plosions of kerosene lamps occur by the fracture of the glass lamp containing the oil. An eminent chemist tells us that a few days ago a glass bottle which he had used for years, and which contained collodion, suddenly shivered into fragments while standing on a table where it had remained untouched for weeks, and a flask he had used for distilling benzine broke in a similar manner after it was laid aside.

The practice of blowing out the light when the flame is full, by throwing the breath down the chimney is pernicious. If the wick is loose in the tube the flame may be forced into the lamp and instantly ignite the surface gas or the oil itself. A better practice is to turn the flame down to a flicker and then blow it out. Lamps of metal would seem to be preferable to those made of so treacherous a material as glass, although they are not so elegant.

It is hardly credible that manufacturers or venders of kerosene would willingly deal in a dangerous article containing explosive elements, as their reputation and consequent profits depend upon the quality of the fluid, but the presence of naphtha and benzine in much of it now sold is susceptible of proof. Legislative interference, aided by science, appears to be demanded as a protection to consumers; for it cannot be expected that the people at large are to become analytical chemists in order to judge of the quality of the oil they use. Either this, or we must go back to the use of the old fashioned lamp, the breaking of which is attended with no more serious consequences than the formation of a grease spot.

## WASTE SUBSTANCES USEFUL AS MANURES.

BY DR. J. S. HOUGHTON, PHIL.

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The subject of Manures, though it commends itself but little to the general attention of mankind, is one of commanding interest to the cultivators of the soil. We *must* give it attention, whether we like it or not. In our relation to this matter, we are like the hero in the old Fairy tale, who, in his search for the Garden of Eternal Delights, was compelled to eat his way through an immense mountain of unpalatable rice before he could enter the land of perennial flowers, where the gorgeous plums and golden apples blossomed.

In all large towns and cities a great variety of substances may be obtained, of a waste or refuse character, which possess no small value as fertilizing agents, when applied to the soil of the garden or farm. The art of increasing the fertility of the soil by the application of manures of this kind, though much studied by scientific and practical men, is still involved in some degree of mystery and uncertainty. The product of the stable and barnyard is admitted by nearly all our most distinguished farmers and horticulturists to be the most perfect fertilizing agent, take it all in all, that can be found. The chief difficulty about stable manure is, that it requires a vast amount of it to elevate the productive power of the soil to the highest point of fertility, and hence the expense renders it too costly for even market gardeners.

It may be a question also, whether this much-lauded product of the stable would alone be capable (if employed in even an unlimited quantity) of maintaining a market garden at the common point of productiveness for a long series of years.—Whether this question has been settled by actual experience, I am not aware.

Next to stable manure, the product of the cesspools of large cities has been supposed to possess a higher value as a fertilizing agent than any other material; and indeed, in an economical point of view, it is preferred by market gardeners to the first-named substance. I was surprised to learn, from a recent work by Peter Henderson, a distinguished market-gardener of New York, that the richest product of the cess-pools, when applied as a manure upon market gardens, fails to maintain them, for any long period, at a profitable point of fertility; in other words, that market gardens, manured with even extravagant quantities of such material, decline in productive capacity to such a degree, that the gardeners are compelled every few years to change the character of the manures employed.

This is a most instructive fact. My own observation of market gardens had impressed me with the idea that manures were applied, on nearly all of them, in a most wasteful and unscientific manner, and that, as a result, the lands were in what might be called a *diseased* condition. Still, I supposed that they might be denominated rich, and would, by rotation and good culture, produce, maximum crops, even under a continuance of the same system of manuring. A scientific man would of course have resort to lime, soda, potash and bone-dust, as a corrective of this *diseased* condition, so to speak; but I would not readily doubt the intrinsic value of the manures employed.

The statement made by Mr. Henderson is so new and so striking, that I quote the language:

"In applying manure to the soil," he says, "we have long ago discovered the great importance of an alternation of different kinds. When I first began business as a market-gardener, I had opportunities of getting large quantities of rich material from the scavengers of Jersey city: this was mixed with stable manure, charcoal, sawdust, or any other absorbent most convenient, and applied, so mixed, at the rate of about thirty tons per acre. The crops raised with this manure were enormous for two or three years, but it gradually began to lose its effect; and, in *five years* from the time we began to use it, it required nearly double the weight of this compost to produce even an average crop."

Mr. Henderson adds that, with the soil abundantly supplied with rich composts, he has found the use of guano, at the rate of 1,200 lbs. per acre, and bone-dust at the rate of 2000 per acre, highly useful in alternation, or in combination with even stable manure.

I have made these preliminary remarks for the purpose of showing that even the best (or richest) manures, when employed in an unskilful manner, are not sure to produce the desired result, in high farming or gardening; and I hope also to show that some waste substances, little esteemed by many persons, possess a high value as manure, at least when used in combination with the usual