Comparative Feeding Value of Clover and Timothy Hay.

Prof. Ralph Hoagland, of the Division of Agricultural Chemistry, Minnesota University Farm, has recently tabulated the results of numerous analyses of red clover and timothy hay, made to determine their comparative feeding value in the fattening of live stock. The figures below show the number of digestible nutrients in one ton each of clover and timothy, respectively :

Nutrients.	Clover.	Timothy.	Difference in favor of Clover.
Ash	89.9	72.9	+17.0
Fat	38.0	24.5	+13.5
Protein	150.2	65.9	+84.3
Crude Fiber	290.7	418.6	—127.9
Carbohydrates	552.6	462.5	+90.1

The results here presented show conclusively the superiority of clover in feeding value. Clover contains over twice as much digestible protein, and considerably more digestible fat and carbohydrates, than timothy hay.

Clover is especially suited for young stock and milch cows, while timothy is more used as a feed for horses. Its market value for this last purpose is so high as to preclude its profitable use for general stock-feeding, since the same amount of nutrients can be purchased in other feeds for less money.

It should be remembered, in this connection, that the value of clover hay depends largely upon the stage at which it is cut, and the condition in which cured. As commonly made, its value is often disappointingly less than theoretical calculations indicate.

Pigs that Paid.

Editor "The Farmer's Advocate" :

I will give my experience in a small way in pork production the past year. Last winter we fed a litter of pigs that weighed 240 pounds each at six and one-half months, that were sold for $9.50 per hundred. They were fed pulped roots and barley chop, about equal parts by measure. I do not know what amount they consumed, but they did well, and were very profitable. In March a young sow farrowed five pigs. They were fed a fair amount of milk from the time they were one month old until they were three months old. They were fed 2,600 pounds barley, chopped fine, and two small loads of peas on the straw in the barnyard (about 15 bushels). I do not know what amount of peas the pigs would get, as there were over one hundred hens with the liberty of the same yard. They were sold on the 3rd of October, at an average weight of 276 pounds, at $8.40 per hundred, or $115.90 for the five pigs when just five days over six months old. They would have been profitable at one-half the money. We are at present feeding a litter of eight. At three months, or 91 days, they weigh 95 pounds, and have made a gain of 42 pounds each the last thirty days.

Young pigs must have some milk before and after weaning to start them on the road to profit. These pigs have not been fed much milk, as we have only had two cows milking, and have raised both calves. Pulped mangels and fine-chopped barley, mixed with hot water, but not sloppy, is our winter feed. Young pigs want an hour or two exercise every day, if the weather is suitable summer and winter, but should not run around all day. WM. JAMIESON.

A Veteran Herdsman.

Born in 1861, in the Village of Sussworth, on the River Trent, in Lincolnshire, England, Fred Norton, the subject of accompanying photogravure, emigrated to Canada in 1883, at the age of twenty-two years, and made his first engagement in this country as herdsman with the late Hon. M. H. Cochrane, whose beautiful Hillhurst Stock Farm, at Compton, Quebec, was at that time the Mecca of stock-breeders from all parts of the American continent. Here for seven years Norton had charge of the famous herd of Shorthorns, some of which were sold for prices well up in the thousands of dollars each. Later, at Hillhurst, he had the care of the grand herd of Herefords, headed by the peerless son of the noted Grove 3rd, Imported Cassio, considered by the writer the most perfect beef-type bull of any breed that has ever figured in Canadian show-rings, with a width, depth, thickness and smoothness rarely equalled in any country. He was also a sire of exceptional prepotency, his progeny winning widely at Provincial Fairs for years, prominent among which was his champion daughter, Vanity 3rd, a model in type and quality, while on more than one occasion Cassio and four of his daughters of graded ages made up the first-prize herd at Provincial Fairs in the late eighties.

A magnificent herd of Aberdeen-Angus cattle was also founded at Hillhurst by importation and breeding, headed by the splendid son of the noted Paris 3rd, Lord Hillhurst, which, with his four charming daughters, "black, but comely," made up the first-prize herd at Toronto in 1890. These also were fed and fitted by herdsman Norton, and after their dispersion he engaged with Mr. Cochrane's neighbor, H. Dudley Smith, founder of the noted Ingleside herd of Herefords now at Hamilton, Ont., with whom he has remained steadily for twenty years, making a splendid record in prize-winning, with such noted animals as the champion bulls, Sir Horace, Mark Hanna, Amos, and Bourton of Ingleside, the latter bred on the farm; also the champion cows, Lady Bountiful and

Darlington Cranford 21st.

Shorthorn dairy heifer. First in class and champion, Royal Show, England.

Lady Tushingham, the latter a winner at the Columbian Exposition at Chicago, in 1893, weighing 2,000 pounds. In later years, the Ingleside herd has made an excellent record in prizewinning at leading Eastern Canada exhibitions, including the first herd prize and male and female championships at the Western Fair, London, and the male championship at Toronto, this year, with the capital yearling bull, Bonnie Brae 21st.

Handicapped by the loss of his left hand, taken off by a straw-cutter twenty-one years ago, Norton's career has been an exceedingly creditable

Fred Norton.

A veteran Herdsman.

one, and his holding his position for so long a period is a fine example of satisfactory relations between employer and employee, each exhibiting a proper interest in the welfare of the other.

Careful, constant and courteous, faithful to duty, and competent in his calling, the veteran herdsman is not without a sense of humor, as evidenced on the occasion of his handing to the editor, by request, a copy of his photograph, with the remark, "If you keep it in your house, you'll never be troubled with rats."

Corn as a Food for Steers.

Address by Prof. G. E. Day, at Ontario winter fair.

There are two well-known types of Indian corn, viz., dent and flint. The grain of corn may be either white or yellow in color, but my investigation shows that there is no relation between the color and the feeding value of corn. The grain of flint corn contains a little more protein, as a rule, than that of dent corn, but it is a little lower in carbohydrates or starchy matter. The difference between feeding values of flint and dent corn is not material.

Corn grain contains a high per cent. of starch and a rather low per cent. of protein and ash. It also contains a high per cent. of oil or fat. Since carbohydrates and fat are mainly useful for forming fat in the animal body and supplying the animal with energy, it follows that corn has a very high fattening value. Protein is useful in the animal body for the formation of muscle, and the ash of the food goes to build up the bone of the animal. From its composition, therefore, it will be noted that corn is not a good bone and muscle former, but is a most excellent fattening food. Practical experience also proves this to be the case, and corn must be understood in order to be fed to the best advantage.

For fattening comparatively-matured animals, no cereal grain equals corn ; but, in the case of very young animals which are rapidly building up the muscles and bones of their bodies, corn should always be fed with some other food which will make up for the deficiency of corn as a bone and muscle former.

There are several important by-products from the corn grain. One of the most common of these is gluten feed, which is composed of the gluten of the corn and the bran or outside skin of the grain ground together. This by-product occurs in the manufacture of starch from corn. Another by-product of the starch factory is gluten meal, which consists of the gluten of the corn, but does not contain any of the bran. Another by-product is hominy feed, which is a by-product in the manufacture of hominy, and consists of the bran or hull of the corn, together with some of the starchy matter.

Unfortunately, the terms gluten meal and gluten feed are often confused. The names are very much alike, and yet there is quite a wide difference in the composition of the two products. Gluten meal is very much richer in protein and fat than gluten feed, whereas gluten feed is considerably higher in carbohydrates than gluten meal. Gluten feed, however, has a high percentage of protein, and is an exceedingly valuable food for dairy cows when it is desired to increase the proportion of protein in the ration. Gluten meal would, of course, be more effective than gluten feed, but it is an exceedingly heavy meal, and a little more care would be necessary in its use. Hominy feed is low in protein, but fairly high in carbohydrates, and very high in fat. It is a palatable food, and has a very considerable value for either dairy or beef cattle, but would be more valuable for fattening than for milk production.

The following table shows the dry matter and the digestible nutrients in 100 pounds of the corn grain and its leading by-products :

	Dry matter in 100 pounds. Lbs.	Digestible nutrients in 100 pounds. Crude protein. Lbs.	Carbo-hydrates. Lbs.	Fat. Lbs.
Dent corn	89.4	7.8	66.8	4.3
Flint corn	88.7	8.0	66.2	4.3
Gluten meal	90.5	29.7	42.5	6.1
Gluten Feed	90.8	21.3	52.8	2.9
Hominy Feed	90.4	6.8	60.5	7.4

As to the corn plant as a whole, we find that it produces a large amount of bulky fodder per acre. Of the dried product of the corn plant, we have corn fodder and stover. By corn fodder is meant the whole corn plant, including the ears, whereas stover refers to the corn plant with the ears removed. The following table shows the