

and potatoes, compared with rye, oats, peas, barley, buckwheat, corn and hay, when fed to cattle and hogs?

I want to investigate this subject, and take this course, hoping to receive information from those who have made accurate experiments; and any such information will be gratefully received by a

SUBSCRIBER.

Fort Fairfield, June 23, 1858.

NOTE.—We have several times given statements of chemists and others, of their experiments to ascertain the comparative value of the different roots and other substances used for fodder—good hay being the standard.

In No. 21, Vol. 21, we published the following editorial upon this subject, which may give some light to our friend by way of an answer to his queries:

It is a great object to the farmers of Maine to raise a supply of the best kinds of fodder for their stock during the winter. Hay, we all know, is the great dependence—the staple material for this purpose, but there are many other crops which can be raised to advantage among us, and which are very valuable for furnishing food to stock, and thereby saving hay.

In order to ascertain the real value of these crops for the purpose above named, it will be necessary to compare the nutritive properties of the several articles with good hay as the standard.

Experiments, and close and careful comparison of the results of many trials, have given the following as the comparative difference between the articles mentioned and good hay. We have published these results before, but we now put them in tabular form, so as to give the reader an easier mode of comparing them.

100 pounds of hay are equal to
275 pounds of green Indian corn,
442 pounds of rye straw,
161 pounds of oat straw,
153 pounds of pea straw,
201 pounds of raw potatoes,
175 pounds of boiled potatoes,
339 pounds of mangol wurtzel,
504 pounds of turnips,
51 pounds of rye,
46 pounds of wheat,
59 pounds of oats,
45 pounds of peas or beans,
61 pounds of buckwheat,
57 pounds of Indian corn,
68 pounds of acorns,
105 pounds of wheat bran,
109 pounds of rye bran,
167 pounds of wheat, pea, and oat chaff,
179 pounds of rye and barley

From this "bird's eye view," it will be easy to calculate the *fodder* value of any of the above articles which you may raise. For instance, if you have 504 lbs. of turnips, they will give as much nutrition to your cattle as 100 lbs. of good hay, or in other words, it will take 5 lbs. of turnips to be equal to 1 lb. of hay.

An ox, it is said, requires 2 per cent. of hay per day if he does not work, and 2½ per cent. if he works. Suppose, therefore, you have an ox that weighs 1500 lbs., he will require 30 lbs. of hay per day if he does not work. But you wish to feed him in part with turnips. If you give him 15 lbs. of hay, how many pounds of turnips must you give him to make up the supply? Ans. 75 lbs., which, at 60 lbs. to the bushel, will be 5 pecks.

Again, according to the table, a little more than half a pound of Indian corn is equal to a pound of hay. If, therefore, you give the same ox but 15 lbs. of hay, how much Indian corn must he have to supply the 15 lbs.? Ans. A little over 8½ lbs. Allowing corn to weigh 50 lbs. per bushel, it will take 5 quarts and a third.

Allowing the estimates in the table to be correct, they will be a convenient guide to farmers in feeding cattle, &c., on other articles, in order to save their hay.

A milk cow is said to require 3 per cent. of her weight per day. A sheep, full grown, 3½ per cent.—*Maine Farmer.*

111.—AGRICULTURAL INTELLIGENCE.

ANCIENT ROMAN AGRICULTURE.

By request of the Agricultural Association, the Rev Dr McCaul delivered an Address on Ancient Roman Agriculture, in the Crystal Palace, on the Thursday evening of the Exhibition. Mr Ferguson, the acting President of the Association, introduced—

The Rev. Dr. McCaul, who, in an able and excellent address, gave a brief but very clear description of the chief characteristics of Roman agriculture, as related to their farms and farm houses, their crops, their cattle and agricultural products, and their mode of cultivation. Under the first head he referred to the care which they exercised in selecting a farm, and mentioned the particulars as given by Columella, which should influence a choice, viz., good soil, good air, good water, good roads and good neighbours. The advice, which the old author gave, would in his (Dr McCaul's) opinion, be valuable even now in Canada to those desiring to select a position. The Roman farm houses—at least of those who were in good circumstances—were on a large scale, containing separate accommodation for the proprietor and his family, the farm servants and slaves, and granaries, barns and other out offices of a similar description. The wealthy had villas on a wonderfully large scale, containing different suites of apartments, suitable for use in winter and in summer, and attached to the villas were covered drives, ball courts, swimming basins, fish ponds, &c. Lucullus had a villa so large, that it was said he had more ground to sweep than to plough. Of their crops cereals were not held in the high estimation in which we hold them. They depended chiefly for their supply of wheat on Sicily, Sardinia, and Egypt. Their principal remunerative crops were from vines, and olives, and bees. They had fall and spring wheat, spelt, barley, sesame, rye, millet and pannicum, but not *zea*, interpreted as maize, for this was unknown until after the discovery of the new world. Of other crops, which they cultivated he would name beans, vetches, lupines, hemp, flax and turnips. In their kitchen gardens they had many of the vegetables which we now value, with some peculiar to the soil and climate. They had garlic, leeks, onions, parsley, asparagus, cucumbers, beets, cabbage, artichokes, kidney beans, lettuce, parsnips, anise, mustard, skirret, savory, &c. Of their fruits the principal were, apricots, damsons, peaches, pomegranates, cherries, apples, pears, strawberries, blackberries, bilberries, &c., but it is not probable they had melons. It is surprising that the list of their horticultural products contains but very few species as compared with ours. In this our greater intercourse with remote parts of the world gives us very marked advantage. They did not rear fat cattle as we do for the butcher, for joints of beef and mutton were not articles of ordinary diet. They were well acquainted, however, with the good points of cattle, and their description, would be a useful index even now. Oxen were valued by them for draught; sheep for the fleeces, and for milk, butter and cheese. Butter was not used as we use it, the oil of the olive supplying a substitute for most purposes. As they had not the sugar cane, honey was a very important article in their diet, yielding the saccharine matter which they required. There were two modes of cultivation—by the proprietor himself with slaves, or by *coloni*, free tenants. Sometimes they adopted a principle similar to the *metayer* system on the continent of Europe, and not unlike our plan of shares, by means of a class called *coltores*. They were acquainted with the advantages of the rotation of crops, paid much attention to manures, and were careful in forming drains, but it is not probable that they used those formed by tiles. Of their agricultural implements they had many intended for the same purpose as those in present use. Here the learned Doctor explained from a diagram, the different parts of a Roman plough by drawings of sculptures from Theban tombs of the 18th and 19th Egyptian dynasties. In