

manures of the garden, in that admirable laboratory, the compost heap.

I now proceed to the enumeration of "Waste Substances:"

Tanner's Waste.

The hair, pieces of skin, and effete lime, produced as a waste by tanners, properly composted, has a value far exceeding its usual cost, when compared with stable manure. It has long been sold in this city at 50c. per horse-load. It should be mixed with loam, and frequently turned, until well decomposed. As a permanent fertilizer, it is of much value, on nearly all soils and for all purposes. The waste produced by morocco-dressers and furriers, is more valuable than that from common tanneries.

Brewer's Waste.

The waste hops of the breweries form a valuable substance. It is especially useful as a top-dressing or mulching for strawberry beds, in winter to protect the plants from the frost, and in summer to keep the fruit clean and to shade the soil. The chief constituents of hops, when decomposed, is about the same as those of leaf mould or rotten straw, perhaps less varied and important, but still they have been found highly useful as a fertilizer, when ploughed in in large quantities, upon the richest market gardens. Chemistry alone is not sufficient to explain some facts like this.

Old Lime Rubbish.

The plastering taken from old walls, especially that which contains hair, is an article well worth gathering for many purposes, more particularly for the fruit and flower garden. I have come to the conclusion that effete lime, that which has been burnt and slacked for a long time, is much more valuable than is commonly supposed. Lime, when united with sand and hair, in plastering mortar, produces, no doubt, nitrate of lime, and valuable silicates and sulphates, which renders old lime rubbish more valuable than even fresh-burnt lime. Fruit trees, flowers, and even vegetables, seem always to luxuriate in old lime, such as old shell beds, the site of old buildings, &c. Some remarkable instances of this might be cited. Old lime rubbish should be pounded up and screened, and made as fine as possible before it is used. It will be found most useful, perhaps, in very rich garden soils, or in those which are close, wet and heavy.

Pork-Packers' Salt.

The refuse salt of the pork-packing houses may often be bought for one-third the price of clean salt, and in small quantities, is highly useful. This salt contains much fat, blood, and animal matter. Strewn upon the garden at the rate of five to ten bushels to the acre, in the fall or early in the spring, it has the effect, in most cases, of driving away cut-worms and other injurious insects; it keeps the soil moist, and it aids in the chemical actions which are constantly going on in the soil. My opinion is, that it aids materially in the decomposition of the rocks or silicates in the soil, and no doubt also effects useful combinations with nitrogen and other elements. Ten bushels of salt per acre should not be applied just before sowing seed, as that quantity might prove dangerous to vegetation at first. Smaller quantities may be applied every year.

It is chiefly, however, as a useful agent to mix with fresh lime, that I would recommend refuse salt. One bushel of salt, mixed with three bushels of fresh lime, and at once slacked under cover, and frequently turned, makes a compost, so to speak, of great value. As an agent for decomposing sods or other rough vegetable matter, it is almost equal to potash or wood ashes, and vastly superior to lime alone. As a fertilizer also, applied to rich garden soil, especially sour soils, it is of greater value than lime, and much more economical; for five bushels of it will do the work of twenty bushels of lime.

I may here remark that in my opinion the application of lime is too much neglected by gardeners, both in the garden and compost heap; and I will further add, that it is probable that there is not so much difference as has been supposed between fresh or caustic lime, and old lime or slacked lime. Indeed I am inclined to think that ground limestone (which has never been burned) and ground marble may be quite as useful, in the hands of the gardener, for many purposes where the slow action of lime is desired, as even freshly burned and freshly slacked lime, if not more so. This is a point worth looking into.

Old lime rubbish and effete lime are particularly acceptable to the roots of fruit trees, grape vines, and soft-wooded plants.

One or two more hints on lime. It is very desirable as a top-dressing for lawns. A perfect piece of lawn grass can scarcely be obtained without it. The application should be light, and frequently repeated, and the lime should not be too caustic.

Mr. Henderson, in his recent work on Market Gardening, before referred to, notices the remarkable fact that there is a large tract of land occupied by market-gardeners, at Communipaw, N. J., the soil of which contains a large amount of shell lime, deposited from the ocean, and there the disease known as "club root" in the cabbage has never been seen, although crop after crop of this vegetable has been taken from the soil for many years. Mr. Henderson hence rather rashly assumes that "club root" is caused by an insect, and that shell lime is a certain remedy for it. He does not prove the existence of the insect, nor does he show, by other cases of cure, that lime is the sure remedy. The fact which he states respecting the Communipaw soil is, nevertheless, a valuable one.

Brick Rubbish.

Old brick rubbish, especially that of soft bricks, is not without value as a fertilizer in the garden. Brick rubbish is, of course, *burnt clay*, and furnishes at least a silicate of alumina, and some lime, potash, magnesia and iron. Under the influence of decaying vegetable matter, brick rubbish will be decomposed in the soil, and will yield up its inorganic constituents to plants in the same way that decaying rocks do. On rich, heavy and moist soils, I think brick rubbish will pay for handling.

Rotten Rock.

Similar to brick rubbish in quality and in value is rotten rock, or the soft surface stone of some quarries, consisting of shaly and micaceous limestones, which are easily broken with a hammer. This sort of rock, when applied to soils rich in vegetable matter, is readily decomposed, and yields