

Tables are always more intelligible when calculated upon the basis of 100 pounds milk than upon 100 pounds butter. When I made out the above table on the basis of 15 per cent. of overrun, I did so with the knowledge that that factor may be reached in any well-managed creamery. The American factor agreed upon by the Society of Agricultural Chemists of the U. S. is about 1 1/2, equal to a fraction above 16 per cent. My experience in this matter is that where any maker claims to make more than 15 per cent. overrun, it is usually the result of reading the tests too low or of incorporating into the butter more water or curd or both than the manufacture of a good creamery butter, with satisfactory keeping properties, will admit. The W. D. S. has been making this year to date, as nearly as may be, 15 per cent. more butter than butter-fat. F. J. S.

Mr. James Stonehouse, Manager of the St. Mary's, Ont., creamery, a very large buttermaking enterprise, as our readers are aware, writes as follows:

"In answer to your enquiry of the 8th inst. re butter and butter-fat, I would say that I consider your estimated increase of butter over butter-fat rather too high for the average. I have had 20 per cent. of an increase, but in such butter the per cent. of moisture is excessive, and would come under the head of adulterated butter in the British market, or at least would be liable to. The tendency now is towards a drier butter, and if I have 15 per cent. of an increase I consider I am about right, but 13 per cent. is the lowest and 20 per cent. is the highest I have ever had. I know of one creamery which went as low as 7 per cent. increase last summer and 23 per cent. this winter. In other respects I think your answers to the questions are right." J. S.

[NOTE.—See also Mr. Sleightholm's reply to a Huron County subscriber's queries in our Questions and Answers Department of this issue.—EDITOR.]

POULTRY.

Liberal Feeding Will Make Hens Sit.

To the Editor FARMER'S ADVOCATE.

In reply to "Esme," Ont. County, Ont., I would like to say that no hen will sit while she is poor. Give her lots of feed without much scratching, and she will soon sit whether she has more than a nest egg or not. The heavier breeds fatten quicker, and will therefore sit earlier. W. J. L. Neepawa, Man.

Beginnings in Turkey Raising.

Turkey-raising is not by any means the least of the many departments which come under the title, poultry. It is, perhaps, the most important when considered as bug-devourers. Especially is this so when grasshoppers are plentiful; then a flock of fifty turkeys will destroy thousands, and prevent the hatching of millions of these destructive insects. But they are also profitable in a more direct manner. We realize this when looking over accounts at the end of the year; also, when we find one cooked and on the dinner table. At present, however, I shall not go any further than the care and treatment of the eggs and the baby turkeys.

Though I have always had better success with the turkeys which were hatched after the weather becomes warm in June, yet this year on account of the warm weather in March a great number of eggs will be laid long before the first of May. While I have known of turkey eggs being shipped hundreds of miles, being delayed in express offices, and afterwards producing a good percentage of chicks, yet this treatment is not necessary nor even advisable. It is safer to set them within three weeks after they have been laid, and during that period they should be kept in a fairly cool place where they will neither get chilled nor warmed, and they should also be turned every day to prevent the yolk from settling to one side. When enough eggs have been collected for one, two or three hens it is advisable to set them. One can seldom be so successful without a special room for sitting hens. In it there should be a row of roomy nest boxes, which at this season are kept for sitters only. These are very handy if they have but one or two doors which open downward, forming when open a walk in front of the nests, which should now be nicely lined with straw, etc., and the eggs put in. For small hens, in cold weather, seven turkey eggs are sufficient, though a good-sized hen will often bring out eleven turkeys, provided that she have eleven eggs. The next step is to choose the best sitters;—good old motherly Plymouth Rocks are my favorites. They are dusted with insect powder, and introduced to the eggs. They usually "cuddle doon" when the door is closed, and not opened until a convenient hour the next day, when food and water are put down. Should the hens fail to respond to this invitation, they should be carefully lifted from the nest. They may be left to pick, bathe in a box of dust or otherwise amuse themselves for nearly an hour. There should also be a box of gravel, as fresh grit may be required before their term of imprisonment expires. At the end of an hour the majority of the hens will have returned to the nest. This house accommodates all sitters, whether on hen, turkey or duck eggs. Many of the newcomers have not found a nest; they should

be driven towards it, and they will soon learn to take possession, while occasionally two may be found on one nest. When all are settled the doors are shut for another day.

One old turkey will easily mother from twenty to thirty young ones. Twenty-six is the largest flock I have had brought to maturity by one old turkey. For to get this number one should set not less than three hens. I have not said anything of the turkey as an incubator, as early in the season it seems to be a waste of valuable time to keep one sitting four weeks, though I try to arrange so that one may be broody at least two or three days before the young birds are hatched. Where one has two or three, the earlier turkeys may be made to lay again in a few days, and the latest sitter will be ready to take the little ones. By putting her in a coop, then introducing the flock, she will at once adopt them. For several years I have used this plan.

As parasites are the greatest enemies to young turkeys, the mother should be dusted with insect powder, and a dust bath provided for the little ones, prevention in this case being surely better than cure. The coop should be whitewashed on the inside as well. If the weather be cold and damp they should be kept in a well-lighted, dry room for a few days, as dampness often means death. GYRA.

APIARY.

Bees Successfully Kept in Manitoba.

To the Editor FARMER'S ADVOCATE:

SIR,—According to request, I send you a report of the results obtained from my apiary for 1897. This may be told in a few words. It was pretty much a repetition of 1896. The weather was rather unfavorable, and the honey crop about the same—30 pounds per colony, spring count, less than one-third obtained prior to that date. There was, however, some marked differences between the two years; in 1896 there was excessive swarming; in 1897 only three swarms, all told, late in the season. In 1896 there was a tendency to rob; in 1897 this tendency was greatly intensified, so much so that it was with difficulty that even extracting could be performed only in the morning or evenings, something very unusual in my experience. They seemed to await my actions, and immediately upon my removing a hive cover they were there in great numbers, and unless the cover was immediately replaced the life and death struggle would immediately commence. There is this difference between the bee and some bipeds: they will only steal when they cannot get it honestly.

A few remarks on the wintering problem may be opportune: Strange as it may appear, there are many people in Manitoba who are skeptical about bees wintering here; in fact, there are many who are not aware that they exist here at all. This surely is not as it should be. There are ample means through the press to disseminate facts to the masses. Brother beekeepers, let us stir up and use the good old ADVOCATE for instance (yes, it is old, but as its years of existence roll on its vigor increases), let us use it as a medium for the exchange of results from the different systems that may be adopted, and the conditions under which they are carried out. Be candid, friends, and much good may result. But I am digressing. My experience in wintering bees is that they can be as easily wintered as any stock on the farm, and far less trouble. The preparation for winter should begin not later than the first week in September by removing all "supers" and examining each hive to make sure that it contains at least 30 pounds of sealed honey. If there is more I never remove it, and any deficiency is supplied by inserting sealed honey. I prefer to have sealed honey in all the frames, as it is more convenient for the bees to feed in winter, and less chance of any getting chilled. When further prospects of flying is past they should be placed in a repository for the winter, where the temperature will remain as near 45 degrees as possible; never below 40 or above 50 if it can be avoided, but rather the former than the latter. Remove the cover; place over the hive several folds of cloth of a porous nature, that will conserve the heat and allow the moisture to escape—woolen is good. Leave the entrance open, then leave them alone until spring. It might be necessary to clean the entrance of dead bees by means of a bent wire, but care must be exercised, as in many cases the cluster of bees reaches to the bottom board. Bees will winter in any ordinary root cellar, under a dwelling house if properly ventilated, and out of doors if properly protected, but an air space in front of the hive must not be omitted. They will also exist in a temperature around the freezing point; so will stock around a straw stack or shivering in their stables, but the result is quite apparent, and the greater part of summer is consumed in bringing the stock to the point they had reached the previous fall. So it is with bees—a low temperature injures their vitality, and in consequence they lack energy in the spring, if they do not dwindle and die out altogether; breeding is retarded and the results are nil. A low temperature also causes moisture in the hive, which the honey, especially if not capped, will readily absorb, and the results are often disastrous to the bees. Should moisture appear on the combs, steps should be taken

at once to remove it by placing hot bricks on the top of frames, but not touching them, as the combs might melt. JAMES DUNCAN. Franklin Municipality, Man.

GARDEN AND ORCHARD.

Time to Prune Orchards.

"Please let me know through the FARMER'S ADVOCATE which is the best month in which to prune an orchard?"

Light pruning may safely be done at any time of the year, but for the regular annual pruning the best time is early in the spring, after the severe frosts are over and before growth has started. Pruning at this time will not check the vigor of the tree, as is the case when the pruning is put off till the growth has started. H. L. HURT, O. A. C., Guelph, Ont. Horticulturist.

A Test for Purity in Paris Green.

Paris green is the most satisfactory substance yet discovered for the destruction of those insects which, like the canker worm, gnaw their food, taking a part of the tissues of the leaf into the stomach. But, unfortunately, this poison is capable of being adulterated with cheaper substances by unscrupulous manufacturers, and the use of these impure brands means not only a loss of time and labor, but, what is much more important, it means that our enemies will gain such a start of us that we will be unable to destroy them. Paris green may, however, be tested when it is purchased and thus all difficulty avoided. A simple and reliable test is the following: Put into a small glass bottle a little strong ammonia, perhaps a table-spoonful, and into this put a little of the material to be tested. If it is pure Paris green it will quickly and completely dissolve, forming a clear, dark blue liquid. But substances such as chrome green, which are most commonly used to adulterate Paris green, will not dissolve. Any residue may be considered as an impurity. F. O. SEARS.

Small Fruits, and How to Grow Them.

BY A. E. SHERRINGTON, BRUCE CO., ONT.

(Continued from page 154.)

Every farmer's garden should contain a few gooseberry bushes, but the grower must be governed by his circumstances as to the amount required. If only for home use a very few bushes will do, as they are so prolific. Often as high as 15 to 20 quarts are produced per bush. The growing of the gooseberry is very easy. The best soil is a deep, moist clay loam. The rows should be from five to six feet apart, and the plants four feet apart in the row. This will give ample room for growth and cultivation. Two-year-old plants should be used. Dig the holes large enough so that there will be no crowding of roots when planting. Good cultivation with liberal fertilizing is necessary as well as for all other plants. The pruning should be attended to annually. The fall is the best time to do this work, after the plant has become established and bearing. Two or three branches of the old wood should be removed annually, allowing as many young shoots to take their place, as the young wood always produces the finest fruit.

In my estimation the Downing is the most suitable for the farmer, as it is free from mildew and a strong, upright grower; fruit good size, fair quality, and a heavy cropper. Peral is another good variety, similar to Downing, perhaps a little better yielder.

Currants.—The growing of the currant is similar to the gooseberry, so much so that it is not necessary to describe it here. The currant or gooseberry worm will have to be looked after, as it attacks the gooseberry as well as red and white currants. The first brood hatches out in the early part of the season, near the ground in the center of the bush. A few applications of white hellebore, put on dry with an insect duster or a cotton bag after a shower or when the dew is on, will keep them in check. Black Naples and Black Champion I think will be found to give the best results over the largest section of country. Of red currants, Cherry variety has fruit large, bunches short, plants vigorous and fairly productive. Fay's Prolific is similar to Cherry, probably bunches a little longer. Among the white currants White Grape is the best in its class.

Raspberries.—This is a fruit that is much sought after, and will be more so as the wild species are becoming more and more scarce. There are no reasons why every farmer should not have a supply for home demand, as they come in just after the strawberry, thereby supplying the table with fresh fruit for the greater part of the season. Once properly planted they will last for eight or ten years. Black raspberries should be planted in rows from six to seven feet apart and three feet in the row. Spring planting is best. Have the ground worked deep and fine. Make the holes large enough so the roots of the plant can be spread out well, dip the roots of the plants into a pail of water, then set, working the soil well in around the roots, but be careful not to break off the young shoots that have started, as they are the canes for the next year's crop. The red varieties can be planted in rows five to six feet apart and three feet in the row; as they propagate by suckers, they will soon fill in the space between. When once set they can be cultivated in the form of a hedge row.