

Super-Phosphate.

On an old field of gravelly loam, that has been under the plow most of the time for sixty years, I sowed wheat last spring. It had not borne a crop of wheat for a dozen years. Last year it gave a very good crop of corn. After the wheat was up, I sowed upon a strip of the field Canada phosphate, at the rate of four hundred pounds per acre. The result was quite striking in the thicker and stronger growth of grain. I judge that the crop was increased, where the phosphate was applied, some thirty per cent. Had I sowed phosphate over the whole field, I believe the increase of crop would have paid for the fertilizer, and left a handsome balance. There was a strong, manured soil unable to yield a full crop of wheat for lack of one element.

On a ridge of pasture land, of similar soil, I measured and staked off a certain plot and sowed the same phosphate, at the rate of five hundred pounds per acre. All summer long, though the cattle kept the grass grazed down close, the plot could be distinguished at a distance by its livelier green and closer turf; the phosphate must have doubled the pasturage.—*Vermont Farmer.*

Concentrated Fertilizers.

The "greater the truth the greater the libel," when enunciated by a newspaper without malice, and with no thought except the public good, receives a new illustration in the action of some New York newspapers recently, which published the reports of analysis of fertilizers sold by some of the leading firms in New York city. Some one went to the various guano and other manure houses and purchased in the regular way what was offered for sale, and only two were found to contain the real article they pretended to sell. The others sold articles made up of various trash from nearly half brick-dust in some cases, to inferior guano worth less by seven or eight dollars per ton, to the best article, for the best Peruvian guano. Besides the frauds in quality there was the imposition in price, in some instances some charging ten dollars per ton more for the identical article, supplied by a near neighbor. This truth is surely great enough to warrant the law regarding it as a tremendous libel on the character of these truly innocent men. That any one should dare to tell another that he paid for guano and received brick-dust, is a terrible slander; and when to this it can be proved that the man had no malice in reporting the facts as he found them, that indeed he was taking on himself rather an unpleasant duty in behalf of the public, one imposed on him by the New York Agricultural Society, we do not know whether anything short of capital punishment on the gallows, can fully expiate the enormity of the offence! It is said by a cotemporary that the gentlemen who served on the committee, Hon. J. Staunton Gould, Isaac H. Hicks, and W. H. Habershaw, are already threatened with prosecution.—*Germantown Telegraph.*

Wood Ashes.

Hard-wood ashes is one of the most valuable fertilizers that a farmer can use. It is almost an impossibility for him to be at fault in the manner of using. If sown broadcast the effects may not be seen so pointedly in the immediate crop, but they will be permanent, and a crop of grass or broadcast grain several years afterward will feel the influence of the ashes. For wheat it has been recommended to use ashes mixed with plaster, and if the wheat is sown in drills, this mixture should also be thus sown. For grass, ashes may be used as a top-dressing. It is stated that as much as 200 bushels per acre have been thus used in Connecticut. We think half that amount fully enough for one dressing. For potatoes and corn, the ashes should be put in the hills; but we look upon composting as the best mode of using ashes. They may be mixed with manure, barn-yard manure, or both those substances, and also phosphate of lime, with great benefit. There is hardly a plant which does not contain one or the other of the elements which hard-wood ashes add to the soil. There is a great difference in ashes, depending on the wood from which grown and the soil from which the tree grew. Beech is probably the richest in potash, though elm is very near the same, or greater. If trees are grown on a soil rich in potash, that element will be in greater proportion, while if grown near the sea-shore where soda is in the soil, that alkali takes the place of the potash to some extent. A valuable substitute for ashes may be made from the kairit, or

German potash salt, by mixing that material with common rich earth woods mold. One hundred pounds of kairit mixed with twenty-five pounds fresh burned lime and 400 pounds of weak earth, would make full as valuable a dressing as the average hard wood ashes.—*N. Y. Times.*

Facts About Manure.

The author of "Ogden Papers" for the *American Agriculturist*, has paid a visit to Dr. Voelcker. In his account of it he says:

We had been taught that from the time when the manure was first voided by the animal it was subject to constant loss from the evaporation of ammonia, its most valuable ingredient, and that consequently it was the only safe plan to compost it with muck or some other absorbent material. Dr. Voelcker proved, by a series of analyses of manure at different stages of decomposition, and after various sorts of treatment, that there is no formation of volatile ammonia except when the mass is sufficiently large for the accumulation of enough heat to favor an active decomposition, and that even then there is no evaporation of ammonia, for the reason that the organic acids which are simultaneously formed are always sufficient to take it up and form non-volatile compounds. At the same time, although these compounds are not subject to evaporation, they are highly soluble, and the juices flowing from the dung-heap, and the rain water passing through it remove it most easily. Consequently, it is of the greatest importance that manure should be kept under cover, if it is kept in store at all. The most important deduction from these investigations is, that the much-reiterated recommendation of agricultural writers that on no account should manure be taken to the field (unless to be composted) until it could be almost immediately ploughed under the soil, was not well founded. The best practice of all, is one which many of the most successful farmers have always followed, and against which the agricultural press has levelled its "biggest guns," the practice, namely, of hauling manure afield as soon as a few loads have accumulated, spreading it at once over the ground, and ploughing it under early or late or not at all, according to circumstances; the best effects following its application to the surface of grass-land, or its harrowing into the very top-most film of ploughed land. In neither of these cases can ammonia escape, because no volatile ammonia is formed, while the soluble parts, and all become soluble in time, are distributed through the soil by the water of rains the more evenly, the nearer to the surface they lie. When they are once absorbed by the soil they are held in an available form until required by the roots of plants.

LIME IN CROPS.—There is said to be carried off from the soil nine pounds in twenty-five bushels of oats, and fifteen pounds in thirty-eight bushels of barley. There are thirty-five pounds of lime in two tons of rye-grass; one hundred and twenty-six pounds in two tons of clover; and one hundred and forty pounds in twenty-five tons of turnips, and two hundred and seventy pounds in nine tons of potatoes. Some soils contain abundance of lime for a thousand years, while others require an occasional application of lime as a fertilizer.—*Et.*

The best time to apply manure as a top-dressing for grass is probably early in the spring. But I have been astonished to find how rapidly the manure works down among the grass (or how soon the grass works up into the manure) and disappears, no matter when applied. Some farmers hesitate to top-dress their grass land for fear it may give the grass a rank taste. If the manure is evenly spread and thoroughly harrowed there is no difficulty of this kind. Sheep and cows will eat the top-dressed grass in preference to that in the same field where no manure has been applied.—*Joseph Harris.*

REFUSE OF TANNERIES.—A correspondent in Monroe county, Pa., writes to the *Country Gentleman*, as follows:—We use much of it here, and consider it a valuable fertilizer. We pay \$1 to \$1.25 per ton for it, and haul sometimes two or three miles. Our land is what is called heavy soil, although I have seen it used with good results on the "sandy flats" along the streams. We haul and spread from the wagon, four or five tons to the acre. It is generally applied on the ploughed ground, and worked in by cross-ploughing and harrowing. It does best on new land, when sown to clover, yielding heavy crops, and the opinion here is that lands treated with this manure keep in grass longer than with any other manure which can be applied.

Agricultural Implements.

SEED DRILLS—Continued.

The best drill at present in the market, and one which will be found a boon to any farmer, is constructed on the principle of the celebrated "Brickford and Huffman" drill, and known under different names as the "Farmer's Friend," "Farmer's Favorite," "Combination Drill," &c., &c.

The distinguishing features of this machine are a double force feed or distributor, a sliding grain bottom, rubber leather funnels with metal hangings, jointed ground tube, double reversible chamfered steel tube points, automatic gear shifter, and a tube shifter.

The double distributors are constructed with two separate feeds, one upon either face of the distributing wheel, and one of much greater capacity than the other.

The smallest of feeds will sow wheat, rye, buckwheat or flax in the very best manner;—the discharge being constantly within full view of the operator, and subject to any adjustment without injury to the seed, or a possibility of bunching or "stooling" the grain.

The larger feed sows oats, corn, peas, barley and all coarse grains just as perfectly as the other set sows the finer ones. This double feed adds nothing to the weight of the implement, nor does it increase its mechanism, whilst it doubles its usefulness, by adapting it to the seeding of spring grain,—a work heretofore a comparative failure when attempted with most or all of the earlier kinds of drills.

The sliding grain bottom is a series of inclined planes or bevels, so connected at the sides as to form perfect funnels over each feed or run, affording no place of rest or shelter for the grain and making certain that with grain in the box of the drill, the distribu-

tors are fed; and dispensing wholly with the uncertain and unreliable "stir-rod," which used to be employed for the purpose of stirring up the grain at the point where it entered the distributor.

In some cases "rubber leather" funnels are used, which conduct the seed from the distributors to the earth, combine the good qualities of both the rubber conductors and the metal funnels, and avoid the faults of either style. The tops are metal, with strong cars for carrying them, and the rubber leather is much stronger than the common gum fabric.

The manner of attaching them permits their lateral movement to accommodate the position of the tubes without bending, braising or chafing, and thus saves the breakage of funnels.

The ground tubes are also sometimes jointed; the top remaining always in the same relative position to the drag-bar and conductor.

The joint also permits the tube to turn nearly at right angles with the top—to skip over an obstacle. Each tube has a reversible steel point, which by means of a rivet, may be reversed when one side is worn. The tubes are likewise attached to the drill in front by wrought iron leaders or drag-bars, to which they fasten with a brace and wooden pin, amply strong to sustain the draught of the tube, but yet weak enough to give way before the tube or leader is broken by catching against a root.

A spring tube may also be had, which is in every respect the same as the other, except that a spring operates to return and fix the tube in place, after

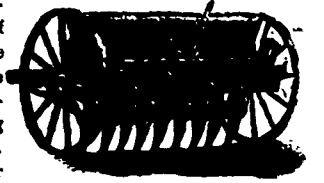


FIGURE 2.