

Breeder and Grazier.

Sawdust as a Feeding Material.

A number of carefully conducted experiments on the digestibility of woody fibre have led to the conclusion that the latter is assimilated by the animal organism in proportionately speaking larger quantities, to the extent even of 70 per cent., instead of 34 per cent. under a poor than under a liberal system of feeding (as regards quality of the diet.)

According to the well-known journal edited by Stockhardt, *Der Chemische Ackermann*, several lots of five to six year old wether sheep had shown, on a trial being made, that they were capable of digesting as much as 80 per cent. of the woody fibre of paper pulp, 50 per cent. of that of poplar, and 37 per cent. of that of pine wood.

Notwithstanding, however, the nutritive qualities possessed by so cheap and universally abundant a material, no practical application resulted from the experience thus gained until dearth of provender and the high price of straw at length induced Mr. Lehmann, for the Tharander Agronomic Institution, to take up the subject afresh. Mr. L., commencing his trial of woody fibre in the form of sawdust, with ten cows and one in-calf heifer, endeavored to obtain reliable information on the following points:

1. Will cattle, without being driven to it by excessive hunger, eat sawdust, when the latter is mixed with their other food?

2. Can sawdust be advantageously employed as a substitute for straw in feeding horned stock?

3. Have resin and the essential oils contained in pine wood sawdust any effect favorable or the reverse, on the composition of the milk and butter?

4. What effect has long continued feeding with sawdust (mixed of course with other materials) on the health and condition of cattle?

The total live weight of the animals was 10,800 pounds, and they had been receiving daily, per 1,000 pounds live weight, the following mixture:

31 7 lbs. sliced turnips.	} mixed and then moistened with lukewarm water
2 2 lbs. oat sheels.	
3 6 lbs. chopped oat straw.	
5 8 lbs. grain.	
0 5 lbs. bran.	
3 8 lbs. rape cake.	} These (after the bran had been boiled in water) were added to the above
8 9 lbs. long oat straw.	

The only difference made at first was to add for two consecutive days, for every 1,000 pounds of live weight, 1 1 pounds of sawdust, obtained from a neighboring saw-mill and passed through a wide-meshed riddle. All the cows partook of the new article of diet, and no portion of their ration remained unconsumed. The like was the case during the next eight days, when the quantity of sawdust had been increased, and that of the long straw diminished by 4.6 pounds. In all, this mixture, which appeared to completely satisfy the animal's hunger, was continued for fourteen days, and throughout that time no change in their health or general appearance could be perceived. On the other hand their milk, though the same in quantity as before, grew richer in quality, and the butter improved in flavor and composition.

Owing to the exhaustion of the stock of sawdust, it unfortunately became necessary to interrupt the experiment for the space of ten days, and to substitute for the new food 8 9 pounds—the amount originally given—of long oat straw. The other items of diet remained unaltered, and at the expiration of the ten days the experiment was renewed for five weeks without a break. The last change of regimen made was to replace the grains by turnip leaves (become slightly acid), to increase the allowance of sawdust from 1.9 pounds to 7 pounds, and to diminish in a corresponding degree, i.e., from 8 9 pounds to 4.6 pounds, the amount of long straw. The mixture then consisted of—

31 7 lbs. sliced turnips.	} Mixed and moistened with lukewarm water.
18 lbs. turnip leaves grown acid.	
2 2 lbs. oat sheels.	
3 5 lbs. chopped oat straw.	
7 lbs. pine wood sawdust.	
6 lbs. bran boiled in water.	} Added to the above before feeding began
3 2 lbs. r-pe.	
9 1 lbs. long oat straw.	

On this the cows were found to do so well that it has been adopted ever since as the regular food of dairy stock kept at the institution, and by the employment of sawdust (as above) to one-third of the wood fibre contained in the mixture, a daily saving is effected, averaging 1 1/4 per 1,000 pounds of live weight.—*Rural New Yorker*.

Spout-Washing Sheep.

The following extract from a paper read by the Hon. G. H. Cox before the Agricultural Society of New South Wales, although too late to be of much practical benefit during the present season, is well worthy of being placed upon record:—

"My experience goes to prove that, however carefully you may breed your sheep, and however superior the wool may be which they grow, your returns will be disappointing without the greatest attention is bestowed upon the washing of your clip. Every gentleman who has judiciously expended money upon the necessary plant and appliances for spout-washing his wool will freely admit that the returns are on hundredfold. Some three or four years ago the sheep owners of the Mudgee district were anxious to obtain the opinion of manufacturers as to the general getting up of their wool and the sorting of their fleeces. We used to get periodically the brokers stereotyped report that 'so many bales of wool were sold—that the attendance of buyers was limited or otherwise—that some bales were seedy and moiety, and others rather tender'—all of which we knew, and, knowing, could not remedy, but we could never learn what the manufacturer said about it—whether it contained too much or too little yolk; too dry from over-washing, or too heavy from under-washing; was the sorting satisfactory, &c. Well, we engaged the services of a gentleman who went through the cloth manufacturing districts, and who supplied us with much valuable information, which we utilised, and which I shall now be happy to impart to others. Our directions were never to use water for the soak beyond 110 degrees Fahrenheit; never to use alkalies, such as potash, soda, or hard soap, but that any quantity of soft soap might be used, in fact, using it to any extent was merely a matter of pounds, shillings, and pence; but that all alkalies destroyed the fibre of the wool, making it harsh and dry, and, what the manufacturers say, making it work unkindly. We use spouts with a quarter inch opening, and with a pressure of 8 feet. The great object to be obtained in washing wool is not only to make it white but to make it bright. After leaving the spout, the fleece when squeezed by the hand should puff out again, not feeling sticky, and should glisten in the sun with a peculiar brilliancy; if too little yolk is left in the wool, it will be wanting in softness; if too much, it will become sticky, and after a time turn yellow. The desirableness of this brilliancy in the wool is that manufacturers of merinos, de laines, and other light fabrics will give extreme prices for it, as this bright wool only will take delicate dyes. Frenchmen are the best customers for this kind of wool and their absence from or presence at the sales makes a difference of at least 1s. per lb. in the price. The number of days that should intervene between washing and shearing must depend partly upon the state of the weather, as well as upon the condition of the sheep. Yolk will rise quicker in fat sheep than in poor ones, but from two to three clear days is generally sufficient. In sorting we skirt very heavily, taking about one-half from the fleece, and making it into what we call broken fleeces or pieces and locks. The remainder is sorted into combing and clothing sorts."

A Plea for the Cows.

Reader, are you fond of milk? Do you like butter or beef? Then have compassion upon the kind, generous cow. Most farmers feed their horses something better than straw or badly cured hay in winter, though their work during that season is light. Horses are usually kept in comfortable stables, with clean, dry bedding, renewed every night. They are also curried and brushed every morning, and fed on good hay, oats, chop, etc., until they are "fat as tools," as if they were being prepared for the butcher instead of being kept for labor. This is curious philosophy. A fat man is not in a condition to endure hard work, nor is he as comfortable or healthy as a person in moderate flesh. It will usually be found that those who thus overfeed their horses are the very men who starve their cattle. In summer they are turned into the woods lot, the fallow field, or the highway; while the horses are always "in clover." In winter, the milch cow runs the road by day, and at night lies or stands shivering in the wet or muddy barn yard, or is treated to the luxury of a snow bank for a bed. She eats straw and corn fodder, with an occasional frozen pumpkin! And yet she is expected to yield daily gallons of that most indispensable article of food, milk. Is it strange that she grows poor, or that her calf is unthrifty? If we have no compassion for the cattle, and dis-

regard the divine command to treat them with kindness, considerations of pecuniary interest ought to correct this cruel and inhuman practice. A cow that is poorly fed cannot give much milk, nor milk of a good quality, for the plain reason that it is among the most nutritious of all the substances we consume, and cannot therefore be manufactured from food that does not contain nutritious elements. Some farmers instruct their wives that "corn must not be fed to the cows because it dries them up." But the women—God bless them!—have compassion upon the kind and docile animal upon whose system such severe drafts are being constantly made, therefore insist upon furnishing food that will repair this waste. High feeding for cows in milk pays as well as generous feeding for steers. Let us see. Milk sells readily in the country villages for four cents a quart, while in the cities it brings a higher price. Suppose the cow to give three gallons a day, we have 48 cents, or something over \$14 per month, as the value of her product. What other animal will make such generous returns for food, care, and generous feeding. If we consider the profits resulting from raising the calves for steers we shall have reasons equally conclusive in favor of generous keep. Whether markets be good or bad the well-kept steer, in good form and of good quality, always sells at a profit to the breeder. But we cannot have good form, good condition, and good quality where the calf was not properly started. A runt calf becomes "paunchy" and unthrifty, a form which subsequent good keep will seldom correct. The true principle therefore is, if we regard the matter only in a pecuniary point of view, to feed well, feed as much as possible in-doors, and we shall have more manure, and the manure where the cattle are well fed will be of better quality. Our land needs the manure as much as our cattle need the nutritious food; and thus it is, as the English say, the more we feed the more we can produce. We should never feed in the highway. If we cannot feed in-doors, we should certainly feed on our own land, and aim to select a place where it will do the most good.—*Chicago L S Journal*.

The Production of "Two-Year-Old" Beef in a Highland Glen.

Skirting the northern boundary of his Grace the Duke of Richmond's deer forest of Glenfiddoch, and fully 1,000 feet above sea level, Mr. Macpherson, Auchlochreach, Glenrinnies, Banffshire, has for several years reared splendid black polled cattle. He was the breeder of that wonderful specimen of three summers' development with which, in the Smithfield show of 1872, Mr. Bruce, Burnside, Fochabers, carried the first prize in the polled oxen class, and the champion plate as the best animal in the hall. Mr. Macpherson sold the other day six two-year-old polled beasts of his own breeding to a butcher at £30 10s. a head, and for five or six years he has been close on that figure with his surplus animals of the same age. It may be added that the two-year-olds in the whole of that Highland glen have, on an average, brought from £20 to £28 a head for several years. Their feeding consists of plenty of good milk to begin with, good pasture grass, turnips and straw, with a little cake in winter, and, in some cases, a little oats, as the selling period approaches. The dietary thus includes very little not grown on the farm. Mr. Macpherson's are the only pure polled cattle in the glen, the others being crosses from mixed bred cows and short horned or polled bulls, generally the former.—*North British Agriculturist*.

Good Suggestions.

The collar should fit closely, with space enough at the bottom to admit a man's hand. If too large it has the bad effect of drawing the shoulders together. On no consideration should a team or any work horse be compelled to wear a martingale, as it draws the head down and prevents him from getting into an easy and natural position. The check rein may be used, but only tight enough to keep the head in a natural position, and should never be wound around the hames. See that the hames are buckled tight enough at the top to bring the draft irons near the centre of the collar. If too low, it not only interferes with the action of the shoulders, but gives the collar an uneven bearing. Caution should be taken that the girth is not buckled too tight, particularly on string-teams, for when the traces are strained it has the tendency to draw the girth against the belly and distress the horse.—*Rural Home*.