

The Breeder and Grazier

Salt in Animal Economy.

The forthcoming report of Prof. A. J. Cook to the Michigan Board of Agriculture will contain the following essay upon the value of salt in animal economy:

I have been invited to write a scientific disquisition upon the above subject by a gentleman of rare culture, and one who occupies a very leading position in relation to the agriculture of our state.

Salt, or chloride of sodium is not only found in very constant quantities in the blood, but is also present in nearly all the fluids and tissues of the body. The origin of the salt of the body is in the general food, as nearly all animals and vegetable substances contain it in minute quantities; and into the human body, that of our domestic animals, and often of wild animals, it is also taken separately, or uncombined with other substances.

The exit of salt from the body takes place through the secretions, but principally as an excretion eliminated by the kidneys. Not only the salt which comes from the breaking down of the tissues, consequent upon use, is thus eliminated, but also the surplus which may be taken in the food above what is needed.

The function of salt—for that it is very important is certainly proved by its considerable quantities in the tissues, and even greater abundance in the animal fluids—has been definitely ascertained. It is not so much to form tissue as to preserve the consistency of organs and organized fluids, and to aid the processes. It has been shown that it is chloride of sodium, or salt, that keeps the albumen of the blood in solution, and the corpuscles in their semi-fluid condition. Hence the entire absence of salt in the food, free or combin-

ed, would be fatal to life. Again, it has been definitely settled that salt promotes absorption, as perhaps no other substance does. Again, salt acts as an appetizer in human food, a use by no means to be neglected.

Now, there are two questions of practical importance to the farmer: First is salt needed to the perfect health of our domestic animals in greater quantities than it exists in the general food? and secondly, is it desirable for any reason to give it to our horses and cattle? And one question of general interest: Is it unhealthy to eat salt in large quantities?

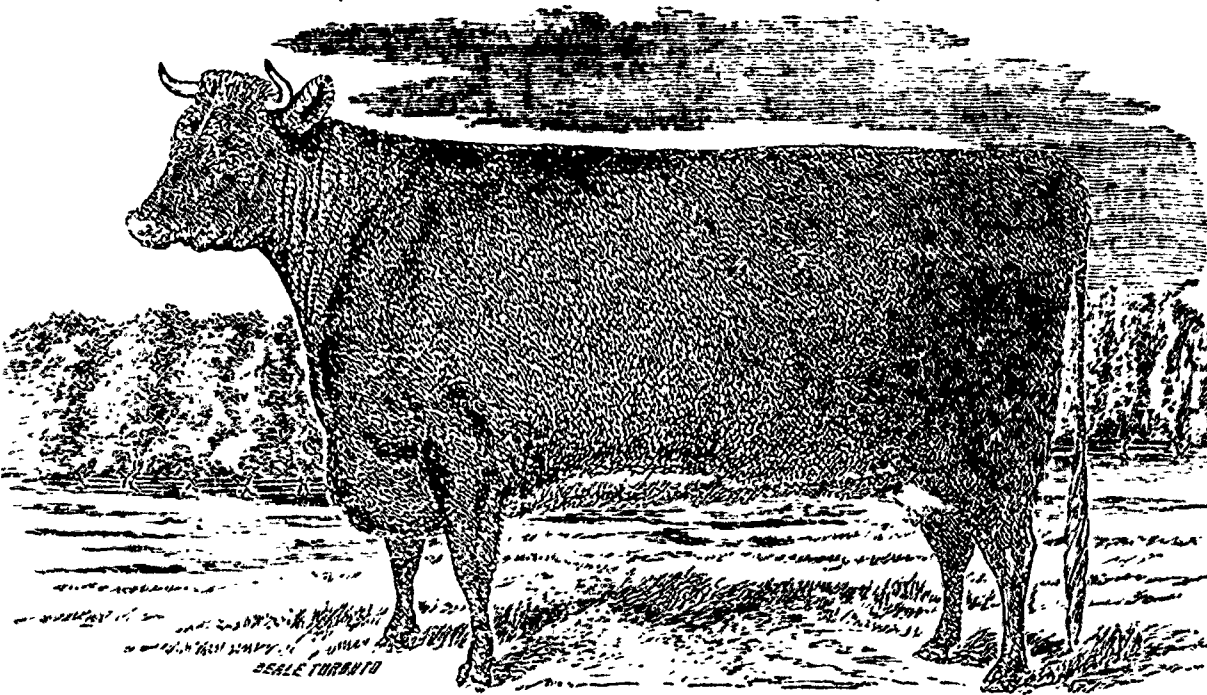
First, then, is salt needed in the animal economy in larger quantities than it exists in the general food? In 1854 a French scientist by the name of Boussingault experimented on six bullocks. He treated them all alike in every respect except that three were fed 500 grains of salt each day, while the other three had no salt. These experiments commenced in October. For six months no noticeable difference appeared; but in the succeeding April a difference was noticed in the looks and actions in favor of the animals receiving the salt, which continued to be more striking, till finally the animals not receiving any salt appeared sick both as to looks and actions, while the others were as fine in appearance as could be desired. Mr. Dailley, of England, tried similar experiments with sheep, and with the same results.

These experiments show very conclusively that animals which are stall-fed need more salt than is contained in

their usual food; and the supposition would be that the same is true of animals which roam the fields and crop the fresh grass, though the fact that animals in a wild state frequently get no free salt and yet appear very healthy, would argue the reverse of this. Yet these same animals seem to crave salt, as the much-frequented salt pools clearly prove; and a natural taste or desire is pretty good evidence of an organic need. The general opinion, too, of our best farmers, as indicated by their practice, is no small argument in favor of salt. Yet this argument may be weakened from the fact that the same solicitude that would give salt, would give other extra care, which would tend to make sleek kine. Hence salt might get too much credit in accounting for the fine condition of salt-fed stock.

Yet the fact of whole herds all through the country, which look well and yet never get any free salt, is the strongest argument against its necessity. There are only two solutions to this question: Either the animals get the needed extra salt by licking the earth, or else they would look and do still better were it a part of their aliment.

In the second place, shall we feed our animals salt? I say emphatically, Yes. We see the weight of argument seems to favor its use as a need, which the animal feels especially when stall-fed; and, as we shall soon show,



Short-Horn Heifer, "DUCHESS 2d OF DERHAM ABBEY," the Property of Hon GEO. BROWN, Bow Park, Brantford, Ont.

salt can work no injury. It will pay simply in making our animals more docile and manageable, even were the argument from organic need entirely wanting.

Again, I have heard our scientific city milkmen say that milk might be skimmed to a limited degree, and by adding a little salt the fraud would be completely masked. Now, we know how readily the milk glands abstract substances from the blood. Is it not probable, then, that salt-fed cows would give milk that would seem richer from its containing more salt, aside from the chance of their being more healthy?

Lastly, is salt unhealthy when taken in quite large quantities? Experience says no. Physiology sustains the negative. As already stated, if the salt in the blood becomes excessive, it is excreted by the kidneys and does no harm. Let no one, then, who has a taste for very salty victuals, which they have heretofore gratified with grim forebodings of disease and death, any longer fear; for if salt will not save us, it will tend in that direction. Experience and physiology alike bid us eat all the salt our appetites crave; for if we do eat more than the system needs, it will be harmless; and not simply that, but be a positive good even then as an appetizer. I would have no one infer from this that it would be safe to give animals an excessive amount of salt when salt-hungry, any more than any other article of food. It should be kept before them, or else fed in limited quantities at stated intervals.

Duchess 2nd of Derham Abbey.

The engraving on this page is of the imported Short-horn, Duchess 2nd of Derham Abbey. She is of a red and white color, and has the unmistakable appearance of her aristocratic breeding. She was calved 24 July, 1867, at the premises of her breeder, Mr. Hugh Aylmer, of West Derham Abbey, England, and was imported to Canada in 1870. She is of a family originally established, early in the present century, by Major Brown, of South Lincolnshire, a noted breeder of his day, and a purchaser at Mr. Colling's sale. Mr. Aylmer became possessor of the family by purchase from Mr. Wetherell, who bought Lady Welbourn from Major Brown.

The pedigree of Duchess 2nd of Derham Abbey is:—

Dam	Sire	Breeder of Sire.
	Lord 1, Norfolk Thrusdale Duke (24066)	Mr. Hugh Aylmer.
Red Duchess	" Red Knight (1809)	Mr. Grundy.
Roseleaf	" Whittington (12290)	Mr. Holland.
Lady Welbourn	" Lord Lowther (7104)	Mr. Seymour Doughton.
Eliza	" Panton Favorite (4610)	Mr. Dunning.
Miss Ellen	" Grandson of Gracie (1085)	Mr. Wiley.
Elizabeth	" Son of Gracie (1085)	Mr. Wiley.
Deasy	" Son of Vulcan (907)	Mr. Brown.
Bess	" Vulcan (907)	Mr. Brown.
Betty	" Quaker (1819)	Mr. Slater.
	" First Stone Hill Bull (3794)	Mr. Charles Colling.

ABSORBENTS.—For absorbing purposes in stables, muck suits excellently, and retains odor. Sawdust does this less well; some odor will escape. But as an absorber of the juices and odors it must give place to muck, but especially to pulverized clay or clay soil. This (dry of course) will readily absorb the fluids and prevent the escape of odors. What is more, clay has the property of not only retaining the nitrogen of the urine, but preventing fermentation, so that it is held intact till the plants take it from the soil, absorbing it in its unfermented condition.

Earliest Feed for Cows.

EDITOR CANADA FARMER.—Could you or any of your readers tell me the earliest feed to sow for milch cows. My pasture gave out this year long before the oats and peas which I sowed together were ready for cutting. I have heard of fall rye, but I do not know when to sow it, or what kind of soil it requires. A YOUNG FARMER.

North Easthope, Ont.

The earliest feed that can be got is undoubtedly Red clover. Fall rye would come in next. Drill in a bushel to a bushel and a half to the acre on well-prepared ground about the last week in September. Any land that will grow cereal crops will do. Rye will succeed on poorer soil than wheat will. It will come in about the end of June. To follow the fall rye, sow rye again early in the spring. The winter rye will do just as well to sow in spring as spring rye, which latter might be difficult to get.

THE YIELDS OF FORAGE, both of roots and maize, obtained by French farmers are remarkable. At a recent exhibition of beets in Paris, specimens were exhibited of crops which gave for a yellow beet 55 tons per acre, and for red globe beets nearly 50 tons per acre. A species of maize known as giant, or *Caragua*, returned no less than 70 tons of green fodder per acre. The fertilizers used for this latter crop were 350 pounds per acre of a mixture of three parts superphosphate of lime and one part sulphate of ammonia.