

manures as we consider worth their attention.

Dissolved or Vitriolized Bones.—It is to the suggestions of the agricultural chemist that we owe our knowledge of this valuable and economical manure. The mode of preparing dissolved bones is as follows:—

Let the bone-dust be well moistened with water, and allowed to lie in a heap for three or four days, after which time it will be put into tubs, and then add to each hundred weight of bones half the quantity, or 50 lbs. of sulphuric acid, poured in at once, the whole being well stirred. In a short time it will become like mortar, but in order that the entire mass may be brought under the action of the acid, the mixture must be allowed to remain for two or three days, after which time it will be mixed with dry earth or ashes, so that it may be the more readily distributed in the drills. It must be remembered that the finer the bones are ground, so much the more readily does the acid act upon them.

In some cases it may not be convenient to have a sufficient number of tubs or other wooden vessels for holding the bones during the time they are being dissolved, and therefore the process may be carried on in another manner. Let a considerable heap of dry earth be made, according to the quantity of bones to be used, but say nine or ten feet wide across, and let the interior of this be hollowed out, and 18 or 20 bushels of bones thrown in. The bones are of course watered, and the sulphuric acid afterwards added, care being taken that the whole is frequently stirred, as in the former case. After the violent action which takes place has subsided, the whole mass is shovelled together, and allowed to remain for some days previous to being used.

Burnt bones may also be subjected to the same process; and as there are many places where plenty of bones can be procured, but no means of crushing them, this way of using may be very advantageously employed.

Six bushels of bones, dissolved in sulphuric acid, will be found a sufficient manure to raise a fair crop of turnips on an imperial acre, but we would prefer using from 3 to 4 bushels, with half the usual quantity of farm-yard dung. If used alone, then at least half of the turnips ought to be consumed by sheep penned on the ground.

The addition of certain saline substances to the dissolved bones increases their efficiency very considerably; and it is reasonable to suppose so, because turnips require something more than phosphate of lime, important though it be, to insure a full crop. We cannot find better evidence of the good effects derived from this admixture of other substances than is contained in Mr. Gardner's report of "Experiments with Special Manures," as detailed in the last number of the "Transactions of the

Highland and Agricultural Society." The mixture employed by him was made in the following manner:—"Take any quantity of animal charcoal or burned bones you may require, dissolved in a tub with half its weight of sulphuric or muriatic acid, adding to the charcoal, before putting in the acid, as much boiling water as will bring it to the consistency of thin gruel; let it stand and dissolve in the tub at least 24 hours, frequently stirring it up during that time. For every cwt. of animal charcoal or burnt bones so dissolved, take 56 lbs. of carbonate or sulphate of magnesia, 50 lbs. of muriate or sulphate of ammonia, 1 cwt. of common salt or carbonate of soda, and 56 lbs. of potash, mix them together, and pour them into the tub amongst the dissolved charcoal, stirring it all the time, and again let it stand for 10 or 12 hours. If this mixture is to be used by itself, add sawdust, dried peat, or any subsolvent to take up the moisture; put it through a half-inch sieve, which will divide it and make it sow better, or you may now add guano, which will absorb a portion of it, and fix the ammonia contained within itself." He further remarks, that "by dissolving the animal charcoal in these acids, and mixing the solution with different salts, we are thereby enabled to form new combinations with the phosphates, particularly with ammonia and magnesia, which combination exerts a powerful influence upon vegetation. From repeated trials, now four years, upon almost every description of plants in our farms and gardens, I am induced to place this mixture in the foremost rank of fertilizing substances, if not the very first I have ever tried. Combined with guano, with or without farm dung, it has grown very large crops of grass, grain, and green crops, leaving the land in first-rate condition. Indeed, I consider that guano ought never to be used without being combined with this mixture, either as a manure or a top dressing, and it possesses the property which many, if not all, of other artificial manures want, that of not being so easily dissolved and washed out of the soil by rain."

The quantities per acre, and cost of each of the substances composing this mixture, and applied as an auxiliary to 15 cwt. of farm-dung, was as follows:—

	per cwt.
Animal charcoal .. 2 cwt. per acre, at	4s 0d
Sulphuric acid .. 1 "	9s 4d
Carbonate of magnesia 1 "	5s 0d
Muriate of ammonia 1 "	16s 0d
Common salt 1 "	1s 0d
Potash (only 28 lbs. per acre applied)	28s 0d

From Bell's Weekly Messenger.

MR. HEWITT DAVIS'S SYSTEM OF FARMING.

"The farms I cultivate are naturally very poor; two are principally gravel, in parts very boggy and springy, very wet in winter and burnt up in summer, having been reclaimed from

heath only 40 years; the others are hill farms with but few inches of soil above the chalk or gravel. These farms have been greatly improved by the free use of trenching ploughs, but still are kept in profitable tillage only by the general economy in husbandry, and the large returns obtained on the system here laid down.

"The principles on which I endeavour to farm are as follows, viz.—

"1. To form and keep a pulverised seed bed of 15 inches, by trenching and occasionally turning the soil over to that depth.

"2. To bring the wet land dry by deep draining, considering no land effectually drained unless the drains be four feet in depth; that is to say, unless the water-level be kept so far below the surface: that the corn shall always have at least a foot of dry earth to root in, unaffected by capillary attractions of moisture from below, or the chill that water nearer to the surface causes; this can be secured only by having the drains 4 feet from the surface, and within 40 feet of each other.

"3. For sowing of spring corn, I consider the season commences with the new year, having no other fear than that of being too late. When the ground is dry enough, and fine enough, the sooner the seed is in the better; it will yield more, and the liability to blight, or to be beaten down, will be less.

"4. In sowing, I drill all, having the rows not higher than a foot between them, so as to admit of hoeing either by horse or hand, and hand-weeding at late periods.

"4. I hoe and hand-weed all corn, not allowing a weed in flower to be seen amongst it; ever recollecting that weeds occupy space and consume nutriment, displace corn, and rob the land.

"6. I never sow two crops of one genus in succession; legumes or pulses may follow cereal grain, and cereal grain may follow legumes or pulse; but never cereal after cereal, nor pulse after pulse. Rye grass is a cereal plant, and unsuits the land for white straw corn.

"7. In apportioning the rate of seed per acre, I do not lose sight of the bad consequences that must ensue if too much be sown. I bear in mind that if so much be sown as to produce more plants than the space will allow to attain maturity, the latter growth of the whole will be impeded, and a diseased stage will commence as soon as the plants cover the ground, and continue till harvest.

"8. I think manure should be applied only to green or cattle crops, and to corn; by giving it to the former, the earth derives the advantage of the extra dressing the extra growth returns; but when applied to corn, the earth is so much the more exhausted by the growth of straw, and frequently the grain is thereby positively injured, being made