

with stable and barn yard manure. This cannot be too strongly reprobated. If those who use it in this way were to try to injure their manure as much as possible, they could not adopt a better plan. Ammonia, one of the most valuable constituents of stable and barn yard manure, is expelled from the heap by caustic lime, and escapes into the air.

This plan should therefore *never* be followed. It is no proof in its favor, that the manure, after being treated in this manner, still does good, a part of its valuable constituents, fire will not destroy; but one of the things which give it its peculiar distinctive value, is entirely dissipated when mixed with either caustic lime, (oxide of calcium,) or water slaked-lime, (hydrate of lime.) It is indeed one of the means by which chemists determine the quantity of ammonia in a compound, so thoroughly and entirely does it drive it all away.

Upon grass lands, when they fail to produce well, and that failure is owing to deficiency of lime in them, it may with great advantage be spread on the surface, and have a light harrow run over it.

This will not only insure to the crop the full benefit of the lime, but will materially improve the texture of the soil by loosening the surface, which from the long absence of cultivation becomes *bound*, and frequently covered with moss, and unfitted to produce a good crop of hay. The full benefit of the lime can be obtained without the trouble and expense of breaking the land from its "setting" in grass, and no intermission need be had in the crop. When it is intended to supply the deficiency of lime in a soil by the medium of marl, it should always be applied *as long a time as possible* before the culture of the soil. Atmospheric influences, the alternation of heat and cold, and of dryness and moisture, are all powerful agents to disintegrate the marl, reduce the shells to powder, and bring them into a condition most favorable to the crop whose production it is intended to assist. Situated as the great mass of our farmers are, precise and exact rules cannot be followed. Many are obliged to yield to circumstances, but they should keep the above principles steadily in view, and conform to them as nearly as possible.

They are the result of much and careful observation; are substantiated by the highest authorities; and are derived from a knowledge of the qualities of the cause, by whose application the desired effect is sought to be produced; in other words, from a knowledge of the action of the agent, and the object upon which it acts.

From a knowledge of the properties of lime as carbonate, and of those agents to which it is subject, the reasons for the above rules will appear manifest. I need not here repeat what was said in relation to the *different* modes of applying lime, except in relation to its use as a top dressing for grass. Keeping in view