

## NEW MANURES.

So many experiments are now making in England upon various substitutes for stable manure, that there is good reason to believe that much useful knowledge on this subject will soon be acquired. These articles all possess the great advantage of being so light of carriage, that it reduces the expense of drawing out manure to a trifle. It is improbable that any of them would like the dung of animals always serve for manure without exhausting the soil, but yet their prudent and judicious application may enrich even poor soils, when they are employed to raise crops to feed animals who will make a more permanent manure. Bone dust applied in small quantities, enables the Scotch farmer to raise crops of Turnips on poor sandy or gravelly soils, and these Turnips being fed to sheep on the field, fit the ground for producing a crop of Grain, followed by Clover, &c. Gypsum has proved very useful in the neighboring states, and many have enriched land by the aid of kelp and rock-wood, while others by applying them too frequently have rendered it barren. It should, however, be remembered that it would be unprofitable here to imitate all the practices that prove profitable in England. Rent of land is there very high; men's wages very low. Duties upon imported provisions have long been very high, so that every article of food has been one third above the common price in other countries.

It is not improbable that many of these new manures may have a more lasting effect than seaweeds or fish. Many barren soils and even rocks contain a large proportion of the materials of a fertile soil, which is rendered useless by a combination with vitriol or some other substance. A manure that should decompose a useless mixture and liberate its fertilizing principles, would be valuable often for more than one crop. A small quantity of wood ashes improves some soils for a number of years. The effect of Oyster shells upon a dry, vitriolic, rusty slate soil, has been very perceptible for six or seven years. Common salt is a very useful manure at a distance from the sea, if applied at long intervals and in small quantities, but if more than what is barely sufficient to produce a good crop be used in spring or summer, it will injure the land for several years; at the commencement of winter a large quantity of salt does not appear to injure the land. The following extract from Lorain, upon the operation of Gypsum, will apply to several of the new manures. "All animal and vegetable substances enrich the soil. No other substances are known to effect this invaluable purpose. Mechanical manures, such as clay, sand, gravel, &c., when properly applied, promote vegetation by altering the texture of the soil, and do not alter the enriching substances found in it. The manures which are generally termed stimulating, also promote vegetation, but in doing this they exhaust the soil; hence it is, that the fertilizing powers of Lime and Gypsum will cease to act when they no longer find a sufficiency of animal or vegetable matter in the soil to act upon, and will resume their action as soon as either of those enriching manures has been applied. It seems to be generally believed that Gypsum assists the decomposition of such animal and vegetable substances, as either from their texture, or from being too thinly scattered through the soil, cannot be decomposed by the less powerful operations of nature or art, with sufficient dispatch to produce luxuriant vegetation; also that this substance excites the plants, and increases their capacity for gathering and digesting nutriment. It is certain that Gypsum produces amazing fertility in old worn out soils, where but few traces of animal or vegetable matter appear; likewise that great debility generally takes place in such soils, in consequence of the exhausting influence of this substance, when proper attention has

not been given to introduce a sufficiency of animal or vegetable matter to counteract the impoverishing effects of this powerful promoter of vegetation. When this substance was first introduced as a manure, its exhausting properties were not known, and many greatly injured their grounds by the improper use of it, especially those who resided where there was a ready market for hay. This caused loud complaints. They have, however, been nearly silenced by the practice of those who were careful to return to the ground a reasonable proportion of its product; and the improvement made in the soil, by the judicious use of this substance, almost exceeds credibility."

From the British American Agriculturist.

## NUTRITIVE QUALITIES OF CHARCOAL.

Though the importance of mixing charcoal with the food of animals, particularly that of swine, has been generally acknowledged, and its benefits extensively tested, still it has been supposed that it only acted as a corrective to the acid tendency of food, and facilitated fattening by improving the health of the animal. Some experiments are, however, on record, which would seem to show that charcoal acts a more important part in the matter than has been usually assigned to it.

In 1793, a family being driven from New York by the fever, were absent six or eight weeks before it was deemed prudent to return. A number of fowls confined in a loft to the workshop of the house, were forgotten at the time of leaving, and it was known that there was nothing provided for their subsistence, it was expected on the return that they would be found starved to death. To the astonishment of all, the fowls were found alive and fat, though there was nothing upon which they could have fed, except a quantity of charcoal and shavings, water being supplied from the grindstone trough.

These facts coming to the knowledge of a gentleman in New York, as we learn from the Recorder, he instituted the following experiment. He placed a turkey in a box or enclosure, four feet long, two feet wide, and three feet high, excluded light as much as could be done, and allowed a free circulation of air, and fed the turkey with soft brick, broken fine, pounded charcoal, and six grains of corn per day. The box was kept locked. At the end of a month, the turkey was killed in the presence of several gentlemen, was large and heavy, and on being opened was found filled with fat. Nothing, on dissection, was found in the gizzard and entrails but charcoal and brick. Last winter the experiment was repeated, and with the same success.

Several years since, on fitting out one of the Liverpool traders at New York, a pig on board was missing, and was supposed to have been lost. The cargo was taken on board, stowed and the vessel sailed. It was now discovered that the pig was alive in the coal hole, but as he could not be got at readily, it was concluded to leave him to his fate. He remained in this retreat until the passage was made, when his pigship was found to be not only alive and well, but materially improved in condition, though there was nothing, coal excepted, he could have swallowed.

When it is remembered that wood, sugar, and several other substances, some of which are most nutritive, are compounded of nearly the same original elements, it would seem possible, by animal chemistry, to convert them to saving life; though all experiments with wood or charcoal failed. The German chemists have converted wood into very palatable bread, by roasting and pulverizing; but calcination, it has been supposed, would destroy whatever powers of nutrition wood might originally contain. The chemical