

600 acres, mostly devoted to hay, pasture, and corn; 25 acres of the latter being for the silo. A new barn is to be erected, with two new silos. In the creamery (18 x 30 ft.) a De Laval separator and all the modern dairy appliances are used. The farm herd consists of 65 cows, and the milk from two other herds is bought. They have been turning out from 80 to 100 lbs. of butter per day, a portion of which is shipped to Buffalo—two large hotels taking 330 lbs. per week. Have sold none at the dairy for less than 25 cents per lb., and received more from the hotels. A systematic daily churning record is kept on a printed form, of which Mr. Linton encloses us a copy, showing kind of cream churned, weight, age, acidity, temperature at beginning and ending, hour, weight, butter, salt, with remarks as to quality of butter, prints, etc. We are glad to hear of the success of our old friend and reader.

#### Skim Milk and the Babcock Test.

It is most important to the dairy farmer and the creamery man to know that he is getting thorough separation of fat from the milk. The claims of separator salesmen and "taking it for granted" will not do. Without frequent reliable tests of the skim milk (and buttermilk also) there is no knowing how much valuable butter is running away to feed calves and hogs. In this connection E. H. Farrington, Professor of Dairy Husbandry at the Wisconsin Experiment Station, has been making a comparative investigation of the Babcock test and the gravimetric method (extraction with ether and weighing the fat) of estimating fat in skim milk. In bulletin No. 52 he says: "An effort was made to obtain samples of skim milk containing the least possible amount of butter-fat, such samples as are often claimed to contain no fat whatever, but which our experience has shown to contain nearly one-tenth of one per cent., and that failure to get any fat in a test is doubtless due to some error of the operator in manipulating the test." Accurate testing of skim milk by the Babcock test requires attention to the following details:—

1. Clean bottles.
2. About one-third more than the usual quantity of acid.
3. Sufficient speed of the testing machine.
4. Running the tester at full speed for at least five minutes.
5. Close attention to the thickness of the fat globules as well as their surface measure.

Two bottles have been devised especially for testing samples of buttermilk or skim milk containing very small quantities of fat. One of these is designed for using 35 cc. or double the usual quantity of both milk and acid. The graduated neck is smaller in diameter than the ordinary milk-test bottle, and a given amount of fat fills a longer space and can be more easily read. Each graduation represents .1 per cent. fat. The other is a double-necked bottle, provided with a much finer graduated tube for measuring the fat. Each division is so long that fractions of one-tenth per cent. can be estimated on the graduations—represent .05 per cent. fat. This bottle requires more care in handling, as it is more easily broken, but gives most accurate results.

#### The Tring Dairy Trials.

The great butter and milking trials conducted in August on the demesne of Lord Rothschild, near Tring, Eng., under the auspices of the Tring Agricultural Society, were this year of a more extensive character than usual, over sixty cows being tested. (There seems to be a growing feeling in England, however, in favor of testing under home conditions by some such plan as that carried out by U. S. experiment station officials for the American Holstein-Friesian Association.) Compared with last year, there was a distinct advance in the ratio of milk to butter. Lord Braybrooke's Jersey did credit to the buttermaking reputation of the breed by making almost one pound of butter to the gallon of milk. The Jersey easily held its position for richness of milk, although in the matter of quantity of milk and butter it gave way to the cross-bred. One of the chief features of the heavier class was the length of time the cows were in milk. The prizes ranged from £2 to £20, together with medals and certificates of merit. The following table shows the principal winners and quantities of milk and butter produced in the two classes, and will be of special interest to our readers at the present show season:—

COWS, ANY BREED OR CROSS, NOT EXCEEDING 900 POUNDS (LIVE WEIGHT—26 ENTRIES.)					
Cow.	Breed.	Milk. lb. oz.	Butter. lb. oz.	Awards.	
Sundew IV.	Jersey	30 12 2 61	12.54	1st.	
St. Bridget's Lady	"	30 12 2 41	13.38	2nd.	
St. John's Twist II.	"	41 14 2 24	20.81	3rd.	1st.
Silver Cloud III.	"	38 10 2 14	18.44	4th.	4th.
Violet.	"	42 10 1 10	25.49	2nd.	
Do Good.	"	41 9 1 13	22.35	3rd.	
COWS, ANY BREED OR CROSS, EXCEEDING 900 POUNDS—36 ENTRIES.					
Handy Maid II.	Cross	54 12 2 15	18.44	1st.	
Isabel.	"	67 11 2 14	23.16	2nd.	1st.
Sheila of Ruthven.	Jersey	52 14 2 11	19.6	3rd.	
Joyful Girl.	"	47 13 2 11	17.79	4th.	
Beauty.	Shorthorn	64 1 2 9	24.55	3rd.	
Victoria.	"	67 1 1 15	34.06	2nd.	
Daisy.	"	61 6 2 0	29.98	4th.	

#### High Character of Canadian Cheese.

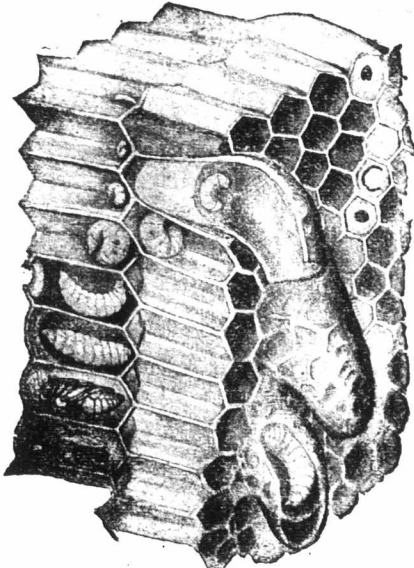
The Elgin dairy report, under the heading, "A Policy the United States Should Adopt," says: "The course of the Canadian Government in relation to the dairy industry of the Dominion is a notable example of the wisdom of preventing fraud in food production. Canadian cheese exports have increased enormously within the past few years, and the cheese has secured an enviable reputation in the foreign markets. Prosperous factories are scattered all over Canada, some in localities so remote from the seaboard or the business centers that their existence is a surprise. All this is the result of a policy which absolutely forbids the manufacture and sale of an adulterated or diminished article. The Government goes even further, and supplements its prohibition of wrongdoing by instruction in well-doing. Competent men have been employed to instruct the cheesemakers, until now Canada has not only a pure product, but a uniform product—uniformly good."

#### APIARY.

##### Queen Rearing.

It is considerable of a mystery to many people, how the queen bee originates, or what causes the difference in her size, instincts, and functions, as compared to the worker bees which are also of the female sex. The following article and illustration taken from Frank Benton's Bee Manual, issued by the American Department of Agriculture, sets forth quite clearly the points necessary to understand the early life of the queen:—

"When a laying queen is removed from a colony during the working season, eggs and larvae of all ages are left behind. Any egg which has been fertilized may be made to develop into a queen. So also larvae from such eggs may, up to the third day, be taken to rear from without danger of producing inferior queens. Cells in which to produce queens will be started over some of these larvae on the edges of the combs, or, by tearing down partitions and thus enlarging the lower portion of the cell, a beginning is obtained for a queen cell. The accompanying figure shows such queen



[Queen cells and worker brood in various stages.]

cells constructed over eggs or larvae originally designed to produce workers. They are known as emergency cells. The young larva is at once liberally supplied with a secretion, which is probably a production of the glands of the head, and which analyses have shown to be rich in nitrogen and fatty elements, being similar to that given at first to the worker larva. This is continued throughout the whole feeding period, while, as Dr. Von Planta has shown, in the case of the workers and drones, after the third day the proportion of the constituents of the larval food is so changed that they receive much less albumen and fat and more sugar. It is chiefly the influence of this food which causes the larva that would have developed as a worker to become a queen. The latter has somewhat changed instincts, and its reproductive system is developed, instead of abortive as in the case of the worker. The size of the cell, and, to a less extent perhaps, its position, no doubt influence this development, but the food seems to be the main factor, for the small cells built horizontally, if their larvae are supplied with the food designed for royal larvae, will be found to contain queens, and frequently these queens, even though small, are quite prolific, and show in all respects the instincts of a queen."

Mr. J. B. Stone, of Northumberland County, in a letter to the ADVOCATE, says that the Canadian Velvet Chaff wheat grown by him this season has again excelled all other varieties in the county. From thirteen acres he has threshed 520 bushels, of a very fine sample, being just 40 bushels per acre. Mr. Stone adds that the field was just thirteen acres when sown, as it was when threshed.

Captain Heaton, the well-known English game fowl enthusiast, once paid £100 for a black-red game cockerel, and the results proved the purchase to have been one of the best investments he had ever made. The bird formed the foundation of his now famous flock.

#### SHOWS AND SHOWING.

##### Toronto's Great Exhibition Now in Progress.

"Twas Addison who wrote:  
"Tis not in mortals to command success,  
But we'll do more, Sempiternus, we'll deserve it."  
And yet some people and some things, considering the ease with which they achieve it, appear to come perilously near to the commanding of success. Among the institutions at whose beck success joyfully approaches is Toronto's Great Exhibition, that opened on the day this journal is dated, and will continue until Saturday, the 12th. For eighteen years it has annually grown larger and better, until now one almost wonders in what department it can be improved. In this year of grace, 1896, it will present many superlative attractions, such as that model and modern marvel, Lumiere's Cinematographe, which at this moment is the reigning sensation, both in New York and in London, Eng., and has not yet been shown outside those two cities; the greatest array of horses, cattle, sheep, pigs, and poultry that have ever been gathered together within one enclosure; many beautiful pictures, including F. M. Bell-Smith's portrayal of events attending the death and funeral of Sir John Thompson, for which the Queen herself honored him with a sitting; an electrical theatre; wonderful elephants; a collection of cheese and butter that could not well be surpassed; a collection of minerals, cereals, vegetables, and fruit, all gathered in Canada, that no other country could equal, let alone excel; nightly presenting a startlingly brilliant display of fireworks and spectacles, affording amusement, instruction and information for hundreds of thousands of hard-working people; and this year the first week, with the live stock on the grounds, will be as complete as the second, and a single fare for the round trip will prevail from every point in Canada and the State of Michigan the whole time, with several cheap excursions, notably one on Thursday, Sept. 5.

##### Canada's Favorite--The Western Fair, London, Sept. 10-19.

The exhibition of this year will be an eye-opener to many. The buildings are now completed, and they are simply grand; every person who sees them passes the highest encomium upon them. The directors were determined that they would be constructed properly, regardless of the little additional expense connected therewith, and they now feel proud of their efforts. Prof. H. H. Dean, of the O. A. C., who visited the grounds last Thursday, expressed himself as surprised and delighted at the wonderful improvements made. The live stock buildings were not only new, but he could not see how they could be well in proved.

The exhibitors also have shown a desire to appreciate their efforts by making a much larger entry than ever before. In all the live stock classes this is very marked, and will be an incentive to the Board to reasonably increase the prizes offered another year.

The wants of the exhibitors have been carefully studied with a view to the expansion of the number and quality of the exhibits, and we have every reason to expect that the Fair of 1896 will be an unparalleled success.

The buildings are so arranged that it will make little difference whether the weather should be a little off or not to those who arrive at the grounds, as they will be able to witness the whole exhibit under cover. The comforts of the visitors have been greatly improved by the building of the large grandstand, with three excellent dining-halls underneath to supply the bodily wants, with the best of spring water throughout the grounds and at almost every turn inside and outside of the buildings.

Secretary Brown writes us that the attractions selected are the very best that could be procured for money, and far in advance of any previous year, and will satisfy the desires of all who enjoy a little recreation after seeing the live stock and other exhibits. The Wild West of Pawnee Bill, the second largest of its kind in America, counting over 30 people and 60 head of live stock, and a regular village of tents, is the first or principal attraction. Sie Hassan Ben Ali's Moorish acrobats, 12 in number, are the very best that ever left their own sunny East, and are by royal assent visiting this country. Sie Hassan Ben Ali is a Prince and a 32-degree Mason, besides holding many other high offices. Their wardrobe will be a grand sight. Fireworks of a high order are arranged for the four evenings, and will be supplemented by all the special attractions, the principal of which we have only enumerated.

In addition to the above the Western Fair will be honored by a visit of His Excellency the Governor General of Canada, accompanied by Lady Aberdeen. Their Excellencies know London to be the center of one of the very finest agricultural districts of Canada, and, by their visit, show their appreciation of the efforts of the directors of the Western Fair in establishing an exhibition of national repute.

Last, but not least, the annual military camp will be held at London during the Fair week, and the presence of the soldiers will add greatly to the numerous attractions which have been described above.

The management are sanguine that the largest crowd ever gathered at any previous Western Fair will be eclipsed by the one in sight, should the weather prove as favorable as the past. It is a general invitation extended to all—exhibitor or visitor. Come.

##### At the Commercial Metropolis.

The Montreal Exposition which will be held from Sept. 11th to 19th promises to surpass anything of the kind hitherto held in that great metropolis. The Fair Grounds have been beautified by the erection of a splendid new building to be known as the Industrial Building, which will take the place of the old Crystal Palace which was destroyed by fire. It is estimated that between seven and eight thousand will be able to walk through the building, without being crowded, at one time.

The list of entries indicates a splendid display in all departments. The show of live stock and other farm and horticultural products will, as usual, be unexcelled, and will alone be worth farmers coming hundreds of miles to see. The mining exhibit will be a special feature.

Among the attractions there will be a great Cycle Carnival, in which several thousand wheelmen are expected to take part. The visitors will be given the opportunity of witnessing grand military and naval representations. Famous bands will furnish music. Children's Day, when several thousand school children of the city of Montreal will attend in a body and execute a programme of patriotic Canadian airs, will be unique.

Arrangements have been made for reduced rates on all railways. Montreal in September will be at its best, and thousands will no doubt flock to the metropolis to see the sights.

##### The Show at the Capital.

The Directors of the Central Canada Fair have performed great work at Lansdowne Park, Ottawa, this year. Not only have they erected superb new horse and cattle stables and sheds for sheep and swine, but they have also enlarged nearly all other structures. Machinery hall is twice as large as it was last fall, and the carriage building will have one-third more accommodation. Then an addition has been made to the poultry building, a new art gallery has been attached to the main building, and the horticultural hall has been vastly improved. But these are not all the improvements. The grandstand has been amplified, a new half-mile track constructed, and, indeed, the whole Exhibition precincts enhanced generally in appearance and accommodation. Forty thousand dollars was a considerable sum to spend in that part, but the Directors had confidence in the show. They look for an increased number of entries in all departments, as well as added attendance, and no doubt their hopes will be realized. The magnificent Parliament Buildings and the Dominion Experimental Farm are among the many incidental attractions at Ottawa. A card dropped to Secretary McMahon will secure a prompt reply, giving complete information about Ottawa's great fair, which this year will be held from the 17th to the 26th September. Entries close on the 14th.