

decay of grass roots. On mowings, it should be supplied to top-dressings; and on ploughed lands, by harrowing in manure. It would be as unreasonable to complain of plaster because it will not act well always without other manure, as to find fault with roast-beef because it does not afford a suitable diet without other food. The same might be said of ashes. Land dressed with ashes alone, will soon be found in a sad condition; and yet the potash, soda, and lime they contain, are worth far more for agricultural purposes than the price generally allowed by soap-boilers. Their alkaline salts act favorably upon the silicates in the soil; they render insoluble silica *soluble*, and are therefore valuable on uplands; while on peaty lands, if well drained, and on any lands which abound in inert vegetable matter, their value is very great.

CONSTRUCTION OF CISTERNS.

In consequence of the repeated inquiries we receive for information relative to the best construction of rain-water cisterns, we are induced to furnish some brief practical hints on the subject. The great value of an abundant supply of water to houses and barns, and which may be easily had by providing capacious cisterns, renders it important that the cheapest, best, and most convenient mode of construction should be adopted.

The two all-essential requisites for underground cisterns, are good hydraulic lime, and a supply of clear pure sand. These must be selected from experience or trial, or by choosing such as have already proved efficient for this purpose. Good hydraulic cement will in the course of a few months become about as hard as sandstone. When this hardening process does not take place, it must be attributed to bad materials, or to intermixing in wrong proportions. On the latter point, some are misled by adopting the practice employed in mixing common lime mortar, the hardest material resulting in this case where the sand constitutes about five-sixths of the whole. But the hardest water-lime mortar cannot be made if the sand forms much more than two-thirds of the whole.

A very common and a cheap form for the cistern is to dig a round hole into the ground with sloping sides, somewhat in the form of a narrow-bottomed tub, and then to plaster immediately upon the earth. Unless a slope is given to the sides, the mortar cannot be made to keep its place while soft, as it is nearly impossible to find a soil dry and hard enough to retain the plastering by simple adhesion. The top of this kind of cistern must therefore be wide, and consequently difficult to cover very large ones effectually and substantially. The covering is usually made by stiff and durable plank, supported if necessary by strong scantling, and over this is placed about one foot of earth to exclude completely the frost. A hole with a curb, about eighteen inches by two feet, must be left in this covering, for the admission of the water pipe or pump, and to allow a man to enter for cleaning out the cistern when

necessary. In cold or freezing weather, it is indispensably requisite to have this hole well stopped to exclude frost, which would otherwise enter the wet cement or walls, and produce cracking and leakage—a frequent cause of the failure of water-lime cisterns.

This is the cheapest form of such reservoirs, but a better, more capacious, and more durable mode is to dig the hole with perpendicular sides in the form of a barrel, and build the walls with stone or hard brick, to receive the plastering. In consequence of its circular form, operating like an arch, these walls will not be in danger of falling if not more than half the ordinary thickness of similar walls. For large cisterns they should be thicker than for small ones. The walls should be built perpendicular until about half way up, when each successive layer should be contracted, so as to bring them nearer together, in the form of an arch, reducing the size of the opening at the top, and rendering a smaller covering necessary. If the subsoil is always dry, or never soaked or flooded with water, the walls may be laid in common lime mortar, and afterwards plastered on the inner surface with the cement. But in wet subsoils, the whole wall should be laid in water lime. If the bottom is hard earth or compact gravel, a coating of an inch or two may be spread immediately upon upon the earth bottom; but in other instances the bottom should be first laid with flat stone, or paved with round ones, the cement spread upon these.

The plastering upon the sloping earth walls as first described, should never be less than an inch thick, and if the earth is soft, it should be more. On the stone or hard brick walls, half an inch will be thick enough.—Cisterns can rarely if ever be made free from danger of breaking, without giving them at least two successive coats, and three will be safer—the previous coat in each instance being allowed to become dry and hard.

As the best mortar begins to harden in a very short time after mixing, it is best to mix the lime and sand *dry*, and to apply water to small successive portions as wanted.—*Country Gentleman.*

ITEMS ON POULTRY.

THE POULTRY HOUSE.—As every thing connected with poultry now-a-days has a peculiar interest, we give the following sensible remarks from an English paper. First of the roost and nest house. The floor should be sprinkled with ashes, or loam, or pulverized peat, or fine charcoal, and the floor should be cleaned off every week:—

“The yard should contain a grass plat, some fine gravel, slaked lime, dry ashes, and pure water. The nests should be lined with moss heath or straw. Evidently the Dorkings are the best breed; they will lay an average of 185 eggs each per annum. Fowls with black legs are best for roasting, while those with white legs are best