

in them. Mr. Sutton and Dr. Voelcker fully endorsed this view of the case, and the crops were only hastily glanced at.

When the crop in the old pasture has been weighed, differences scarcely apparent to the eye will be marked to some extent. They were small for the two last years, but may show more when the results of the third year are added.

On the conclusion of the inspection of the grass experiments, the visitors returned to Mr. Sutton's residence, close to which his nice little herd of Dexter Kories were seen and much admired. After that, in a marquee erected close to the house, Mr. Sutton hospitably entertained his visitors at luncheon, and received their hearty thanks for the interesting excursion to which he had invited them, and for his efforts to benefit the agriculture of the country, by means of his instructive experiments.

MASSACHUSETTS.

The Thirty-fifth Annual Report of the Secretary of the Massachusetts Board of Agriculture presents in a volume of 800 pages the proceedings of the board for 1887, with the papers and ample reports of the discussions on the subjects which have come with special interest before the board during the past year.

Among the valuable papers presented is one on the success of ensilage, by Prof. H. E. Alvord, in which, among other conclusions reached, he gives the following summary: Silos may be above or under ground, or partly both; they should be air-tight, and water-tight, and frost proof, several small ones are better than one large one; properly built of wood or stone, the cost may vary from 25 cents to \$5 for each ton of the contents; they may be filled slowly or quickly, in all weathers, the fodder cut or whole; weighted or not if air-tight, but heavily weighted if not air-tight at the sides, most animals prefer it to the best dry forage; the best time is when the plant approaches maturity; Indian corn makes the best fodder, yielding from twenty to twenty-five tons to acre, and ensilage may be made for \$2 or less per ton; it will occupy one-eighth of the space needed for dried fodder; the weight required on the silo should be 150 pounds to the square foot; it should be fed about half-and-half with dry fodder; and it is best adapted to high-priced lands. When compared with dry corn fodder, says Prof. Alvord, it produces results so satisfactory as to surprise the chemist, and which the chemist cannot explain. In allusion to the discussion about the name, Prof. A. says, "We must accept the term *silo* for the receptacle, and *ensilage* for the product or pitted material," for which he cites satisfactory reasons. (1)

"The scrub and the runt never improve. You may breed from them for generations, and the offspring of the scrubs, will be scrubs, and that of the runts and titmen, will be runts and titmen, every time. But the thoroughbred or high blooded sire is sure to breed to an improvement over himself. We must stop using scrubs as breeding animals if we wish for improvement."

This is too sweeping, altogether, and not well considered. If the writer had bethought himself, he would have remembered that there was a time, not very long ago, when all our domestic animals were "scrubs and runts," from the breeder's point of view. The improvements which have resulted in thoroughbred stock are almost all the work of skilled breeders during the last hundred years. It is quite true to say that scrubs and runts, in the hands of scrub farmers, will continue scrubs and runts; but in the hands of skilled breeders the scrubs and runts can, by high feeding, good care and intelligent selection, be converted into thoroughbreds. *Ex.*

(1) Why not *silage*?

THE NUTRITIVE RATIO.—Yeomans quotes Sir John Lawes as saying that "he never troubles himself very much with the nutritive ratio of the foods he employs; "also, that "those who work upon some fixed formula as regards nutritive ratio, cannot feed as economically as those who pay regard to the varying prices of food." But it should be remembered that what will do for a veteran and successful scientific farmer, like Sir John Lawes, might not answer for everybody. Inexperience must depend more or less upon rules. However, it is true that the ratio between the prices of feeding stuffs is much the same, as a general thing, as the nutritive ratio, that is to say, their market value is graded closely upon their feeding value, as determined by the experience of practical men.

However, as this is the *practical* part of the question, it will be well to bear in mind that in the May (1887) Agricultural Science, Sir John B. Lawes says:

"The chemist's mode of separating digestible from indigestible substances, is totally different from the process employed by the animal. * * * At present we are not in a position to separate digestible from indigestible food. * * * When we consider that the distinction between what is called digestible and indigestible substance is measured by certain solvents used in the laboratory, we can hardly be surprised that the stomach of the animals and the reagents of chemists do not tell the same tale. * * * In my own practice of feeding I have never troubled myself very much about the nutritive ratio of the foods I employ. * * * A nutritive ratio is very good in theory, but in practice we have to consider questions of economy which are often greatly at variance with theory. At the present time I am not acquainted with any reliable feeding experiments which establish as a fact that food of one special nutritive ratio can be used with greater economy than another."

Adams County, Ill.

JOHN M. STAHL

COMPOSTING MANURE DOESN'T PAY.—The *Rural New Yorker* says that the old-fashioned method of turning and working over manure for six months or a year before using it is very rightly falling into disuse. The careful experience of Dr. Voelcker, chemist of the royal agricultural society of England, proves that manure gradually depreciates by keeping, under the very best management, gaining in water and losing in valuable organic matter, which is spent in the fermentation.

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