

"When the second generation grades of the three breeds are taken together, a sufficient number of records are brought together to afford a more definite basis for determining the influence of a pure-bred sire in increasing milk and fat production. The average production of these cows proves to be 8,401.9 pounds of milk and 358.17 pounds of fat, or an increase in two generations of 130 per cent in milk and 109 per cent in fat, which is a striking tribute to the pure-bred sire."

FEED PERSISTENCY AND CONFORMATION.

Commenting upon the relative monthly productions of the scrub cows as well as the two generations of grades descended from them and the pure-bred cows in the college herd, the investigators say: "It is evident that the scrubs decreased much more rapidly in production than did the pure-breds, while the first generation grades were intermediate between them. The second generation grades are not in sufficient numbers as yet to give a good curve of monthly production, but it is evident from the records available that so far as persistency is concerned, they will be better than the first generation grades and approximate closely the performance of the pure breeds. One of the main reasons for the poor production of the scrubs used in this investigation was their lack of persistence and the improvement in this point brought about by the use of good pure-bred sires is evident."

Feed costs were also studied and it was found that "the three-quarter bloods give cheapest production and the half bloods next, showing that grading up the herd through the use of pure-bred sires not only gives increased production but also lowers the cost of production." Improvement in conformation was also notable and we are told that "many of the second generation grades would be considered uncommonly good representatives of the breed the blood of which they carry." The accompanying table summarizes the results in production of the two generations of grades and their scrub ancestors.

INFLUENCE OF PURE-BRED DAIRY Sires ON TWO GENERATIONS OF GRADES FROM SCRUB COWS.

Breed	Dams				Daughters				Granddaughters				Increase in production			
	No. of cows	No. of lactations	Average production		No. of cows	No. of lactations	Average production		No. of cows	No. of lactations	Average production		First generation		Second generation	
			Milk lbs.	Fat lbs.			Milk lbs.	Fat lbs.			Milk lbs.	Fat lbs.	M. %	F. %	M. %	F. %
Holstein	2	10	3782.0	176.22	2	11	6839.6	273.46	2	3	11126.7	420.06	81	55	194	138
Guernsey	2	6	3686.5	168.01	2	7	5101.5	241.00	2	2	5810.1	300.83	38	43	58	79
Jersey	1	7	3463.3	168.00	1	3	5009.0	263.72	1	1	5411.4	287.14	45	57	56	71
Average	5	23	3660.2	171.57	5	21	5998.7	261.25	5	6	8401.9	358.17	64	52	130	109

Holsteins at Dunnville.

Warren Stringer, of Dunnville, had a very successful sale on March 3, when he disposed of his herd of R. O. M. Holsteins. The herd was headed by Johanna Bonerges Lad, whose dam had a 29.11-lb. record. The highest price was \$355 for Woodslee Ormsby Burke, which figure was paid by M. Zavitz, of Ridgeway. The following is a list of the animals selling for \$100 and over, together with the names and addresses of the purchasers:

Thanksgiving Maid, P. J. Vollick, Canboro	\$245
Pearl Segis, Art Nevills, Dunnville	305
Corine Jane Houwtje, John Moote, Canboro	140
Lady Isco Houwtje Calamity, John Moote	155
Pontiac Beauty Calamity, E. C. Doan, Ridgeway	200
Lady De Kol Lindley, Miss McCallum, Dunnville	150
Gustava Beauty, John Moote	150
Maple Front Lady Lindsay, Asa Choate, Hamilton	150
Woodslee Ormsby Burke, Marshall Zavitz, Ridgeway	355
Woodslee Beauty Burke, C. V. Robbins, Wellandport	175
Woodslee Segis Hengold, Asa Choate	130
Woodslee Ormsby Artis, Albert Caster, Dunnville	180
Woodslee Segis De Kol, M. M. Sundry, Dunnville	200
Woodslee Ormsby Inka, Lincoln County Industrial Home, St. Catharines	325
Inka Artis Burke, John Hodges, Dunnville	205
Artis Inka Hengerveld, A. L. Mitchell, Woodburn	255
Sylvia Artis Hengerveld, Marshall Zavitz	260
Inka De Kol Burke, A. L. Mitchell	295
Johanna Bonerges Lad, L. Wilcox, Smithville	110
Veeman Starlight, John E. Logan, Dunnville	180

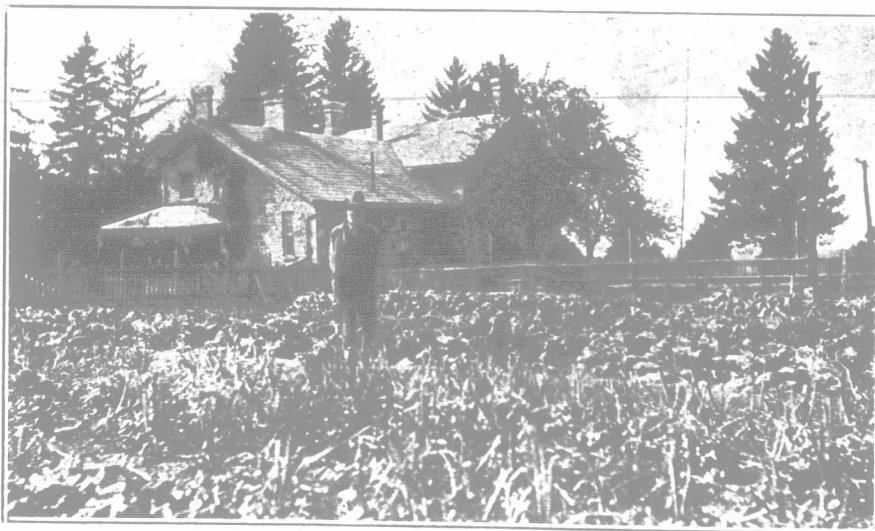
London District Holstein Sale.

On Tuesday, March 16, the London District Pure-Bred Holstein Breeders held an auction sale at the Western Fair Grounds, London, and disposed of fifty-two head of registered Holsteins. Some very good breeding was represented in the consignment, and quite a number of the mature cows had great capacity and splendid indication of milk production. Several two-year-old heifers were in nice condition, and there were two or three good males. There were too many entries that were not a credit to the sale, owing largely to the fact that they were not in condition. Undoubtedly many of these will turn out to be good propositions, and what the consignor lost by not fitting his animals more will be gained by the purchaser. L. H. Lipsitt, of Stratfordville, secured Princess Helbon De Kol, a five-year-old cow, for \$430. This was the top price

of the sale. She was a particularly big, strong cow with a good udder, and traces to Dutchland Colantha Sir Abbekerk and Colantha Johanna Lad. Belvoir Stock Farms secured a good young cow at \$330. The highest priced male was Maitland King Pontiac, consigned by J. D. Holtby. He was purchased by A. Keene, of London, for \$300. On his sire's side he traces to May Echo Verbelle and Inka Sylvia Beets Posch, while on his dam's side he traces to King Segis. The following is a list of the animals sold for \$100 and over, together with the names and addresses of the purchasers:

Sir Korndyke Rose, W. A. Bailey, Thorndale	\$100.00
Mabel Korndyke De Kol, A. Thompson, London	205.00
Victoria De Kol Netherland, A. Trott, Wilton Grove	205.00
Lady Netherland Abbekerk, W. Hodgins, Clandeboye	195.00
Netherland Posch Abbekerk, A. E. Wood, London	195.00
Waldorf Sarcastic Johanna, J. E. Bedggood, Thorndale	185.00
Glenwood's Princess De Kol, R. Johnston, Egmondville	250.00
Earl Helbon De Kol, G. B. Laidlaw, Wilton Grove	100.00
Allison Burke De Kol, E. A. Gough, Wilton Grove	125.00
Unique Mercedes Posch, J. E. Bedggood	120.00
Lady Pontiac Delta, O. Norton, London	135.00
Hengerveld Howtje Princess, Carmichael Bros., Ilderton	130.00
Ormsby Segis Hartog, J. Winter, London	125.00
Francis Fairmont Veeman, J. McMaster, Appin	130.00
Zimalinker Posch, T. Dicker, London	100.00
Lynnhurst Waldorf De Kol, E. Sipple, St. Thomas	170.00
Boutsje King, McTavish & Orchard, Shedden	185.00
Maggie Korndyke Canary, F. Adams, Southwold	235.00
Pauline Bell of Birnam, W. C. Prouse, Tillsonburg	175.00

Dora Hengerveld Segis, R. Johnston	200.00
Sir Tidy Korndyke, C. S. Adams, Southwold	135.00
Idaline De Kol Snowball, W. C. Prouse	200.00
Daisy Belle Fayne, F. A. Bell, Hagersville	110.00
Sprucedale Lenora, W. Stewart, St. Mary's	170.00
Lady Roberts Faforite, T. Rosser, Denfield	170.00
Paul Echo Veeman, T. G. McClary, London	105.00
Calamity Faforite De Kol, Belvoir Stock Farm, Delaware	330.00



The Farm Garden Should be Spacious and Planned for Convenience.

Rosie Veeman Segis, LeRoy Siddall, Denfield	210.00
Winnie Canary Segis, A. E. Wood	225.00
Korndyke Belle Zeeman, R. Johnston	255.00
Pretty Polly of Willowbanks, Belvoir Stock Farm	160.00
Miss Aggie De Kol, F. A. Bell	125.00
Grace Mercena Ormsby, L. Learn, Wilton Grove	125.00
Grace Ormsby Hengerveld, W. Stewart	210.00
Topsy Canary, Neil Maitland	130.00
Queen Gretqui, G. W. Keyes, Hyde Park	155.00
Lady Clothilde Queen, J. E. Bedggood	230.00
Duchess of Hedgerow, Carmichael Bros.	122.50
Polly Beets of Hedgerow, Geo. McFayden, Strathville	160.00
Duchess Beets of Bunyan, M. Marsh, Arkona	115.00
Rosie, N. L. McNeice, Byron	200.00
Princess Helbon De Kol, L. H. Lipsitt, Stratfordville	430.00
Maitland King Pontiac, A. Keene, London	300.00

Dairy Meetings Planned.

Announcement is made by the Minister of Agriculture that the butter-grading service of the Province will be extended so as to employ a larger number of graders, who will be linked up with the instruction work. In order to acquaint creamerymen and butter-makers with the plans of the Department, meetings have been scheduled as follows: Kirby House, Brantford, Tuesday, March 16; Chamber of Commerce, London, Wednesday, March 17; Royal Inn, Harriston, Friday, March 19. Practical dairy problems will also be discussed at these meetings, while a special course for butter-makers will be held at the Dairy Department, O.A.C., Guelph, during the three days ending April 1.

HORTICULTURE.

Officers of the Ontario Fruit Growers' Association.

The officers of the Ontario Fruit Growers' Association for the year 1920 were elected at a Directors' meeting, held in the Parliament Buildings, Toronto, on Tuesday, March 9. They are as follows: President, David Allan, Grimsby; Vice-President, H. Sirett, Brighton; Executive, A. Craise, St. Catharines, and C. R. Terry, Clarkson; Secretary-Treasurer, P. W. Hodgetts, Parliament Buildings, Toronto. Several matters pertaining to the fruit industry of Ontario were discussed at the meeting, chief among which was the proposal to have the Vineland Horticultural Station taken over by the Federal Department instead of the Province of Ontario, and the advisability of holding a National Apple Show in Toronto at the time of the Royal Agricultural Winter Fair. We believe the Board was unfavorable to the first proposition but favorable to the second.

Keep the Garden Soil Busy.

To have a successful home garden, one must make full use of the soil. The plot set aside for supplying the home garden with vegetables is usually not very large and yet its purpose is to keep the table supplied with fresh vegetables for as much of the season as possible. This may look very simple, but at the same time, to make the best use of the garden requires very careful planning, not only as to how much of each crop will be required but as to how best all of the space can be utilized throughout the whole season. One can make use of both succession and companion cropping; that is, more than one crop can be grown on the same soil in one season by following an early one with a late one or a later planting of an early crop, or, two crops may be grown together, which is known as companion cropping or intercropping. The principle is just the same as growing potatoes in a young orchard. Both succession and companion cropping must usually be considered together as, for instance, if lettuce and radishes are sown in rows between early cabbage plants, the radishes will be pulled first, and then the lettuce. These two out of the way the cabbages will have the ground to themselves. They, however, will be taken off as an early crop and beans can be planted immediately. Many different plans and combinations of crops can be made but soil and climatic conditions limit to a certain extent, what one can do.

In the farm garden the advantages should be nearly all on the side of companion cropping, especially where, as very frequently happens, a certain piece of ground is set aside as a garden spot. Sometimes we have seen gardens located long distances from the house, near the root field perhaps, where the horse cultivator could and would be used to eliminate some of the hoeing. This, however, must be poor economy and very hard on the women folk who are forced to walk long distances for a few vegetables for dinner. Besides it rarely happens that a little forethought could not provide a plot near the buildings where the horse cultivator could be used equally well. Where plenty of land is set aside for the

farm garden, companion cropping is not necessary, of course, but where space is no more than is actually needed several advantages are connected with this practice. Besides the fact that no ground is wasted there is an economy of plant food, the surplus applied for one crop being, used for another. Another point worth mentioning in this connection is that two crops rarely use the same kinds of plant food to the same extent and the drain on plant food of two crops grown in one year is not necessary, therefore, double the drain of one crop. When peas, beans, or other leguminous plants are planted along side other crops they act as nitrogen gatherers and thus help to enrich the soil. Moreover, the same tillage needed for one crop does for the crop planted alongside it. This factor, as well as some of the others mentioned, is naturally of greater importance to the market grader than in the home garden. Com-