

should be kept in the cages for three weeks. During any shorter period of treatment, the influence of the soft food on the flesh has not sufficient time to exert its full effect. If, however, it were purely a matter of producing flesh at a minimum cost per pound, it would be more economical to keep the birds up for, say, a fortnight instead of three weeks, causing a saving both in labor and food, as it has been proved that the amount of food that will produce one pound increase in a lean animal is less than that required in the case of a fat one, and the fatter the animal the greater the amount of food required to produce one pound of increase.

The birds fattened in the first trial were thirty-two. They consumed 188 lbs. of meal, $7\frac{1}{2}$ lbs. of fat, and $7\frac{1}{4}$ gals. of skim milk, the total valued at 17s. 2d. After testing several mixtures of the grain, the following was found to give best satisfaction, and consisted of finely ground oatmeal, barley meal, and finely chopped hay containing only soft and young grass. In mixing, the hay was first steamed for about twelve hours, so that it was quite soft when mixed with the meal. The sixteen chickens fed on this mixture kept perfectly healthy and made rapid increase of weight. The milk, and, in fact, all the food, was fed perfectly sweet and fresh, as it was found that sour food seriously deranged the systems of the birds. In fattening chickens in this way, weight of carcass is not the only consideration, nor does it in itself afford evidence of the fatterer's skill, as a large proportion of the weight may be internal fat. If fattening be carried to excess in the early stages—that is, if more food is consumed by the bird than it is capable of converting into flesh—the excess will tend towards the formation of fat. Further, if the food is deficient in nitrogen or flesh-forming matter, and the proportion of carbohydrates is excessive, a part, varying according to the extent of the deficiency, is not only wasted, but is even acting in opposition to the fatterer's aims. The albuminoid ratio of feeding stuffs and their profitable utilization for poultry is a subject of the utmost importance, and is a matter on which there is room for investigation on the part of the chemist and the experimenter.

Referring to the quality of the chickens, Mr. Cathcart says that, judging from the complimentary letters received from various customers, the birds have been much appreciated. One lady wrote: "Some friends unexpectedly came to luncheon, and we all seven lunched off one chicken, which was more than sufficient to satisfy all. It was quite equal to two from the poulterers here, only of far better quality." A caterer in York wrote: "I enclose cheque for £11 for chickens, which I must say are the best I have ever had. Please let me have the next ten couple, to be here on the 27th inst., and if you can supply more please let me know."

Speaking of establishing chicken-fattening establishments of this sort, Mr. Cathcart says there are a great many things to be considered and numerous obstacles to be overcome, and any premature attempt would probably end in failure. It is, however, he believes, practicable to adopt the system of fattening poultry throughout the country, and, further, that in time every district will contain a fattening establishment which will abolish the hard, scraggy fowl which at present predominates in our shops.

It will thus be seen that this system of poultry-fattening, whether conducted in England or Canada, produces highly satisfactory results. The work along this line already done in Canada, and especially that conducted under the direction of Prof. Robertson, and already reported in the FARMER'S ADVOCATE, should leave no room for doubt in the minds of enthusiastic poultrymen and poultrywomen as to the advantages of intensive fattening as above described.

GARDEN AND ORCHARD.

Export Apple Trade.

In spite of the fact that the home markets for our fruits are rapidly being overstocked, and for the last two or three years have been almost continually glutted, and in spite of all that some private shippers, the fruit-growers' associations and the governments are doing to assist in building up a foreign market for our products of the fruit industry, there are some shippers unscrupulous enough to carry on their business in such a manner as to make all this labor and expense worse than useless. The findings in connection with the salvaged cargo of the ill-fated steamer Castilian give sufficient evidence that such is a fact. Reports had been received from the commission men in the old land that some of the apples being sent over were of inferior quality, but no one ever suspected that such deception was being carried on and that such rubbish was being forwarded as a sample of Canadian apples until the Castilian disaster.

How such unscrupulous work is to be detected and proper justice meted out to the ones practicing the deception in the future is a problem that will prove very difficult to solve. Some means must, however, be resorted to to stop the nefarious practice. If not, the hope of a market with remunerative prices for Canadian apples in Europe will never be realized.

Things have assumed a very peculiar attitude. On one side we see what we trust and believe is a

band of honest growers and shippers. These, in the hope of making the great fruit industry of Canada a more paying one, have by honorable means attempted to secure the European market. They have, individually and collectively, through the medium of the fruit-growers' associations, asked assistance from the Government in the way of cold storage warehouses, rapid transit, and ventilated ship holds, that the fruit might be exported in a proper condition. Hon. Mr. Fisher, seeing the need of the same, has, with the assistance of Prof. Robertson, done all in his power to assist the Canadian fruit-grower. But on the other side we see shippers resorting to methods that will only undo the good work being done, and will too soon ruin our export trade. Is it any wonder that Hon. Mr. Fisher and Prof. Robertson are disgusted with affairs as they are at the present time?

There is one thing that I believe should be, and trust will be, done—the shipper that forwarded the consignment of apples in the cargo of the Castilian should be hunted out and his name exposed to the public. It is no more than right that those who are trying to secure this market should know who is carrying on such unscrupulous work, and I believe such an investigation would not be only popular, but would also bring good results.

But what about the future? It has been said, "When the trade at stake is of such magnitude, Parliament should speedily take measures to regulate it." It is a very easy matter to make such a statement, but it is altogether another thing to do the "regulating," and many articles written concerning such regulation are conspicuous for not mentioning any method by which the work might be done. There are many difficulties in the way of Government inspection. In fact, it would be impossible to inspect the fruit before shipment unless the work was done while the apples were being originally packed. And this would mean a large army of inspectors—one for each gang of apple-packers—and would necessitate such an expense that it would be impracticable. Then the idea of inspection at the wharf cannot be entertained. If there is to be any inspection at all, it is quite evident that it must take place after the fruit has reached its destination. This might be done by having three or four inspectors, one in each of the largest cities to which our apples have been shipped, as London, Liverpool, Hamburg, etc. These men could inspect the packages when they were opened up. They could keep in contact with those dealers who handled the products in a retail way, find out from them if there was being any deception practiced. If there was such work being done, the unscrupulous shipper could be hunted out, reported, and dealt with. A shipper would not wish to be exposed more than once, and neither would a commission merchant wish to handle produce from one having such a record. Deal with it as you may, the question of "inspection" is a difficult problem.

There is undoubtedly a bright future for Canadian apples in Europe—if the trade is carried on honestly and the market is once established. To secure this export trade, we must forward fruit of excellent quality, properly packed in neat, strong and honest packages. The grading must be high and strict, and there is no question about good sales, for the demand is so great that "glut" is never thought of.

The growers and shippers should all combine to make the Canadian export apple trade an undisputed success, and the necessity for Government inspection will be a thing of the past. The problem lies in their hands, and by strict honesty can be speedily solved.

JOHN B. PETTIT.
Wentworth Co., Ont.

Why Some Varieties of Fruits are Not Productive.

BY W. T. MACOUN, HORTICULTURIST, CENTRAL EXPERIMENTAL FARM.

Very few good crops of any kind of cultivated fruit are secured nowadays in Canada without much attention and intelligent labor; and the farmer who does not use his brains and the experience of others has little or no profit in growing fruit. The great importance of spraying, fertilizing, cultivating, and judicious pruning are, however, being gradually impressed upon him, and no farmer need plead ignorance of these essential factors in successful fruit-growing. But there are other principles involved which are not yet so widely known, nor have yet been made so generally prominent. One of these is the understanding the importance of the relationship which the flower and its parts bear to the fruit which is produced; the understanding what is meant by a perfect and an imperfect flower; a bisexual, a staminate, and a pistillate flower; and a self-sterile and a self-fertile variety; and most important of all, the knowing which varieties may be qualified by these different terms. Flowers, like animals, have sexual organs. As a rule, a single flower contains the male and female organs. When this is the case, and these organs are able to perform their respective duties successfully, the flowers are called perfect or bisexual. There are exceptions, however, where the parts of a flower, although appearing perfect, do not perform their functions successfully. There are also cases where a plant may have flowers, some of which contain only female organs, and some only male organs; and there are plants which bear only male and others only female flowers. These are called im-

perfect. If the male organs only are present the flowers are called staminate, and if the female only, pistillate. A self-sterile variety is one which has only staminate or pistillate flowers, or flowers possessing both organs, but which are of themselves incapable of producing fruit. A self-fertile variety is one which has perfect flowers, which produce fruit without the aid of another variety. Staminate flowers are easily recognized by the numerous small yellow bodies called anthers, which one sees when looking at the flowers of most of our cultivated fruits. From these club-shaped bodies, when they are mature, a fine dust called pollen is emitted, which is disseminated by wind or insects to the pistillate flowers, and these are thus fertilized. A pistillate flower is readily known by the prominence of the pistil or female organ, the anthers being absent altogether or but imperfectly developed. When the flower is perfect it may be fertilized by its own pollen, but very frequently the pollen from another flower of the same variety or same class of fruit is more effective. It will be seen, therefore, that it is of the greatest importance that the fruit-grower know whether the variety he is planting requires another in close proximity to it in order that a full crop of fruit may be borne. Occasionally one hears of an enterprising man who has several varieties of strawberries, one of which he finds outyields all the others. He determines to discard the poorer-yielding varieties and plant only the one kind. He plants an acre. The year following his plants are a mass of bloom, but no fruit sets. The cause is attributed to cold winds, frost, or possibly great heat. In despair he writes to an expert, and on inquiry it is found that he is growing Warfield, Crescent, or some other pistillate variety. He is advised to plant every third row with such varieties as Clyde, Parker Earle, or Beder Wood, which have bisexual or perfect flowers, and the following season he is a happy man. While the fact that the flowers of different varieties of strawberries may be perfect or imperfect is probably taken into consideration when planting by most of those who make a business of growing fruit, it is not known by a large majority of farmers, and from lack of knowledge on this point they often suffer considerable loss, and are in great perplexity as to the cause of the unfruitfulness of their strawberries.

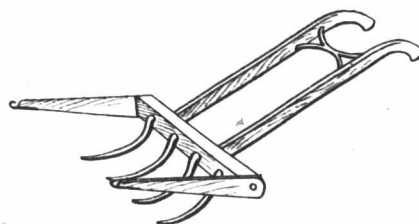
Of late years horticulturists have been examining more carefully the flowers of apples, pears, plums, and grapes, and they have found that in these fruits also there are some varieties which are self-sterile and some partly self-sterile, although to the casual observer the flowers in many cases appear perfect. It, therefore, becomes necessary in order to produce a maximum crop of these fruits to judiciously intermix varieties. It is also important to intermix varieties which bloom at the same time, so that the male and female organs of the flowers on each will be in the same condition, and can thus be fertilized by the aid of wind and insects. Already lists have been published of apples, pears, plums, and grapes which are self-sterile or partly self-sterile, and as information is gained these lists will probably be made more complete. Every farmer, then, who contemplates planting an orchard or vineyard should make enquiries before setting out his trees as to the different varieties which should be intermixed, so as to produce the best results.

San Jose Scale Commission.

A strong Niagara district deputation recently appeared before the Ontario Government to protest against the carrying out of the provisions of the San José Scale Act by the destruction of affected trees. Objections have been raised through the press as well that such drastic measures were not necessary, and that the results desired could be accomplished by spraying, washing or fumigation. Complaint was also made that the 50 cents per tree compensation allowed was totally inadequate, as on a low estimate the trees were worth \$8 each. After careful consideration the Minister of Agriculture, Hon. Mr. Dryden, recommended the appointment of a commission to enquire into the subject, the commissioners named being Dr. Mills, President of the Ontario Agricultural College, and Mr. John Dearnness, Public School Inspector, London; a third may be chosen. The commission is empowered to take evidence in the fruit-growing districts, and will begin the investigation forthwith.

HELPING HAND.

Manure Turner.



J. S. NICHOLS, Oxford Co., Ont.:—"I give you a rude drawing of a manure turner that I have seen at a neighbor's which may possibly suit your Dakota inquirer. The tines are made of $\frac{3}{4}$ - or $\frac{1}{2}$ -inch iron and it turns over something like an ordinary scraper."