warm days in winter, and thrown widely open on three sides in the hot summer days.

If the fowls are not to be allowed free range in summer, then, if available, double yards should be provided—that is, two yards for each house or pen of fowls. By having the double yards, the poultryman is allowed to cultivate the soil and grow a crop of green grain in one yard while the other is in use by the fowls.

Make the poultry house and yards as attractive to the eye as possible, instead of being a blot on the landscape and a disgrace to the farm. Plant fruit-bearing trees in the yards, and grapevines trained upon the fences furnish an agreeable shade in summer for the fowls, and an abundance of delicious fruit in the autumn for the owner.

Now comes the momentous question of what breed to select and where to get the best fowls to start with. This is a problem for earnest study, and each beginner must think it out for himself. The quality of the individual birds you select is, however, of more importance than the breed. There are poor specimens in every breed, which would prove unprofitable under even the best of conditions, and this new poultry house should shelter nothing but first-class business birds. Consider the market, the local conditions, and your own likes and dislikes in the matter.

As the chicks grow and develop, note which ones are the most thrifty, the earliest to mature, develop into early layers, resemble most their parents and in what respects, and which come nearest to the type of the breed. Study all this with the idea of learning which birds to select for future breeders. One of the chief points of successful chicken-raising is to keep them constantly growing. To do this, no condition can be tolerated which gives the bird a check in its development.

Dispose of the poultry products direct to the consumer at the time when the condition of the same and the state of the market yield the greatest net profit. In some localities it is better to sell the chickens as broilers or roasters than at maturity, as you will get a better price and the food and care necessary for the added growth and weight may be saved. When culling out the chickens to be killed and sold as dressed poultry, save the promising young thoroughbreds for breeders to replenish your stock, and, in case of a surplus, to sell to other poultrymen who are in need of good breeding stock.

It would be best to keep a record of each pen, at least a record of the eggs laid by each pen of fowls; but it would prove still better and more profitable to keep a record of the eggs laid by each of your best breeders.

A financial record could also be easily and simply kept. Make an inventory at least once a year of all money invested in land, buildings, furnishings, fences, tools, stock, and the estimated value of the poultry and their products on hand. Then, during the year, make an entry of everything that is purchased, including food, tools, lumber, nails, or supplies of any kind, new fowls, etc., and the labor at a fair price. This is all charged against the business.

Then, for the credit side, enter the value of every egg and every fowl sold or used for the house table, and of everything that is disposed of, including the poultry manure and the feathers, if they can be sold, and at the end of the year balance your accounts. The difference between the debit and credit sides of the book will show the profit or loss. We will hope that it is a good round sum on the right side of the account. Of course, if you enter into the business extensively and put up expensive houses, the poultry may not be able to pay for it all in one year, especially if you are not very heavily stocked; but in two or three years, with good management of the poultry and shrewd management of money matters, you should be set on a fair basis. PERRY F. DOUPE.

Perth Co.

The wise farmer needs not to be reminded that there is economy in having all things ready to commence the spring seeding just as soon as the land is dry enough to work well. To this end he will have his seed grain and clover seed well cleaned and ready to sow, his harness and implements repaired, his harrows and cultivators sharpened, and his horses in good condition for the work. The early bird gets the worm, and the early-sown grain generally turns out the best yield at harvest. It is well to be ready for early seeding, but not well to begin before the land is in fairly good condition.