

yield may range from 10 to 16 tons, or more; it is well not to look for too great things at first. We must bear in mind that the factory does not want a four- or five-pound beet, but a neat, smooth one of about *two pounds*. As to the returns, taking the average of prices paid by all Michigan factories this year, we find it to be about \$5.20 per ton. With an average yield of 10 tons, this gives us \$52 as the average gross receipts from an acre of beets in this State this season. Any man, not a financial expert, can readily see that, at an average profit of \$22 per acre, he is not going to grow suddenly rich unless his acreage is large, but we know of men in this State who will this year grow 150 acres of beets, and they stand to make some money.

HOW BEETS ARE PAID FOR.

When a load, on wagon or car, reaches the factory it is weighed in, and a weight of twenty pounds of beets, representative of the lot, is taken for analysis. Tare, covering dirt and surplus tops, is then estimated by removing all soil and excess crowns from this lot of twenty pounds. The lot is then re-weighed, the difference in weight being the tare. The per cent. of tare varies from $\frac{1}{4}$ to $\frac{3}{4}$, depending on soil, weather, the way the topping was done, and the amount of handling the beets received subsequently. (Tare is the term applied to the beet minus the juice.) Tare averages about 7 per cent. The cleaned sample of beets is then taken to the factory laboratory, ground to pulp, and a portion analyzed for sugar. The per cent. of sugar in the sample is the coefficient used for paying for the whole load. The usual scale of prices is \$4.50 per ton of beets testing 12 per cent. sugar, with an increase of 33 $\frac{1}{3}$ ¢ for every per cent. of increase in sugar content. This season there were but few complaints regarding weighing and sampling, as the growers are becoming more familiar with factory methods.

AS TO SUGAR BOUNTIES.

In 1897, the Legislature of the State of Michigan, with a view to encouraging this then *infant industry*, passed an act guaranteeing a bounty of one cent per pound on all sugar made in the State from beets grown in the State. The first sugar company organized on the strength of this law drew some money in 1898. The act was then called in question before the Supreme Court, and was finally declared unconstitutional; with that, the payment of bounty ceased. The checks which the State had provided over the weighing, sampling, etc., were likewise removed, so that at the present time the various factories are entirely independent of State control.

IN CONCLUSION,

let me introduce some direct evidence on the beet-sugar question:

EUGENE AMES, Caro:—"Raised 12 acres in 1899. After paying all expenses, was \$150 behind, caused by land not being in proper condition, and inexperience. In 1900 raised 10 acres; cost of raising, including work, \$142; cleared \$436.39. Contracted this year for 20 acres."

The following were received in reply to personal letters:

"We pay \$4.50 per ton for beets testing 12 per cent. sugar, and in like proportion for those testing a greater or less amount. The beets this last campaign averaged 14.3 per cent. and upwards of 80 per cent. purity, the average price paid being \$5.28, delivered at our factory. MICH. SUGAR CO.
"Bay City, March 4, 1901."

"In reply to your letter, will say that the average yield of beets per acre at our factory this year was 10 tons. The average net price to farmers per ton, over and above freight and cost of seed, etc., was \$5.05. The average cost to the factory, \$5.56. The average number of acres per contractor was 5.1. The freight charges on beets adopted by the Michigan railroads are: 40 cents per ton for a 25-mile haul or less, and 50 cents per ton for 25 to 40 miles, and larger rates above this.
"Alma, March 4, 1901. ALMA SUGAR CO."

The Care of Consumptives.

A valued correspondent writes: "Your report of the Ottawa conference for the prevention of tuberculosis is very good, but in regard to the third statement at the head of the article, to the effect that germs are conveyed from diseased lungs by moist particles expelled in breathing and in the matter (sputa) cast off in coughing, I would be in favor of striking out the three words, 'in breathing and.' Some of the ablest authorities state that the germs, unless in very rare cases, are never expelled in ordinary breathing—a gasp will do it sometimes, but that is more akin to a cough. The germs always cling to a moist surface. You can see that this will make a wonderful difference in the nursing of a patient. While some separation of individuals is desirable, care to destroy the *sputum* is quite as good as the isolation which is now being clamored for, and which is difficult to get by poor people."

The same paragraph intimated the general view of the medical men at the tuberculosis conference to be that the germs floated in the air on being dried, and so found their way into the lungs of other persons. That they come almost altogether from the *sputa* is doubtless true, and only in rare instances expelled in hard breathing. It has been claimed, however, that germs have been found in that way on moist surfaces. There is certainly a danger of the isolation idea being carried to an absurd extreme, that would deprive the unfortu-

nate patient of certain nursing and friendly attention, or possibly desirable medical attendance, which would militate against recovery even under sanatoria conditions. The healthy human organism is surely proof against myriads of disease germs, else the race would speedily perish. The tuberculin-test fad has done a vast deal of damage and little or no good, and there is now a possibility of the fatal neglect of homes and home conditions, in which many, unable ever to reach a sanatorium, will die through the danger which our correspondent points out.

In so far as bovine tuberculosis is concerned—apart from what differences may exist between it and human consumption, and the latter not finding its source in animals—there is little doubt that the true safeguards and remedial measures are cleanliness and ample sunlight and fresh air, secured in stables by good ventilation, with ample nourishment. A case was reported to the conference where the ailment had been eliminated from a herd without separation, and Mr. Edwards, M. P., inclined to the view that isolation was not the necessity which some had claimed.

STOCK.

Changes in the Tuberculin Test Regulations.

To the Editor FARMER'S ADVOCATE:

DEAR SIR,—I have yours of the 7th in regard to tuberculin testing. In consequence of the imbroglia which the testing for tuberculosis of cattle going into the United States had reached, I arranged to discuss the matter with Secretary Wilson in Washington, and went down there last week. I found that what the breeders had so insistently demanded, and what the *Breeder's Gazette* had so aggressively insisted upon, namely, that the tuberculin test should be done away with for animals going into the United States from foreign countries, was quite impossible.

Mr. Wilson, the Secretary of Agriculture, said that he felt that he was absolutely right in his policy, and that he was not going to be driven from that position, especially as the law of the United States required such action.

Under these circumstances, the hopes of our own breeders that the tuberculin test should be entirely removed, as between Canada and the United States, were impossible of fulfillment.

Formerly the United States Department accepted the certificate of test from any Canadian veterinary whose name I submitted to them. Having taken the steps which they did, they now are not prepared to go as far as this, but they will accept the certificates of any of my Departmental officers just in the same way as they take the certificates of their own Departmental officers.

For the purpose of facilitating this work and relieving the burden as much as possible on the breeders of Canada, I have decided to appoint a few more Departmental officers and do this testing free of charge for export, as well as for the freeing of our herds of tuberculosis.

In connection with the importations from England, the United States Department is also willing to accept the certificate of an officer of mine in England, just the same as they accept the certificate of their own officer whom they have sent over.

As our own importers much prefer to have their cattle tested in Great Britain rather than in our quarantine on this side, I have decided to facilitate importation by sending over a thoroughly qualified officer, who will remain in Britain, and be at the disposal of breeders there who wish to export to this country, and his certificate of test will be accepted for cattle going through to the United States without further test here or at the frontier. This will be a considerable expense to my Department, but I feel that it will facilitate the important work of our live-stock breeders so much that I am justified in adopting the course. I am sure that the Canadian live-stock men will appreciate these steps, and while they have not secured all that they had hoped, the arrangements made will relieve them of much embarrassment and assist them to continue that profitable trade in cattle between Canada and England and the United States in which they have done so well.

Yours very truly,

SYDNEY FISHER.

Dept. of Agriculture, Ottawa, March 9th, 1901.

Is there any good reason for stock breeders to congratulate themselves or the country on the result of the sales at Guelph and Ottawa? Could not three-fourths of the stock sold have been disposed of for better prices at home? Deduct the expenses of freight, attendance, and railway fares from the prices obtained, and what is there in it?

Horse Breeding in the Last Thirty Years.

[An address by Alex. Galbraith, Janesville, Wis., before the Manitoba Horse Breeders' Association.]

In considering the very wide topic of horse-breeding in the last thirty years, I cannot in the time at my disposal do more than treat the subject in a rather cursory manner, contrasting the tastes, methods and conditions existing at that now distant date with those prevailing now, and filling in reminiscences from my experience and observation during that period both in Great Britain and America.

The changes and advances made by breeders of domestic animals in the last twenty-five or thirty years are not greater in any class of stock than in horses. Within my own recollection, a distinct evolution in the tastes of breeders and demands of the market is clearly noticeable, and in no breed of horses does this apply with greater force than to the British draft breeds of Clydesdales and Shires. I can well remember, when a small boy on the farm, a rather noted Clydesdale mare which my father owned. She was named Old Jess, and was sired by a son of the celebrated Broomfield Champion (95). This mare was the dam of many fine colts, one of which, Johnnie Cope (416), won the Highland Society's first prize at Glasgow forty-four years ago, and that season sired the celebrated black horse, Campsie (119), the winner of many premiums in Scotland, and one of the earliest horses owned by the well-known David Riddell. The old mare, Jess, to which I refer, differed in every material point from the typical show Clydesdale mare of the present day; in fact, she resembled far more closely a characteristic Shire mare. She was large, approaching, if not quite, 17 hands high, very powerfully made all over, with immensely heavy bone, not of the flattest or cleanest kind, but such as would appear to good advantage when measured with a tape line. She had wonderfully heavy feather of a quality in keeping with her immensely heavy frame; in other words, rather coarse, hard, wiry hair. Old Jess had never been worked on the farm, although she lived to be over twenty years old. She had, I suppose, a mind far above ordinary farm work, being considered and looked up to as a model mother of stallions. Contrasting that animal with the typical Clydesdale mare of to-day, we find the difference very marked indeed; the *weight* of bone and frame has very materially decreased; the *quality* and the action have correspondingly increased. The dams of such horses as MacGregor or Baron's Pride were but small mares, compared with Old Jess or even with Keir Peggy, the dam of the famous Darnley. I well remember seeing Keir Peggy win first prize at the Highland Show in 1864, and I saw the same mare twenty-two years afterwards, and still think her one of the grandest animals the breed has ever produced. She had considerable scale, a fair amount of quality, was very symmetrically formed, with good action; but the most remarkable thing about this mare, and which has been a hard problem for Clydesdale breeders ever since, was that by far and away the best colt she ever produced, and she produced ten in all, was sired by an undersized and rather inferior stallion. This stallion's name was Conqueror (190), owned by Mr. Moffatt, of Shirva, and I well remember that when the horse was hired at the Glasgow Spring Show of 1871, by the Dunblane, Donne & Callander Farmers' Club, to travel their district for small terms, the wisecracks laughed at the incompetency of the committee for choosing such a horse. Sir Wm. Stirling Maxwell's Estate of Keir being in the district, the manager thought he might perform a generous act by sending one of their many mares to the district horse, and, I understand, the reason why Keir Peggy was the one chosen was because she had failed to get with foal to any of their own stud horses, and they had several of considerable note. At any rate, the result was that Keir Peggy got with foal by this obscure horse and in due time produced the world-famed Darnley, probably the greatest Clydesdale of the 19th century. It seems rather the irony of fate that such a wonderful product should be brought about in this haphazard manner. Keir Peggy was afterwards bred to many excellent horses, but never produced anything at all equal to Darnley either for individuality or breeding qualities, although two of them were good enough to win at the Highland Show. So much for this digression. Sally, the dam of MacGregor, was a decidedly undersized mare, but had nice quality and shape, and seemed to nick especially well with Darnley, as she afterwards produced the champion, Flashwood, a horse of abundant size and beautiful finish—the best show horse of his time. But although this mare and the dam of Baron's Pride were smaller in size and in bone than the old-timers referred to, they were much superior in quality, much finer in hair, much better in feet, more elastic in pasterns, and superior in action; so much so, in fact, that the change wrought in those thirty or forty years in the typical Clydesdale cannot possibly be regarded as otherwise than a decided advance and improvement.

REFINING PROCESS RUNNING TO EXCESS.

The same refining process has taken place and continues to-day in other breeds. It is based on experience and practical knowledge; is not a fad, but a felt want. The animal of better quality, whether in horses, cattle, sheep, or hogs, is preferred the world over to the heavier, coarser, more phlegmatic animal, and why? Because fineness of quality, as indicated by a bright eye, a dense bone,