

Who's the Profit Lies.

In the last bulletin of the Minnesota Experiment Station, No. 67, Prof. Haecker gives some interesting tables which illustrate forcibly the money value of form in the dairy cow. In pursuing his experiments in milk production, Prof. Haecker gathered together a group of cows having a tendency to lay on flesh, and another of cows spare and angular. Each group of cows was fed all they would eat of balanced ration. The figures given in the tables are for the period of lactation, no account being made of the cost of keeping the cows when giving milk, but in all respects the conditions of the experiments were alike. A careful examination of the photographic portraits of the cows and the records as presented in the tables will give a clear idea of what type or form means in a money way to the dairy man or farmer.

The cows included in the two groups ranked, with reference to the amount of flesh they carried and cost of producing a pound of butter, just as they are arranged in the following table, those having most tendency to take on flesh being named first:

	Cents.
Ethel—Grade Shorthorn	10.85
Ligetta—Grade Shorthorn	8.86
Fairy—Grade Shorthorn	7.51
Ida—Grade Shorthorn	7.45
Lydia—Brown Swiss	7.15
Topsy—Grade Holstein	6.29
Sweet Briar—Guernsey	5.90
Duchess—Jersey	4.90
Fortune—Jersey	4.27
Houston—Jersey-Guernsey	4.17

The average cost for feed, charging for keep during the time of lactation only, is \$30.64. The average yield of milk was 5,077 pounds, which is certainly a good yield, and is conclusively evidence that it does not follow that a cow giving "a good mess" is a profit-

to the limit of their normal production, cows will produce milk and butter and make their own profits in proportion as they are spare and angular, or have a tendency to take on flesh.

Five years of careful investigation in regard to the cost of production of butter between cows spare and angular in form and cows having an inherited or acquired disposition to convert feed into flesh, show that in every instance the cow that carried the least flesh charged the least for butter, and just in so much as one cow was a little smoother and plumper than the other would her butter product cost more than that of the other.

Wheat Crops of the World.

The statistician of the U. S. department of agriculture has issued a statement showing the wheat crop of the world for the five years, 1895 to 1899. The aggregate world's production in 1899 amounted to 2,725,407,000 bushels, a decrease of 195,638,000 bushels, or a little less than 7 per cent from the crop of 1898; but, compared with the average of the four preceding years, 1895 to 1898, the 1899 production shows an increase of nearly 6 1-3 per cent, or, expressed in quantity, of 161,833,000 bushels.

The variation in the quantity of wheat produced on each continent in 1899 from the quantity produced on the same continent in 1898, was as follows:

	Bushels.
North America (decrease in 1899)	136,039,000
Europe (decrease in 1899)	80,154,000
Asia (decrease in 1899)	35,575,000
Africa (decrease in 1899)	10,830,000
South America (increase in 1899)	45,725,000
Australasia (increase in 1899)	21,232,000
World (decrease in 1899)	195,638,000

Europe, it should be remembered, not only produces more than one-half of the world's crop, but consumes almost the entire world's surplus. North America, on the other hand, raises between one-fourth and one-fifth of the



able cow in the dairy, or will pay even for her feed. The average yield of butter was 229 pounds, which is far above the average yield of the cows as fed and handled on our farms. The cost for feed to produce a pound of butter, not taking account of the labor, is 13.38 cents. It should be borne in mind that the time has passed when butter will bring in the markets 30 or even 20 cents per pound, and that it is only by co-operative dairying, using only the best apparatus, employing only skillful butter-makers, and then only under conditions so favorable that butter can be shipped in carload lots, that the farmer can expect to realize 15, or at best 16, cents over cost of manufacture for his butter. So, with all things favorable as to manufacture, and with scientific feeding and skillful management of this style of cow, we may get a return of from half a cent to a cent and a half profit per pound for butter, being an annual net return per cow of from \$5.81 to \$15.69, and averaging \$10.37.

The average cost of feed for this group is \$37.60 against \$30.64 for the previously named group. Yield of butter 446 pounds, being 94.7 per cent greater than the butter from the first group of cows, which cost 58.6 per cent more than that from the dairy cows; the dairy type cows returning an annual profit of \$38.11, against \$10.37 from those having a beef-making heredity. Under conditions now existing, the dairy type cow can earn from two to three times as much in the dairy as can the grade beef cow. And it is clear that, in the hands of men who know how to care for, feed and milk cows so as to bring them

world's crop, and is the world's great surplus exporter. Between these two great wheat producing regions is transacted the bulk of the intercontinental wheat trade of the world.

About 95 per cent of the wheat crop of the world is produced in the Northern Hemisphere. Moreover, that half of the globe not only consumes its entire product, but a heavy proportion of the crop of the Southern Hemisphere has of late years been transported across the equator from Argentina and Australasia to the European markets.

The yields for 1899, as officially reported, were as follows in bushels: United States, 547,304,000; Canada, 59,960,000; Mexico, 15,000,000; Chili, 10,000,000; Argentina, 92,167,000; Uruguay, 7,164,000; Great Britain, 67,594,000; Ireland, 1,731,000; Norway, 260,000; Sweden, 4,430,000; Denmark, 3,500,000; Netherlands, 4,300,000; Belgium, 12,400,000; France, 366,079,000; Spain, 88,000,000; Portugal, 6,400,000; Italy, 127,912,000; Switzerland, 4,200,000; Germany, 141,369,000; Austria-Hungary, 191,842,000; Roumania, 26,064,000; Bulgaria, 24,000,000; Servia, 8,500,000; Montenegro, 200,000; Turkey in Europe, 15,000,000; Greece, 2,000,000; Russia in Europe, 393,823,000; Russia in Asia, 93,411,000; Turkey in Asia, 35,200,000; Cyprus, 2,000,000; Persia, 16,000,000; British India, 232,585,000; Japan, 20,000,000; Africa, 35,800,000; Australasia, 56,212,000. The yield by continents was: North America, 622,264,000; South America, 112,331,000; Europe, 1,499,604,000; Asia, 299,196,000; Africa, 35,800,000; Australasia, 56,212,000. Total yield for the last five years were: 1895, 2,593,312,000; 1896, 2,506,320,000; 1897, 2,233,637,000; 1898, 2,921,045,000; 1899, 2,725,407,000.

THE SMITHVILLE VOLUNTEER.

That feller there who's sunburnt so? You don't know him, you say? It's mighty evident, my friend, you just arrived today.

"Corn Stalk" the name he goes by— lives just up the road—a bit. That handage round his arm? Why, there is where the Mauser hit. You want to be acquainted? Well, I 'low that he won't kear; I'm rather proud myself to know the Smithville volunteer.

Know him? Since he was a kid—the Smithville folks, you see, ain't much on makin' when it comes to makin' history.

O' course, they're great on thinkin', an' they wasn't ary one. But what knowed jist adackly how fightin' should be done.

"Cept 'Corn Stalk'—he admitted that he didn't know or kear— P'raps that is the reason why he's Smithville's volunteer.

No, didn't come o' fightin' stock—his daddy allus took to coon dogs—when he ledn't he wuz baitin' 'em up a hook— En 'Corn Stalk' had a heentle hankerin' fer coon dogs, too. But it hadn't gone so fur, you see, that it fack wuz mighty clear— He jist stepped on the fast express—the one that fetched you here— En went up an' enlisted ez the Smithville volunteer.

We kinder smiled about it—we wuz there to see him fightin'! Why, there wuzn't ary part o' fightin' in him—tender-hearted cuss ez ever.

One day his folks went hungry fer a Sunday dinner, euz He wouldn't kill jist chicken; so you see we didn't kear.

To lay claim to a hero in the Smithville volunteer.

We had purt' nigh forgot him, till the news got spread aroun' that there wuz another hero that wuz born right here in town. No name wuz mentioned, but they said that he wuz tall en slim, En homely ez a porter dog—we knewed that it wuz him.

En when we heard his hair wuz red the fack wuz mighty clear— We knowed ez sure ez blazes 'twuz the Smithville volunteer.

His arm? It's hangin' loose, you see—he got that the first day.

Ez I said, Mauser come along—his arm wuz in the way.

They ordered him to fall back to the rear, but nary fall; He jist jumped in the fightin' line, a-leadin' 'em up.

They say the fellers kinder stopped their fightin' fer to kear. That wuzn't bad, you understand, fer Smithville's volunteer.

The smoke wuz all around him up the hills in clouds o' blue. They knowed 'twuz him, euz they could see his red hair gleamin' thro'. They seen him fightin' all alone, en that's jist why they air.

Along the fightin' line jist rolled with cheers a-ringin' there. Yes, that's him yer a-lookin' at—the very same—en we're A-bustin' out with honor fer the Smithville volunteer.

There wuz a lot o' fellers that fit jist ez brave that day; The country's loaded with 'em, ez I'm mighty proud to say. It wuzn't much—but 'Corn Stalk'—well, we never thought that he Would start the feller cheerin'—didn't know him, you kin see.

You want to get acquainted? Well, I 'low that he won't kear. So come along en shake the han' o' Smithville's volunteer.

—Edward Singer, in Cleveland Plain Dealer.

The Lion of Lucerne.

An item about Switzerland or the Swiss is of interest to all American boys and girls, not alone because Switzerland is a republic something like our own, nor because it is walled about by those magnificent mountains, the Alps; but also because it is the land of William Tell, the Swiss Guards, and many other patriots whose love for their country was so great that they gladly laid down their lives for her freedom.

And so, to every liberty-loving person, there comes a thrill of the heart, as he reads about these acts of heroism or sees any of the monuments erected as a tribute to their courage.

Nearly every village or canton in Switzerland has one or more of these monuments, denkmaler (as they are called), erected in memory of the bravery of some hero who has helped to make them free.

Among all these monuments there is none that interests me more than the Lion of Lucerne, which consists of an immense lion carved out of solid rock, to commemorate the bravery of the Swiss Guards who died trying to defend the French king and queen from mobs of the French revolution.

No doubt you wonder why the French court should have been defended by Swiss guards? If you will read in your histories, you will see that in 1702, Louis XIV. of France was in great need of soldiers to help him carry on his wars, and as he looked around him on the different countries of Europe, for one likely to help him, he saw that the Swiss were the weakest, and that they needed certain commercial privileges in order to carry on their trade.

So this crafty monarch made a treaty with them, by which he granted them their privileges and the protection they desired on condition that they would send him every year from 6,000 to 10,000 of their strongest men to help him fight his battles.

Now the Swiss, who were used to a life of peril and adventure, were reckless of danger, and saw in this treaty a chance to give their old enemy, Austria, a blow that alone they dared not give, so they accepted the offer, somewhat proud that their strength should be selected to guard the body of the King of France. Sometimes these clear-sighted patriots had a feeling that they were being forced to serve France, instead of being treated as allies; but it was not till the revolution broke out in 1789, that they saw how the French king had all the time tried to degrade them and their country into slaves. Even then they stood firm when the mob stoned the king's palace, and preferred death to disobedience to orders.

Those of you who have read Martineau's "The Peasant and the Prince" will remember that for many years the luxuries and follies of the French court had been paid for by the taxes of the starving peasants, many of whom lived on roots and berries. Finally, in 1792, they became so bitter over their wrongs, that they banded together and went to the palace of the Tuilleries to ask the king for a reduction of taxes, for work and food for their starving families; but the sullen king and his childish wife only barred their palace doors and called the hungry mob "foolish wretches." The refusal only served to infuriate the mob, and they rushed forward to imprison or kill the royal family, and sack the palace.

Now, as soon as the French soldiers saw that they were far outnumbered by this surging, brutal mob, they quietly slipped away, leaving their king defenseless except for the king's bodyguard of Swiss soldiers, of whom I have told you. Do you suppose these brave men stopped to think that they had been unfairly treated in the past, or that they could save their own lives if they opened the doors to the angry people outside?

No; they only saw before them a king, poor, faithless creature though he was, whom they had sworn to defend, and so they stood in perfect order to their line of battle, fighting desperately till every man had been shot down; and when the mob did enter the palace, it entered over the bodies of twenty-six Swiss officers and 760 brave soldiers who had died like heroes.

Not long after, Switzerland became a republic, and then the people, wishing to leave a lasting tribute to the bravery of their martyred brothers and fathers, asked Thorwaldsen, the great Danish sculptor, to carve them a lion out of the rock near where these brave guards had once lived. The lion, which represents strength, is twenty-eight feet long, and is guarding with his torn and bleeding body the lilies and cross of France, the emblems of her greatness. The expression of the face of this lion is very wonderful, for out of its dying eyes, which seem almost human in their suffering, there shines a look of triumph that Switzerland's sons had been faithful unto death.

The Latin inscription under the figure says: "To the fidelity and valor of the Swiss. On the tenth of August and second and third of September. These are the names of those who fell most bravely fighting that they might not fall in fidelity to the oath." Then comes a list of the names of those heroes who died to defend a foreign king.

A poet has said of a similar case: "Each of the heroes around us has fought for his land and line; But thou has fought for a stranger, in the hate of a wrong not thine. Happy are all free peoples too—strong to be dispossessed, But blessed are those among nations, who dare to be strong for the rest."

—The Household.

Calf Feeding.

A bulletin of the Tennessee Experiment Station says: The dairy cow should never suckle her calf for more than three days. Some advocate taking the calf away as soon as dropped. It should be remembered, however, that the power to give milk is the result of stimulation and maternal instinct. It frequently happens that the calf is unable to consume all the milk produced immediately after it is dropped. The result is a portion is left in the udder. This, of course, produces inflammation and other troubles of this organ. It fails to stimulate the activity of the milk gland to its utmost capacity and soon results in a deterioration of the milk flow and a loss of the natural inherent secretory function of this organ. After the third day take the calf away and feed for two weeks or so on whole milk, then on skim milk and adjuncts, chiefly flaxseed gruel. The milk must be fed at blood heat, between 98 and 100 degrees Fahrenheit. The calf should early be taught to eat a mixture of grain and fodder. In the dairy the object is a rapid growth of muscle, but not fat. No difficulty will be experienced in teaching the calf to drink if a nipple is used. Equally good calves can be grown on skim milk and adjuncts as on whole milk, and at much less expense when properly managed. The calves should be handled constantly from the beginning to make them gentle. Handle the udder parts in the heifer and thus stimulate the flow of blood to these parts, directly increasing the activity of the glands and developing the milk-producing organs to the fullest extent. Breed at about eighteen to twenty months so that the calves may be dropped at from twenty-seven to twenty-nine months. Breeding too young is detrimental to the mother, for she cannot develop properly and support a foetus at the same time, and a stunted heifer will make a cow deficient in stamina.

Keep the Summer Baby Warm.

A summer baby requires nearly the same amount of clothing as one born in the winter. The little cashmere shirts may be of lighter weight, but they must still be chiefly of wool, and the flannel skirt, or plaining-blanket, cannot be dispensed with, says Ladies' Home Journal. The blanket in which the child is wrapped need not be as thick a one as in winter, yet one is still needed. A new-born baby requires warmth, and even the summer breezes are too harsh for the tender flesh until it becomes accustomed to the atmosphere.

Mixing of Solid Metals.

The mixing of solid metals is one of the marvels of modern physics. After keeping a cylinder of gold and one of lead together for four years, at about 65 degrees F., Sir W. Roberts-Austen finds that the gold has slowly but surely made its way into, or mixed with, the lead.

The Show Pig.

At the last meeting of the Iowa Swine Breeders' Association Mr. Harvey Johnson read a paper on the show pig from birth to maturity. In part he said:

Like most other breeders we have sows that have produced something good in the past, and we very naturally look to them for material for a show herd. When their litters are of sufficient age to turn out we usually put two and sometimes three litters together in a pasture where there is a good warm and dry building, and plenty of good grass. Near where the sows feed is a small enclosure with a low trough in it, and with a little persuasion and some tempting bits of food we expect to have the pigs feeding nicely at three to four weeks of age. The feed is increased as their capacity for handling is increased, but we are careful to underfeed rather than overfeed—feeding no more at any time than they will eat clean. We allow them to run with the dams until they wean them, unless we wish to breed the sows again. When the sows are removed and the pigs growing nicely, we feed them liberally twice a day, and have not yet found use for the third or noonfeed that some advocate when fitting stock for show, believing that the pigs will be healthier, will eat more grass, take more exercise and make larger and stronger hogs when the noonfeed is discarded. The first part of each feed is made by mixing water and what milk we have with shorts and low grade flour. It is made just thin enough to pour and is always prepared immediately before feeding.

We feed nothing sour to our pigs, not even a roasting ear or immature ear of corn. We feed no bran to young hogs, and especially not to those being fitted for show. There was a time when bran and shorts made a good growing food for pigs, but with the advent of our new, modern milling machinery, things have changed until today the bran we get has about as much feeding value for growing pigs as so many flakes of condensed air, while the shorts we get is but very little more than bran itself. So, for our show pigs, especially, we discard bran and use shorts and low grade flour, using about two-thirds of shorts to one-third of flour, mixed quite thick, so the pigs will not be forced to take too large an amount of water into the stomach, in order to get what food they need. The second part of each feed consists of soaked corn with a change to soaked oats or barley, the per cent of corn being decreased and the shorts and flour increased as the pigs grow.

We have never been a believer in feeding sugar, sorghum and sweet meats to show stock. They increase the formation of fat, but give practically nothing toward the building up of bone and muscle, and as show stock is usually used for breeding purposes the practice should not be encouraged. Eggs are a splendid food for animals being fitted for the show ring. Aside from being a complete food they will aid digestion, will make the skin pliable and the coat glossy. We aim to keep salt and hardwood ashes before our show stock all the time, but we keep it separate so the stock will not be compelled to eat more than they want of one in order to get what they want of the other.

We never confine in a small pen an animal intended for the show ring, nor do we keep one alone. We want each bunch to have a clover or rape pasture of reasonable size, where they can take exercise and grow a frame and bone as well as put on fat. We want the fitting period to extend over several months; in fact, from infancy to the time of showing, it should be a gradual and complete development of all parts of the animal, and not a short crowding period, that will cause the formation of bone and muscle, and it is much less likely to injure the breeding qualities of an animal, in bringing it up to that high state of flesh required by many of our judges, when the fitting process is a gradual development.

In the growing and fitting in swine for exhibition there are a great many details that must be attended to, such as keeping the appetite in the best possible condition; feeding a balanced ration; keeping the feet trimmed; seeing that each one takes a proper amount of exercise each day; that they have good shade, where there is a complete circulation of air, and that the animal will be so handled that it will be at its best at the time of showing. Every exhibitor is aware of the fact that success or failure in the show ring often hinges upon one or more of these details.

Now a word for the show-man. While the show pig is developing the show-man should also be developing; if he does not, it will be a one-sided development, for they must appear upon the scene of action together and, in victory or defeat, stand together. As a breeder watches carefully over his show pigs from infancy to maturity, attends to their every want, watches the development of those qualities that are so pleasing to breeders, there is very apt to creep into his mind (and especially so if he is a young exhibitor) the idea that his stock is so very near the ideal that it cannot be defeated, and often in his fancy he already sees the ribbon swinging from his belt. Such a man is doomed to disappointment. He will find the path through the show ring rough and rocky, whereas he had pictured it smooth and pleasant. He should develop the faculty that will enable him to understand that every pig he drives into the show ring will not return with a ribbon; that will enable him to see and recognize a good

pig, even if he is not the owner; that will enable him to accept all results like a man, and to talk as quietly and smile as pleasantly while the ribbon goes to his competitor as when it comes his way. This, like raising a show pig, is just a little hard to do, but it can be done.

Dairy Notes.

As we have said in a previous issue, the daily newspapers of Chicago have, some of them, been urging that the standard of milk be raised from 3 to 4 per cent. But that 3 per cent is high enough is evident from the known practices of other cities. Strangely enough, a like agitation is going on in London; but there is no thought of raising the standard to 4 per cent. The London standard for pure milk is 2.75 per cent fat and 8.50 per cent solids. In Edinburgh the dairymen wanted a standard of only 2.55 per cent fat. In London the matter is in the hands of a special committee of officials, who are considering a change of the standard. But 3 per cent is probably the highest they will consider.

Every farmer should have his cows tested for tuberculosis. Experience shows that nearly ever person that owns a cow is certain (thinks he is) that his cow is perfectly healthy. He says she does not cough, so how can she have consumption. The error lies in supposing that tuberculosis (consumption) is merely a lung disease. In a batch of cows the writer saw slaughtered several were healthy to all outward appearance, and the lungs were not affected at all by the disease. The presence of consumption would never have been suspected had it not been shown by the tuberculin test.

One cow in particular was perfectly healthy in the organs usually affected. But when she was hung up and cut open there was found attached to her backbone a single clump of tubercles about the size of a pint measure. The tuberculous family cow is a great menace to the family that uses the milk, and especially so if the udder be affected.

The color of a cow's skin is a thing that counts for much in the estimation of many purchasers of dairy cows. Especially in the case of the Jersey is it believed that a yellow skin indicates much yellow in the milk in the way of cream. But when we get down to reality and away from fancy we are compelled to acknowledge that the yellowness of skin indicates nothing, and that color of the skin does not denote high breeding. Some of the best Jerseys have skin that is nearer white than yellow. There may indeed be a connection between the color of the skin and the color of the milk, but there is none between the color of the skin and the amount of butter fat in the milk.

There is, however, a value in a yellow skin as well as in a yellow butter, because people have a fancy for the yellow color in both, and are willing to pay more for a cow that has a yellow skin than for a cow with a white skin. For this reason it is best to breed in the color where it can be done without sacrificing something else.

In England they have organized a "National Association for the Prevention of Consumption." Its plan of campaign is said to include the distribution throughout the country of thousands of pamphlets on the danger to the human family from tuberculous milk. An English dairy paper seems to think they are unnecessarily alarmed; but American investigators have shown that the danger is not fancied, but real. In Illinois, for instance, out of a hundred cows affected to some extent with tuberculosis three have tuberculous udders. This statement is made to the Farmers' Review by the state veterinarian of Illinois. New this 3 per cent may seem a small menace, but it is a large one. Where milk is mixed for city supply, the tuberculous milk from a single cow with an affected udder will go into thousands of homes. It will certainly start the disease wherever it finds conditions right to do so. We cannot be too cautious in this matter. Every user of milk not known to be free from such danger should see that the milk is pasteurized before being used.

Export Canned Beef.

The Dairy and Food Commissioner of Ohio says: Our export trade in canned beef from 1897 to 1898 declined approximately 16,000,000 pounds and in salt or pickled beef 23,398,000 pounds, or a total loss of nearly 40,000,000 pounds. In view of the repeated complaints made against this class of meats by American soldiers during the Spanish-American war, we may reasonably conclude that the decrease in foreign demand was due, in part at least, to the manner of canning, the use of preservatives injurious to the human system, or to the want of confidence in the purity and healthfulness of our food products warranted by an investigation of other prepared foods exported from the United States. Thus while with an increased supply, our food products should find an extended market and while honest dealers and the United States Department of Agriculture and our consuls to foreign countries are making every possible effort to introduce our goods, we find the market practically ruined by the fraudulent practice of a few men, who, by deceitful adulterations would accumulate fabulous fortunes at the expense of the health and life of the consumer and by bringing ruin and disaster to the honest dealer and to the producer of pure goods.

To persevere in one's duty and be silent is the best answer to calumny.—George Washington.