

make every addition to them that nature of local circumstances have placed within his reach,

These very desirable purposes he will be better able to carry into effect when he fully understands the nature of the manure he has under his management, and by that means he can exercise a sound discretion in adding to its quantity and effect.

Let it not be alleged against any inquiry by the farmer into the constituent nature and chemical properties of his manure, that he has no ideas attached to the several terms used to designate the substances of which it is said to consist. He is obliged to learn the names and uses of the several implements he employs in the cultivation; and upon what principle, we may ask him, should he refuse to make himself acquainted with the names and general properties of the produce he raises? But little effort is required to obtain a precise knowledge of the several elements or substances, at least by the employment of which, he is enabled to raise and increase his crops, and is it not pleasant to learn, as well as most useful to understand, the reason of their value to him? Nor is this limited degree of chemical knowledge of difficult attainment. Every farmer has seen wood ashes, and also seen water poured upon them, for the purpose of extracting a something; that substance is chiefly potash which may be seen by evaporating the clean water, which leaves the alkali behind, and the dregs which remain behind consist, for the most part, of earthy phosphates—a similar substance to the earth of bones. Soda is now so commonly used as to be known at sight to most persons; lime and magnesia are still more familiar; ammonia is the common pungent salt of smelling-bottles; sulphuric, muriatic and nitric acids are extensive articles of commerce, and, with phosphoric acid, may be found at any chemist's shop, and these acids as well as their bases—potash, soda, lime and magnesia—may be had for a trifle, either separately, or combined as salts.—When, therefore, the appearance, or more obvious qualities of these several substances have become familiar, their efficacy as manure may be proved by mixing them thoroughly with two or three hundred times their weight of mould, and applying the compost to garden plants. The farmer might in this way soon become acquainted with the name character and properties of the invaluable substances contained invisibly in the muck of his yards; and would be the better able, and more desirous, to prevent their stealing away from him.

THE ORIGIN OF WHEAT.

The origin of the wheat which we now cultivate is involved in considerable obscurity. Nowhere is it found to exist native. In a paper in the *Edinburgh Review*, the author of it takes the ground that all our common cereals have been developed by cultivation, from grains having, in their natural state, scarcely any resemblance to those now cultivated, and he asserts that the particular plant from which wheat has originated, is a grass growing wild on the shores of the Mediterranean, and known to botanists by the name of *ægilops*. If this is true, it will afford some clue to solve the question, "does wheat ever become cheat."

PHOSPHORESCENCE OF INSECTS.

The English chemist, Thornton T. Herepath, has been taking advantage of a recent trip to South America to collect and examine fireflies, in order to get at the secret of their luminosity. The commonly received opinion in regard to the source of the light emitted by insects, is that it is due to the slow combustion of phosphorus, resembling that produced by gently rubbing a moth with the fingers. Mr. Herepath denies this however, as he was unable, on the application of the most delicate tests, to detect the smallest trace of phosphorus in the bodies of these curious little creatures. His opinion is that the light is caused by the burning of a peculiar compound of carbon and hydrogen, formed in a special gland.

ARTIFICIAL MILK.

The Paris correspondent, J. Nickles, of Sillimen's Journal, describes as follows a new liquid under the above name, which has lately been introduced in Paris.

For some time a liquid has been prepared which is said to have so far the qualities of milk that it is called artificial milk or "laitviande." It is prepared as follows. Into a Papin's digester three killograms of fresh pounded bones are put and one killogram of meat with five or six times as much of water. The top is hermetically closed: double sides surround it, and in the cavity between, a current of steam circulates which raises the temperature of the digester up to 140° F. At the end of forty minutes after reaching this temperature a stop-cock with a small orifice is opened which lets out a vapor having the odor of broth; but some seconds after, there issues a white liquid which is nothing but the artificial milk. After this milk has passed out, the digester contains only the meat, the boiled bones, and a soup of inferior quality.—