

nent reason that they look upon straw as fit only for bedding, or, at the most, that only a small quantity should be allowed with hay. I am not prepared to show that singly, or as a mixture, wheat, oat and barley straw is equal in feeding properties to hay of timothy and clover; but I do assert, without fear of disproof, that when properly managed by being changed in form when associated with other things, our common straws are just doubled in value for cattle food, and therefore anyone is not only extravagant, but wasteful and very improvident, who treats straw largely only as bedding. When we think of the fact that we must continue extensive grain growers, and must produce, on an average, as much straw per acre as hay, it is plain that even though only one-third equal to hay as a feeder, the mismanagement of straw stands as a serious national loss.

SCIENTIFIC FEEDING.

This reference to straw brings up the subject of the use of science in cattle feeding. The mere humdrum farmer naturally asks: Is there after all that is said and done, much help to be got from chemistry? Had it anything to do in establishing the Short-horn breed of cattle? Or how much of it, for example, did Mr. Russell, of Pickering, guide himself with in getting up the Dominion champion steer of last year? It is just possible that our best feeders never read a work on this science, general or special, and yet look at the magnificent animals they produce. I have never heard a chemist say the day is near when we will be able to make another champion steer from as much stuff as the farmer can carry in his vest pocket. Well, there can be no chemistry without practical facts—facts that you and I establish in our daily work. Take a familiar example: A farmer has corn, and peas, and oats, all at the same price per pound, and having no experience, is desirous of knowing which would pay him best in the fattening of ten head of cattle. An outside voice would be, give them a mixture of the three and you are sure to make no great mistake at least; but he is of an enquiring turn and wishes to know exactly which would be most suitable, so he applies directly to the chemist, who says: I have no personal experience in the matter, but I can show you that when we digest them with chemicals we find that corn should be first, oats second, and peas third best for your purpose so, "everything else being equal," you may calculate on corn as the most profitable grain of the three. This, "everything else being equal," means a great deal however; such as breed, age, condition when tied up, warmth, management; and that the food was grown under similar conditions to those which were chemically eaten. But another step has been made in this science feeding, whereby animals of various ages, and according to what is required of them, should receive just about so much of the various chemical materials that repeated experiments have shown to be necessary for their best existence and production, whether in working, milking, or fattening. Yet, even here, the "everything else being equal" will still be a powerful agent, and thus altogether, while we must acknowledge the great service rendered the cattleman by the chemist, the real nature of it is still that of a guide only, and not that of an imperious dictator. The farmer is one who cannot bear the idea that he has been selling anything while more

could have been got in the same market at the same time. But very many of you are doing so now, and have been doing so for many years. When you calculate the actual cash cost of producing a store cattle beast up to thirty months and allow, as you must, for the value it has left you in manure, it will be found that you cannot possibly make it less than four cents per pound. If then any one sells a 1,000 pound steer to be put up for stall feeding, at three or three and a half, he is simply disposing of his hay, roots and grain under market prices. It is impossible to gainsay this weak point of our practice. I know of no class of cattle so well qualified to fill up all our wants in the stall as the Short-horn and his grades. In impressive power, early maturity, weight and fattening disposition, they stand unrivalled. Next to them stands the Aberdeen Poll and his grades, with their better quality of flesh and equal maturing, but hardly equal in weight. The Herefords come third with their equal impressive power, and reliability as breeders, but not equal in early maturing, nor weight; and as a stall feeder the Galloway must take a fourth place, except in permanency of character and quality of flesh, in which respects he bows to no one.

ESTIMATED COMPARATIVE STANDING OF SOME BREEDS OF CATTLE FOR STALL FEEDING.

	Maximum Value of Points.	Short-horn.	Hereford.	Galloway.	Aberdeen Poll.
Reliable breeders	5	4	5	5	4
Impressive power	10	10	9	8	8
Early maturity	15	15	12	8	15
Weight	15	15	19	9	13
Fattening disposition	20	20	17	15	19
Least offal	10	7	10	10	8
Quality of flesh	5	4	3	6	4
Permanency of character	5	4	5	4	4
Cost of Production	15	14	15	12	14
	100	91	80	70	89

AGRICULTURAL STATISTICS BUREAU.

The eighth subject to which I invite your attention is one quite new to all: Our Government is establishing a department for the purpose of collecting a variety of information especially serviceable for the farmer. The conception has my warmest sympathy. We ought to be statistically wise in these days in the same: for example, of being able monthly to prejudge what kinds and quantities of produce the province is likely to offer for home and foreign markets. This, I am aware is a big thing, involving labor, great care, and the special study of a competent man; but it is one that no progressive country can overlook,—and, to a large extent, Ontario has already committed herself in this regard by the rich issue of the recent Agricultural Commission. Take an illustration of the value that will likely be placed in your hands next season, on this same question of beef growing. The regular township assessors, or other machinery, early in the year go their rounds and receive from every farmer, or other persons in the business, the number of cattle that will be ready for the butcher that season—say the 1st of May,—so that by the 1st of April at latest, the province should receive the report of the statistician on these and other items. The result will be that the owners, and not the purchasers, of beefing cattle that are ready for the market,

will be in a position to regulate the prices, because they know, to a few hundreds, how many can be had; and knowing, also, by the public press, the condition of all outside and inside markets, they can just hold or give as they deem best for their own interests. At present, our purchasers are middlemen, or agents, between you and the consumers, and having to scour the country pretty thoroughly in order to place themselves safely on the point of prices according to number to be obtained, they have necessarily the advantage. You will remember the wild guessing that was indulged in during the last two years in regard to the number of fat cattle being prepared for the British market. The sooner we know what we are able, or not able, to do, the better; if we are only making a yearly batch of one cattle beast per one hundred acres of our cultivated land area, or as much as one from every twenty acres, then we know exactly where to place ourselves in the world's competition. I earnestly trust our legislators will not disappoint the farmers in all this.

FATTENING A THREE-YEAR-OLD STEER.

No cattle feeder can take hold of a two or three-year old steer in the fall, and during the succeeding six months, carry him on and finish for the butcher, at a cost less than \$30,—that is, placing an actual cost value on the food consumed—not a market value remember, which would be just \$20 more. We have no right to charge our fattening cattle, or any of our animals indeed, with the market price of things, because that would be making a double profit,—the profit of the market and the profit of the stall; of course there is nothing wrong in it, so long as it is understood, but for our present purpose it is best to handle the one profit. In addition to this there is necessarily the proportion for attendance, bedding, and the usual risk by deaths. I know of but one way of making up any one's account in any business, which is to debit and credit whatever is given or received,—any other way must be false. Our fattening cattle beast must be debited with everything it consumes, or uses, or requires in any shape whatsoever. A proper value on the three things last named is equal to \$10, so that we have \$10 as the actual cost of the six month's finishing of one steer. This is the one item; the other is the value of the animal when bought or entered for the finishing process. If two and one-half years old it would, or should, weigh 1400 lbs., and be worth \$70. So then it really costs \$110 to produce a three-year-old steer that will weigh about 1650 lbs. by the best management, which may be set down as worth \$107, or 64c. per pound. Where now then is the profit of cattle feeding? Where would it have been had I followed the usual plan of charging food at market prices? Why, just \$20 less profit apparently,—not real, as just explained in regard to two profits. Have we then made nothing by this process of beef making? If all my standing is correct—and I now ask you to challenge it—it is very obvious that unless the manure is properly valued there is no cash balance in favor of the direct growth of beef. Nevertheless, there is a large profit in beef making. The bottom, or end, of the question is just this:—As manure is indispensable, and as crops must undergo a change through the animal system in order to make the best manure, the growing of beef is also indispen-