

by remarkably in the quantity of potash they hold. The ashes of a touchwood from the yellow Birch are mostly carbonate of ash; those of one of apparently the same species from the west contain very little. Before the decomposition of vegetables, as performed in the laboratory of nature, can be well examined, the agency of the Fungi must be taken into consideration; and they are the only agents, many insects assist them, of which we feed upon the Fungi. We have Tables of the quantity of Nitrogen contained in various kinds of grasses and other food. These would be very useful were they founded on certain data. We think they are not. They should be formed by farmers rather than Chemists. The trial should be made, not in a laboratory, but in the stomachs of the animals. Sir Humphrey Davy ascertained Timothy grass most valuable when nearly ripe; it would probably be found so for horses, but much better for cows before they are mowed. According to Leibig a large proportion of our bread is wholly useless, for he thinks that starch gum and sugar will not form muscular fibre, or any part of an animal except fat. The starch, according to his theory, should have become a feeble race of bread with fat, for Potatoes being chiefly starch, should have yielded very little muscular fibre. Many millions besides the Irish live mostly upon potatoes, yet grow to the ordinary size, and are as strong as their fathers were. The African Negro, while collecting gum for five or six weeks, lives upon it, and gains flesh; he is then in constant exercise, his muscles certainly are supported with what they lose by constant wear. Not to dwell longer on this strange theory, we would simply ask, Has any farmer ever found an article of food by which an animal can be fattened without at the same time supporting his strength? We desire to see we may not be misunderstood as wishing to discourage the application of Chemistry to Agriculture. Far from it. Much useful has been discovered, and much more we confidently expect will be. But we do wish that in publishing these discoveries in a popular form, such language may be used, that the uninitiated may be able to distinguish between demonstrated facts, and theories formed by reasoning from, perhaps, insufficient data. The Royal Highland Agricultural Society have caused some useful experiments to be tried upon feeding, and many experiments have been made by others to ascertain the value of different kinds of food for farming stock, some of which furnish useful information, but for the greater part have not been conducted in such a manner as to prove anything. But the person who can afford the time to attend to an experiment of this kind will certainly confer an obligation upon his brother farmers by publishing it, for it is supported by a great number of experiments that we can get a correct idea of the relative value of different kinds of food. We would strongly recommend experiments to ascertain the proper season for cutting hay, as we believe that it is generally cut too late. Several years ago, farmers on Connecticut River were accustomed to cut a part of their wheat before it was fully ripe, in order to get a loaf of superior quality for their pastry, but it was supposed that there must be a loss in the quantity. It appears now, from Mr. Nam's experiments, that the unripe wheat gives not only the best but the most flour; the last process of ripening being only an increase of bran at the expense of the flour. By reasoning, a theory was formed, that boiled oats must be more nutritive to a horse than raw; but the experiments directed by the Royal Highland Society, have proved that the reverse is the fact. Thus a theory was founded upon insufficient data; the powers of the stomach of the horse were not known. Experience is the only foundation for a correct theory. Much labour is expended in

cooking potatoes for swine. An experiment tried in the States seems to prove that they are better in a raw state. This experiment ought to be repeated by several persons, for if this result is confirmed, it will effect a great saving with those who have been used to cook their potatoes.

The experiments that lead to useful discoveries, are often unprofitable to those that make them, but we have all received much useful information from those who preceded us, and it will cancel a part of our debt, if we make an addition to the stock of human knowledge, however small it may be, for millions are composed of units. Knowledge is the most valuable inheritance we can leave to our descendants.

### MANURES.

These may be ranged in two classes, one, comprehending the dung of horses and cattle, rotted grass sod, and decayed vegetable tables of every kind that grow on rich land, may be applied to the land in any quantity without injuring the soil, although, if it is possible to ruin a crop by over manuring; the other comprising lime, sea plants, and many saline substances, to which we may add, shells and fish, if applied in too large quantities, or too frequently, will injure the soil, and in some cases this injury is not recovered from for a number of years.

Kelp and Rockweed appear to change, when decaying, mostly into a gaseous or vapoury state, leaving very little visible remainder. While decaying, this vapour is a powerful manure; but it cannot be confined by a covering of earth. We have in the Spring, made a heap with about twenty loads of Rockweed and the same quantity of soil from a pasture. At the end of three weeks, when it had become hot, it was turned; for the purpose of cutting the sod finer, and used for potatoes, producing a crop equal in quantity to what would have been produced from stable manure, but of inferior quality. We have also, in the fall, made a similar heap, with 100 loads of Rockweed and 100 loads of Sods; it heated and did not freeze in winter. When turned, in the Spring, the Rockweed had disappeared and the sod had become quite rotten; it had the strong smell of seamud (Sulphurated Hydrogen,) and appeared to the eye like good manure, but the fertilizing vapour had evaporated. Twenty loads of fresh cut Rockweed, used as soon as it began to decay, produced more than the whole heap.

Flesh and Fish are, while decaying, powerful manures, but if allowed to decay mixed with earth, the most valuable part is dissipated. We have read indeed, of twenty loads of manure from a dead horse, but never were able to learn the art of fixing the volatile effluvia from decaying animal substances. A pound of fresh will, it is believed, produce as good a hill of potatoes as a shovel-full of dung. When the first settlers of New England planted their first crop of Indian Corn, they were directed by an Indian to make a Weir for catching Shad, and to put a Shad in each hill of Corn. We recollect, that in years long bygone, it was customary with boys who were hoeing Corn, if they killed a black snake, an adder, to coil it round a hill of Corn and cover it with earth; the leaves of the corn in a short time acquired a very dark green colour, grew very rapidly, and generally produced a very large crop on the adjoining hills. Fish Gibs in a heap of manure, lose most of their value. They should be put into the ground with the manure, or applied while growing, if possible, but if not covered up, they should be prevented as much as possible from decaying, by mixing with peat earth, placed where the sun will not shine upon it. Manures of this kind should be used alternately with stable manure and compost. Land has been often injured for some years by