

time ago the school buildings at Truro were destroyed by fire; the people of Annapolis valley ask that a college be established, combining its work and that done by the present School of Horticulture. Best of all, the Government is ready and willing to do its part. I was greatly pleased to find that the Maritime people look upon our O.A.C. as a model institution, and more than pleased to hear Mr. Fisher speak of it as "the best in the world."

CORRESPONDENCE

An Interesting Australian Letter

To the Editor of FARMING:

I am sending you £1 by P. O. order in payment of subscription to the journal FARMING. I am very much pleased with the last form of the journal, though I do not think it so handy as the old monthly size; but I am glad the advertisements are not mixed with the reading matter, so as not to make the volumes, when bound, so bulky.

FARMING is most welcome in Western Australia, where the business of farming is the most backward of any place of which I have heard under the British flag. The majority of the farmers are so ignorant that they think they know enough about farming. There is no agricultural paper printed in this colony. The Government started an apology for one and called it the "Journal of the Bureau of Agriculture," and delivered it to the farmers free bi-weekly. This was followed by a monthly called the "Farmers' and Producers' Gazette and Settlers' Guide," which was a great improvement, but cost the Government too much, and so it was killed; but farmers seem quite satisfied. This will give you some idea of the obstacles to farming here, where we have the finest climate in the world.

Yours faithfully,

W. E. ASH,

(Associate, Ontario Agricultural College).

Korijekup, Harvey, West Australia, Jan. 9th, 1899.



Babcock Tests vs. Churn Tests

To the Editor of FARMING:

In your issue of 21st February I notice an interesting letter from Mr. Geo. Rice, of Currie's, Ontario, on this very important subject, and, as he quotes in full a letter sent by me to his firm, I may be pardoned for asking to take a hand in the discussion. I am admittedly the advocate of a system of churning which I claim has been proved more perfect than even the Babcock method in establishing accurately the exact amount of butter in a given amount of cream. The product of my process must certainly stand the chemical test for fat or else my contention falls to the ground. The process must also be capable of practical demonstration on an economical basis. On this point let me remark that there have been hundreds of churns almost, if not all, of which have been at some stage condemned by "experts" (?) who afterwards recommended them. Yet they were not all wrong, and, indeed, to day it is the process rather than the machine which rules. There have been several different kinds of separators, both horizontal and vertical, which have received similar gentle treatment. Even the salt has come in for its share of blame to bolster up some blunder. However, as I stated in my letter to Messrs. Rice, my process of taking butter from cream, and producing an absolutely pure article in marketable form, and showing a gain of 25 per cent. over the Babcock test, is in operation at the dairy of Mr. Robt. Davies, of Thorncliff Farm, Toronto, and I assure you that it is of sufficient importance to call for candid, thoughtful investigation. Surely no more valuable test of a cow's performance can be had than practically and economically, with absolute certainty, putting the butter of her milk into a marketable form which will stand the chemical test. With

all due respect to Dr. Babcock, I think practical men will agree with me when they understand it in that way. Is it any wonder that buttermaking to day stands unique among the arts and manufactures as being the only one that has stood for 6,000 years without one solitary improvement or one scintilla of light being obtained as to the chemistry of an operation which was carried on in Pharaoh's time with as much knowledge and success as it is to day, when the leaders, or say the more prominent men, engaged in the business are so—we will call it conservative? But if one of their employees on the farm was so *conservative* they would call it by some other name.

That there is only 5% between Mr. Rice and myself I will proceed to demonstrate. It may be permissible for me to assume that if Mr. Rice was accused of leaving more than the smallest modicum of fat in his skim or butter-milk he would feel insulted, and we must therefore proceed upon the basis that he does practically obtain all the fat his cow gives him. Now, supposing the Babcock test shows 4% of fat in his milk, that is, 4 per cent of pure fat or oil, and marketable butter. Even Mr. Rice's is not pure fat or oil. There are other ingredients such as water, salt, casein, etc., and Mr. Rice, in his own letter, quotes 80 per cent. fat as what an ideal marketable butter should be. That leaves 20 per cent. of other material to account for. So that Mr. Rice to-day should be working not less than 20 per cent. above the showing of the Babcock test. "Is he doing so?"

How Mr. Rice obtains his data of 80 per cent. fat I shall be pleased to hear. The latest standard in Great Britain allows 18 per cent. water. There is 6 per cent. salt, and some allowance for casein, etc., say only 2 per cent., which gives a total of 26 per cent. But taking Mr. Rice's data of 80 per cent. fat, every creamery that is making a butter much better than the average and is not working 20 per cent. above the test is losing butter. Can any of the readers of this journal point to the creamery that is paying its patrons on the basis of 20 per cent. above the showing of the Babcock?

There is still another important factor in this question and that is the action of the sulphuric acid used in making the test. It has long been known that sulphuric acid combines with fats or oils, and the more volatile oils it volatilizes almost complete. The fat in the milk may be divided roughly into three parts, stearine, palmitine and oleine, the last one of which is volatile, and there is no reason to suppose that the acid should act differently on butter fat than on any other fat or oil. Therefore, we may reckon with reasonable certainty that a portion at any rate of the fat which should show in the test has been driven off and another portion of the heavier fat disposed of by the acid in such a way as not to be available in reading the test, and a very small loss in the test will make all the difference in the working out, that is, if we have a means of obtaining all the fat from the milk and cream.

Granting the premises to be correct, it will be allowed, I think, by any fair-minded man that, if a method can be discovered that will obtain all the fat, making allowance for the water, salt, casein, etc., it should not require a miracle, a fraud nor a fake of any kind to work 30 per cent. above the showing of the Babcock test.

In the hope that I have shown Mr. Rice sufficient to convince him that this invention is not designed for a record maker for fancy cows, and looking to the day when he will permit me to give him ocular demonstration of the fairness of my claims,

I remain, sir, yours respectfully,

WALTER COLE.



Full of Good Wholesome Reading

"FARMING is bristling full of good, wholesome reading. No farmer need be afraid to place it before his family."

E. YORKE.

Alvinston, Ont., Feb. 9th, 1899.