

tallowiness are due to cleavage of the butter-fat, rancidity through bacterial or enzymic action or both, and tallowiness through chemical action. The characteristic flavor of cold storage butter and its derivations such as oily, metallic and fishy flavors, are generally assumed to result from the decomposition of the non-fatty constituents of butter.

"5. The most active agents bringing about deterioration of butter in cold storage appear to be cream with a high acid content, the presence in cream and butter of metals, such as copper and iron, and their salts, and the air incorporated in the butter and bacteria and enzymes; though the influence of micro-organisms is considered of indirect rather than of direct nature.

"6. In order to insure, with reasonable certainty, butter of good keeping quality, and minimum deterioration in commercial cold storage, the butter should be made from cream of good quality and low acidity, transported in cans that are free from rust, and handled in vats, pasteurizers and conduits properly tinned and the surfaces of which are kept bright and free from accumulations of oxidized or dissolved metal. The pasteurization should be thorough and preferably by the flash process at 176 degrees F. or over, or the holding process at 145 degrees F. for 30 minutes. The butter should be worked in the normal way, avoiding over-churning and over-working and excessive incorporation of air. All equipment and rooms in the factory in which the cream and butter is handled and exposed should be kept clean, the butter should be packed and stored under approved conditions and should reach the cold storage with the least possible delay after manufacture."

Western Ontario 1919 Dairy Statistics.

Dairy production statistics for 1919 in Western Ontario have just been collected and compiled for the Bureau of Industries by F. Hens, Chief Dairy Instructor or Western Ontario. These statistics show an appreciable growth in the dairy industry of this portion of Ontario especially where values of dairy products are concerned, the increase in this respect over 1918 amounting to no less than \$5,000,000. The total dairy production of 269 factories, including 125 cheese factories, as well as the condensers, milk powder plants, auxiliary, city dairy plants, etc., possessed a value of \$24,971,188.30 made up as follows: 25,833,912 pounds butter creamery worth \$14,043,624.60; 17,196,301 pounds cheese worth \$4,696,653.82; 224,449,006 pounds milk sold to condensers, milk powder plants, auxiliary city dairy plants and including milk shipped by cheese factories in fall and winter, worth \$2,756,484.84; cream sold as above worth \$53,287.18; 171,381 pounds whey butter worth \$87,487.87; whey cream sold worth \$62,565.09; 526,062 pounds butter made at combined factories worth \$271,084.90. These values are net values to the patrons who supplied well over 1,000,000,000 pounds of milk of which 194,834,493 pounds went into cheese and about 650,000,000 pounds into butter, in addition to the condensery, milk powder, and city milk supply. The county of Oxford makes a wonderful showing. There were produced in this county in 1919, 5,324,980 pounds of cheese worth \$1,475,748.60, from 61,689,429 pounds of milk; 146,348,838 pounds milk sold for city milk condensery and milk powder purposes worth \$3,746,913.28; whey butter worth \$12,585.28; whey cream worth \$26,316.93; 259,405 pounds creamery butter made at creameries worth \$143,238.36; and 71,100 pounds butter made at cheese factories worth \$41,007.01. Thus from 216,300,892 pounds of milk manufactured in the county patrons received practically \$4,000,000, in addition to what was sold to milk distributors for local consumption. In other words Oxford county alone could have supplied in 1919, after meeting the requirements of its population, more milk than was utilized in 1918 by the combined condensing milk powder and evaporated milk industries in the whole Province of Ontario (216,300,892 pounds as compared with 216,237,844 pounds). To put it another way, Oxford county sold last year an amount of milk equal to 83 per cent. of the total quantity required for the whole condensing industry over the whole of Canada in 1918. Who says dairying in Oxford is going backward even though there were only 5,000,000 pounds of cheese produced instead of 12,000,000 pounds which has been the case in times past? One thing is very interesting. One company alone bought 74,153,000 pounds of whole milk from dairymen in Western Ontario in 1919. Another bought about 50,000,000 pounds and seven companies, two of which each used less than the largest cheese factory, bought nearly as much milk as the 125 cheese factories in all of Western Ontario. This sounds like

one reason for the organization of milk producers associations.

HORTICULTURE.

More Commercial Orchards Needed.

It is common to differentiate between the so-called "farm" apple orchard and the "commercial" orchard. There is, however, no clear-cut definition between them that we know of because a farm orchard may readily be a commercial proposition. There is, however, this reason for the difference, that the farm orchard is, generally speaking, rather small and forms only one of several lines of production which position tends to minimize its importance in the eyes of most farmers. The growing of fruit is a minor proposition on the average farm, and the farmer with an orchard of five acres or less lays far too much emphasis on this fact for his own good. The commercial orchard, whatever its size, is operated as a separate proposition with the idea of making as much money from it as possible. It is usually larger than the farm orchard, and may run from five to a hundred acres. Even the smallest commercial orchard, whether on a mixed farm or on a straight fruit proposition, is run so to speak for itself alone and not primarily in relation to other crops and lines of production. The fact is abundantly recognized if the owner is a good grower that spraying must be done at certain times to be effective. Pruning is done every year as heavily as necessary, and not merely on off days when nothing else is pressing. The orchard is cultivated and fertilized with the idea of producing full crops of good fruit and not merely to keep the trees alive. Apple growing is made a business by the "commercial" grower, and not merely a sideline to hog raising or wheat production. The commercial orchard, in other words, is more of a specialty, and thus receives more attention than the farm orchard, although as intimated before some farm orchards can properly be classed as commercial orchards, because they are given the requisite amount of attention and care. Unfortunately for the quality of fruit production



Ideal Cultivation in a Niagara District Peach Orchard.

in Eastern Canada, apple growing has been encouraged with too little thought of the ultimate results. In one sense this encouragement was justifiable because there are very large acres in Ontario and Nova Scotia, for instance, where orchards have been freely set out and where, owing to fortunate combinations of soil and climate, excellent fruit can be produced. The unfortunate part of it all is that much fruit is not produced, because the bulk of the orchards are from orchards which have been set out because Neighbor Jones had a well-cared-for and profitable orchard. Just how the orchard would fit into the rest of the farm scheme was never considered, and in a great many instances what could be a real money-making proposition degenerates with increasing age into an eyesore. The average owner of a mixed farm has not the right turn of mind for successful fruit growing. The significance of such orchard operations as spraying, pruning and the growing of cover crops is not appreciated, because the other crops common to the farm do not require these operations, and the result is a run-down, unproductive, sod orchard that is a losing proposition.

We need more orchards of the commercial kind. We need orchards that will be cared for and made assets of the agriculture of Eastern Canada. There is abundant opportunity for the development of the apple industry, because we can grow first-class fruit. As it is we cannot even hold our own markets against competition, and our apple industry is rapidly going backward. We want to encourage men to grow fruit of a high quality in our best apple areas so that the land there will be used to best advantage. If farm orchards

are planted they should be large enough to warrant special attention, and there should be some study of the relation of the apple to other farm crops in order that more land may not be made unproductive, due to occupancy by poorly-cared-for orchards. For the commercial orchard of five acres or more—preferably ten acres or over—there is undoubtedly a bright future ahead if an effort is made to grow good fruit, but for the small farm orchard, unless it is practicable to give it the same degree of care as will more certainly be given a larger one, the future as we view it is entirely problematical. The man who has a small orchard, no matter who he is, is foolish not to take care of it as well as possible, but we feel also that the man who contemplates planting a small orchard (under five acres) at this time at least, is foolish if he goes on with it.

POULTRY.

Last year's oats are poor laying feed. They contain far too much hull for the hen to digest economically.

With careful culling and intelligent feeding it will pay to keep at least one hen per acre on the average farm.

Cull the flock now and market the poor hens. One third at least of the birds in the average flock should be disposed of.

If the hens are not laying try giving some sour milk to drink. Even clean, fresh water is not available for some farm flocks.

When choosing a poultry house plan for the farm flock either the open front type or the one with a straw loft will prove satisfactory.

Separate the sexes of the growing chickens as soon as possible. The lighter breeds, such as Leghorns should be separated at six to eight weeks old.

Perhaps the hens would lay more eggs if they got more to eat. If a hen must work long hours to keep herself alive she has not a great deal of time left for egg production.

Look for the hen that has a deep body, especially behind. The pelvic bones should be thin, pliable and far apart and the wider the span between the keel bone and the pelvic bones the better.

If you see a hen going lame or if you find one that is extremely light in weight the chances are that she is tubercular and should be killed and buried. Every such hen is a menace to the remainder.

If by any chance some hens should be found in the flock that are too fat as shown by a heavy weight of fat behind, they should be marketed as they may die of apoplexy if the weather should get too hot.

Poultry Record of Performance "A".

In a recent issue the rules and conditions surrounding the egg-laying competitions constituting the Record of Performance "A A" for poultry were given. It is now announced that the Live Stock Branch, Department of Agriculture, Ottawa, is now ready to receive entries for section "A" of the R. O. P., namely, the inspection of trap-nested flocks on individual poultry plants. The R. O. P. for poultry is similar in purpose to the record of performance for cattle and is open to any breeder of poultry in Canada. Owners of flocks not being trap nested can only qualify birds by entering them in one of the standard egg-laying competitions under section "AA", but where birds are being trap-nested qualification can be secured through a system of inspection maintained by the Poultry Division of the Live Stock Branch, Department of Agriculture, Ottawa. If the inspection proves satisfactory to the inspectors certificates will be issued for all birds that have laid 150 eggs or more in 52 consecutive weeks. Those desiring to make entries should communicate with the Department at Ottawa and secure an application form together with a copy of the rules and regulations. The following are the rules and regulations governing section "A" of the Record of Performance for poultry:

All entries shall be made upon forms supplied by the Department and subject to the following rules and regulations.

All entries should be addressed to the Poultry Division, Live Stock Branch, Ottawa. Envelopes so addressed do not require postage.

Applications for entry must be received at Ottawa, at least thirty days in advance of the date it is intended the record shall commence. No entries will be accepted after December 1st.

Only pure-bred stock of standard varieties and free from standard disqualifications may be entered.

The minimum entry shall not be less than ten birds from any one flock, and all birds entered shall be identified by a sealed and numbered band.

There shall be a minimum entry fee of five dollars (\$5) for the first twenty-five birds entered or part thereof and an additional entry fee of two dollars and fifty cents (\$2.50) for each additional twenty-five birds or part thereof. Entry fees shall accompany the application for entry. Fees should be forwarded in the form of a Post Office Money Order or Express Order or certified cheque