

problems connected with modern agriculture and the maintaining of soil fertility. The announcement in regard to it, however, coming from such an important source, shows in a very striking way what science has done and is doing for the farmer. Science and agriculture must go hand-in-hand in all matters pertaining to the farm and its products.

Fattening Steers

February 13, 1900, the Kansas State Agricultural College began fattening eighty head of steers to test the value of several different methods of preparing feed for steers where, on account of cholera, hogs could not be used to follow and save the droppings. The steers were divided into four lots of twenty each. Lot one was fed shelled corn and whole alfalfa hay, lot two shelled corn and alfalfa hay cut in inch lengths, lot three corn-meal and whole alfalfa hay, and lot four corn-meal and alfalfa hay cut in inch lengths. With all lots the hay was thrown in the bottom of the grain boxes, the grain placed upon the hay and the two carefully mixed. Salt and water were kept before the steers all the time.

The average weight of the eighty head at the beginning of the experiment was 1,036 pounds per steer. The steers were fed 116 days and were then ready for market, averaging 1,307 pounds each, an average gain of 271 pounds each or an average daily gain of 2.34 pounds per steer.

The steers required an average of 747 pounds of grain and 385 pounds of hay for each 100 pounds of gain. This is much below the average amount of feed required to make 100 lbs. of gain.

The steers ate an average each of 19.4 pounds of grain a day. This is a low amount of feed for the grain made.

The gains for the whole feeding period are as follows:

	Gain per steer.
Shelled corn, whole hay.....	262 lbs.
Shelled corn, cut hay.....	257 lbs.
Corn-meal, whole hay.....	273 lbs.
Corn-meal, cut hay.....	693 lbs.

Average gain of steers fed shelled corn, 260 pounds each. Average gain of steers fed corn-meal, 283 pounds each. This shows a gain of 8.8 per cent. from grinding. The steers fed shelled corn required an average of 780 pounds of grain for 100 pounds of gain. While those fed corn-meal required an average of 718 lbs. of grain for 100 lbs. of gain.

But little was saved in cutting the hay, the average gain of the steers fed whole hay being 286 pounds each and those fed hay cut 275 pounds each, a gain of 2.6 per cent. from cutting.

There is a shortage of both grain and roughage in Kansas this year and every feeder should get the most possible out of his feed. One experiment does not settle any question in feeding but may indicate what is probable. The results obtained in this experiment seem to indicate that feeders can get considerably more gains from their feed by mixing the grain and hay, as considerably less than the usual amount of grain was required in this feeding to make 100 pounds of gain. Our explanation is that where grain is fed alone much of it is not brought back to the mouth again, while if the grain is mixed with hay all of it gets the benefit of thorough mastication in the cud. There is less difficulty from scouring where grain and hay are fed together.

The steers were sent to Armour Packing Company, Kansas City, for slaughter test and their report is as follows: "The cattle dressed out 59.3 per cent. of live weight, the yield of fat 6.7 per cent. The carcasses cut bright, were of good color on the outside and made good, clean, bright-looking, well-colored beef. Our buyers consider that ground corn and alfalfa is the best feed for cattle."

The eighty head made an average gain of 7.5 pounds for each bushel of food eaten and ate 28.8 pounds of hay with each bushel of grain.

The gain from the different methods of feeding was as follows:

	Gain per bushel of grain (56 pounds).
Shelled corn, whole hay.....	7.1 lbs.
Shelled corn, cut hay.....	7.3 lbs.
Corn-meal, whole hay.....	7.4 lbs.
Corn-meal, cut hay.....	8.2 lbs.

—Press Bulletin, Kansas Experiment Station.

[NOTE.—The average gain of steers fed on whole hay is given as 286, which evidently is a misprint, as the context shows. The figures should be 268 in order to show a gain of 2.6 per cent. for cut hay.—EDITOR.]

Live Stock Notes

By Stockman

CLYDESDALE SIRES.

The show season being finished, there has been the usual comparison of prize-winners. The list gives Baron's Pride (9122) the first place, and no other horse near him. Of 252 prizes offered at the seven leading shows, Baron's Pride was the sire of 42 animals winning 99 prizes. The next to him on the list is Sir Everard (5353), with but 20 prizes won by 13 animals. Prince of Carruchan (8151) and Monrane Mac (9958) follow next, each with 13, and Royal Gartley (9844) has 11, the three last having six and eight animals shown. Handsome Prince (10356) has five and Lord Stewart (10084) has four, each with seven prizes. There are four with three, and the balance are scattering ones and twos. Baron's Pride is owned by Andrew Montgomery, of Netherhall, Castle Douglas, Scotland.

SCOTCH FAT STOCK SHOW.

Scotland is to have a fat stock show this winter in the Waverley Market, Edinburgh, 5th and 6th December. In addition to cattle, sheep, and pigs, there are to be prizes for feeding roots—turnips, cabbages, and potatoes, for grains, and an exhibit of butter-making showing the most modern methods. The prospects are that this new departure for Scotland will be a decided success.

FEEDING HEAVY HORSES.

For steady, hard work heavy horses require abundance of nourishing food. One of the largest English firms allows 29 lbs. per day and asserts that this is the least that will keep very heavy horses at hard work in good condition. Oats, good and well cleaned, are the best grain food for horses and well-cured timothy hay the best rough feed. For economy other grains may be used, and the following was a cheap ration used by one English firm: Indian corn 10 lbs., Egyptian beans or Canadian peas 5 lbs., oats 2 lbs., bran 2 lbs., hay 10 lbs., roots 3 lbs. This makes a cheap ration of 29 lbs. with the roots as an extra. Linseed was used for sick or delicate horses. Oatmeal gruel is used by many to give a drink when the horses come in tired at night. Notice the weight of hay used, 10 lbs., very much less than is usually fed in Canada.

FALSE ENTRY AT SHOW.

At Birmingham, England, quarter sessions Joseph Gowling-Hill farm, Radford, Leamington, was charged with making a false entry of the age of a Hereford bull exhibited at the Birmingham show. The directors of the Agricultural Society prosecuted. It was shown that the animal in question was calved 23rd July and he made an entry giving the date as 13th September. Gowling was found guilty and fined \$600 and costs.

IMPURE BUTTER.

Canadian butter is making for itself a good name in Britain. The continental shippers are feeling the competition and in some cases have resorted to questionable practices to beat the Canadian article. This was brought out in the city of London court recently in an action for damages over the sale of a parcel of Dutch butter valued at \$5,000. The purchasers were able to show that the butter contained about ten per cent. of margarine cleverly mixed with it. The court gave a verdict against the sellers of the adulterated butter. The Canadian article is pure and no margarine is allowed to be imported into Canada.