ments made, it was shown that for every $\frac{2}{10}$ of one per cent. increase in butterfat in milk, there was an increase of $\frac{1}{8}$ of a cent per lb. in the value of the cheese. We have also the interesting experiment of Mr. Ruddick in making two cheese; one from 700 lbs. of 3.9 per cent. milk, and one from 700 lbs. of 3.2 per cent. milk. Both cheese were made in same sized hoops under similar condition, but the cheese made from 3.9 per cent. milk was about $3\frac{1}{2}$ inches higher than the one made from 3.2 per cent. milk; thus showing by occular demonstration how much more cheese can be made out of the richer than the poorer milk. The actual data in connection with this experiment are as follows:

No. 1, made Sept. 2nd.	No. 2, made August 25th.
700 lbs. of milk.	700 lbs. of milk.
3.9 per cent. of fat.	3.2 per cent. of fat.
27.30 lbs. of fat.	22.40 lbs. of fat.
74.75 lbs. of green cheese.	62.50 lbs. of green cheese.
72.50 lbs. 3 weeks old.	61.00 lbs. 3 weeks old.
2.65 lbs. of cheese to lb. of fat.	2.76 lbs. of cheese to lb. of fat.
9.65 lbs. milk to lb. cheese.	11.45 lb. milk to lb cheese.
10.35 lbs. cheese per 100 lbs. milk.	8.73 lbs. cheese to 100 lbs. milk.

At the Tavistock dairy school, which is run under the auspices of the Dairymen's Association of Western Ontario, a number of experiments were also carried on to test the effect of rich and poor milk in the production of cheese. These experiments were under the control of Mr. A. T. Bell, the able instructor at the school, and a man in whom every cheesemaker has confidence as a thoroughly practical and reliable dairyman. The results from this work, though not put in the same form as the others quoted, show practically the same facts: That the richer the milk in butterfat the more cheese can be made from it. The work there is tabulated as follows:

Lbs. milk.	Per cent. of fat.	Total lbs. cheese produced.	Lbs. milk to lbs. cheese.	Money result.
500	3.20	45.12	11.05	$4.96
500	3.30	46.19	10.82	5.08
500	3.60	48.37	10.33	5.32
500	3.80	51.00	9.80	5.61
500	4.00	52.62	9.50	5.72
500	4.10	52.75	9.47	5.80
500	4.30	54.90	9.10	6.03
500	4.56	56.73	8.81	6.24

The money value is made up at the same market price for each lot.

We have also the result of some work carried on by Mr. James A. Gray, of the Elma factory, which is the only factory in Canada that paid according to the percentage of butterfat in milk last season. The data of this work are given as follows:

Date.	Lbs. milk.	Per cent. fat.	Lbs. green cheese.	Lbs. milk to lbs. cheese.	Lbs. cheese on Oct. 1st.
Aug. 30	2100	3.80	216	9.72	210
Sept. 1.	2100	3.55	200.50	10.47	195

Everyone who has supplied milk to a cheese factory knows that it takes less milk to make a pound of cheese in the autumn than during the spring or summer. This is due to the milk being richer in butterfat in the autumn than in the spring or summer. Now, if it is true that 4 per cent. milk received in the autumn will make more cheese than 3 per cent. milk received in the spring, is it not equally as true that 4 per cent. milk will make more cheese than 3 per cent. milk if they are both received at the same season of the year.

If there were a doubt in our minds as to the accuracy of the varied experiments carried on, or if they showed conflicting results, and while one experiment showed that the system was a just one another showed the opposite to be the fact, then there might be a reasonable excuse for opposing the system as unreliable and unjust. But when so many different tests have been made under different circumstances, by different individuals, showing the same result, then there is no room for doubting that the system is a just one.

The system of paying for milk according to the percentage of butterfat has come to stay. It is what many advanced dairymen have been looking forward to for some time, and now that the thing is an established fact and the appliances and apparatus necessary for operating it can be managed so easily with a little care and accuracy, there is no reason to doubt but what in the near future every pound of milk made into cheese in this country will be paid for on this basis. Consequently the sooner our factorymen and patrons fall into line and adapt themselves to all the requirements of this new movement, the sooner will they place themselves in the position of leaders in advanced dairying, having the means of getting a better quality of milk, of placing the business on a sounder basis, and of still further improving the quality of our Canadian cheese and making the business of dairying in this country more profitable to the producer and everyone connected with it.

The Ninety Days Test.

The ninety days test at the Columbian Exposition has been very even so far. The markings of the judges on the butter have been very uniform, so much so that there is no difference in flavor for or against either of the breeds, as far as the market value is concerned. This being the case, of course the amount made, and the cost of the feed, and the increase or decrease in the live weight of the cows, will have to determine the awards.

The Shorthorns were at a disadvantage in regard to numbers when the test was started. Two or three extra cows did not produce as soon as was expected, but if they do well the amount of milk and butter will increase, rather than decrease, as the test progresses. Of course, the Shorthorns can hardly be expected to win, as no one has ever claimed that they were a dairy breed alone, though their beef qualities are everywhere admitted. The object of going into the test was to show the farmer that he could get good milk and butter, besides raising a calf that would weigh at the end of one year as much as the calf of a strictly dairy cow would at the end of two years; besides, the quality of the beef would be much in favor of that Shorthorn calf. The test, so far, is helping to establish all that has ever been claimed for the Shorthorns.

POULTRY.

Mrs. Ida E. Tilson.

It affords us much pleasure to present below a very nice photo-engraving of our able poultry correspondent, Mrs. Tilson, whose bright and instructive articles are so highly appreciated by our many readers, especially by all lovers of poultry.

Mrs. Tilson is a graduate of Ripon College, and holds a life certificate to teach in the public schools of her native state, Wisconsin. She taught several years and married a teacher, the late Prof. E. S. Tilson. While yet teaching she began the care of fowls, to secure open-air work and good digestion. Having found health, she continued in the poultry

business because she also found pleasure, profit and science therein. Mrs. Tilson's poultry operations are carried on upon the farm of her father, C. C. Elwell, one of Wisconsin's prosperous pioneer farmers, and with whom she makes her home. She keeps an average of one hundred hens, her department being egg production, and might profitably enlarge her poultry interests, did not home duties and literary pursuits claim a portion of her time.

Artificial Eggs.

The St. Louis Journal of Agriculture is responsible for the following:—"A man claims to have invented a process of making artificial eggs. An English paper says that some dozens have been served in the clubs, boiled, fried, poached and scrambled, and the general verdict is that it would be impossible for anybody to distinguish them from real ones. The inventor claims that his eggs are, chemically speaking, an exact reproduction of nature. The basis is corn meal. The white is pure albumen, and the yolk is a mixture of albumen and several other elements. It is said that the shell is made in two halves, and put together so artfully that no one can discover the joint. They are made of different sizes and colors, and can be sold for three pence a dozen. It is said that the eggs externally look exactly like the sort laid by hens, and the contents flop into a glass as naturally, and the yolk and white do not mingle, and like a natural egg will beat up for cake, etc. It was stated recently in an Eastern paper that an artificial egg factory with a daily capacity of several thousand dozens would soon be established in New Jersey.

We have never seen anybody who has seen the eggs, but if it is a fact that artificial eggs with the same material, in the same proportion as natural eggs, can be made so they cannot be told from a natural egg, and still sold so cheaply, the manufacturers will surely interfere with the old hen's business. We have not yet heard of any of our poultry raisers taking fright. They will have a right to protest, however, when the bogus egg, like bogus butter, comes into the market posing as the genuine article."

Poultry on the Farm.

BY MRS. IDA E. TILSON, WEST SALEM, WIS.

When egg production, as with me, is the chief aim of a poulterer, pullets ought to be early accustomed to a hen-house, their future and permanent home. At night it offers more space and comfort and better ventilation than do coops, and puts these young birds where they can be watched and sorted, for the purpose of rejecting any imperfect or mischievous ones; hence, room must be made for them. I never raised chicks late enough, or so long retained them in coops, that they much needed what I have seen used screen frames to fit back and front of coop, cooler than and as safe as any arrangement of boards. This year I raised the most of my chicks in April, and by the first of June had so reduced my old flock that the young had a chance for their lives when all came pouring out together mornings, as I first unlocked their quarters. Some old favorites must go. As Grace Greenwood thought of her pet years ago:

"Thy tail was full of feathers gay,
Thy comb was red and fine;
I hear no crow *(nor cackle)* where'er I go
One-half so loud as thine."

Till lately I was never seriously troubled by any hen eating eggs. I took the time, I must take it, to watch for and discover the true culprit. Though young, handsome, blooded, and laying a large egg as her last act, she was sent to the butcher, since otherwise many fowls might imitate or inherit her trick, for "evil communications corrupt good manners" in hen-houses, as elsewhere. But if I give these creatures I have raised as good a time as possible during their brief lives, then my duty ends, and their passing off the stage of existence is no different from the ever-changing procession of mankind. If the home market is pre-empted, do as one Wisconsin girl did,—neatly pluck and dress fowls, double and sew skin over the end of neck-bone, tie their scrubbed feet together, and hold wings in place by a little cheap, bright ribbon, pack with regularity in unbroken rye straw, and that lot will sell if every other goes begging. Such taste in mechanical matters guarantees taste for good flesh. Summer finds setting hens in their glory. Apparently they know all these proverbs about perseverance conquering everything, making hay while the sun shines, and never putting off what can be done to-day. Setters, like other hens, differ in weight, but each as she begins setting is at her best condition individually, or nature would not lead her into such hard work. Old or over-fat hens, and those chronic cases which hardly dynamite could break up, I sell in relays as they begin clucking, because they soon grow thinner and no eggs are coming for a time anyway. Indeed, a fat hen, otherwise desirable to retain, can be reduced by permitting her to set a while. Should she, however, rear a brood and get considerable of their good, growing ration, that may flesh her up again. As setters are feverish, I am careful when breaking them up to keep draughts away till they "cool off" somewhat. They are confined in a little house with a dirt floor for scratching over, where plenty of light and air can be admitted, but no vestige of a nest is seen. A light, relaxing, but egg-producing diet, such as milk, chopped onions, puddings, table scraps, and a little grain and bone meal, completes the cure. Some say, "shut up hens before the setting fever has firm hold;" others say, "wait a little." My own experience is that cluckers early taken in hand break up easily, but not permanently, while a hen allowed to set, say two weeks, and "have it out," finds her job not so easy as imagined, and when she is persuaded to give up takes a good rest. Those who have handled hens know the scantiness of plumage along breast bone and inside of thighs a scantiness which may increase with age. I believe china or porcelain nest eggs must be very chilling things to sit down upon, particularly in winter, and the cause of many colds among layers and broody hens. A china egg is so hard that it sometimes breaks a real egg rolled against it forcibly, as may occur when an awkward hen gets on or off nest, especially where there are thin-shelled eggs. We are reminded of Æsop's fable, where the earthen pot politely declined the brass pot's company, as they floated off together in a flood. I think I shall entirely discard china eggs for Japanese egg gourds, or nest egg gourds as they are also called, when I can attend to getting new seed, which I notice is offered for five cents a package by John A. Salzer's Seed Co., La Crosse, Wis., and doubtless by many other seedsmen. The gourds are durable, but after a time lose their natural color and turn very brown. They are tough, and yield an egg-eating hen no more satisfaction than a china egg does. Poor soil or late planting is needed, else too many grow large like duck or possibly even ostrich eggs. One year I made in a shallow pan a tasty hay nest, filled with gourds of the proper size, and took premium on it for best horticultural device at our county fair. So natural was it that some who did not read its label were overheard to wonder what those eggs were there for. This reminds me that fair premiums are now being made up. Why do we seldom or never have them offered, say for large eggs, heavy eggs, uniform eggs or egg records, thus recognizing a valuable industry?