

rock, &c., much more effectual and economical than the present plan. It is by forming a chamber for the powder with hydrochloric acid and water.

Mr. Thomas Bowles, aged 83, one of the persons who was on board the Royal George at the time she sank, and escaped, was on the Yarmouth suspension-bridge when it broke, and fell into the water, and was again providentially rescued.

Time is like a creditor who allows an ample space to make up accounts, but is inexorable at the last.

REAPING WHEAT.—IMPORTANT TO FARMERS.—It is asserted by Mr. Hannam, a clever and experienced farmer, of North Deighton, near Wetherby, Yorkshire, that a considerable loss arises from the mistaken practice of reaping wheat when dead ripe; and this assertion he proves by the following experiments. In 1840 he reaped three large sample parcels of wheat as follows:—No. 1. Green-cut, August 4th; No. 2. Raw-cut, August 18th; No. 3. Ripe-cut, September 1st. When thrashed and carried to market, they commanded the following prices: No. 1. 61s. per qr.; No. 2. 64s. per qr.; No. 3. 52s. per qr. In 1841 he cut five half-roads of wheat, as follows:—No. 1. Very green, August 12th; No. 2. Green-cut, August 19th; No. 3. Raw, August 26th; No. 4. Raw, August 30th; No. 5. Ripe, September 9th. These samples were first shown at the Wetherby Agricultural Society's Show on September 22d, 1841, when an extra premium was awarded to No. 3. The wheat from which the last three samples were taken, was then ground and dressed by Mr. John Harcastle, miller, of Wetherby, when the following results, omitting fractions, came out:

No.	Grain.		Pollard.		Bran.		Cut.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	
3	100	80	5	13	Raw, -	August 26	
4	100	77	7	14	Do. - -	Do. 30	
5	100	72	11	15	Ripe, -	Sept. 9	

IMPROVEMENTS IN AGRICULTURE.

"The great truth that animal manures are nothing else than the ashes of the food produced from our fields, consumed or burned in the bodies of men and animals, has given the chief direction to all modern improvements in agriculture."—*Liebig.*

The above remark deserves the profound consideration of every practical farmer. After an animal has attained his maturity, and adds nothing to his weight in the course of a year, it is obvious that the matter which escapes from the body must be the same in quantity as that which enters it. A very notable portion of the food of all warm-blooded animals passes out of the lungs in the form of air and vapor, during their ceaseless respiration night and day, just as wood passes out of a chimney when burnt in a fire-place. The combustion of grass, hay, and grain, in the system of the cow, horse, or sheep, is not so complete as that of fire applied to the same substances in the open air. In the latter case, nearly all the combustible ingredients—carbon and hydrogen united with oxygen and nitrogen—are expelled into the atmosphere. In animal combustion, a larger portion of carbon, hydrogen, oxygen, and nitrogen remain with the ashes contained in the food taken into the stomach, and voided with the solid and liquid excretions.

That portion of cultivated plants which escapes into the air through the lungs of man and his domestic animals, growing plants can regain by their roots and leaves, and thus reorganize into animal food. But the case is different with the ashes or earthy portion of all plants. If these minerals are taken from the soil in crops, and not faithfully restored, by replacing on our cultivated fields all the salts contained in the excretions of the human family and of domestic animals, the injury will be great.

Nearly one-third of all the wheat grown on the globe is raised by the Chinese. For thousands of years this wonderful people have cultivated most successfully this bread-forming plant. For a long period their wheat-fields

have been fertilized almost exclusively with the ingredients of wheat, derived from its combustion in the human system. In other words, they manure their fields with *night-soil alone.*

The manufacture of corn, wheat, barley, oats, hay, potatoes, pork, beef, butter, cheese, wool, can be reduced to an exact science. The laws of chemical affinity, of vegetable and animal vitality, are uniform and easy to be understood, so far as successful agriculture is concerned. One of these laws is, that no man nor vegetable can possibly make anything out of nothing. Another is, that one simple substance, like carbon, cannot be transformed into another simple element, like nitrogen. Clay cannot supply the place of sand, nor sand of clay.

Suppose you have the materials to produce fifty good crops in your now fertile soil: when those materials are worked up and sent to distant parts, where will the largely increased population of the State go for food and clothing? Do you say, to the West? But what right has the present generation to consume and destroy the natural fertility of God's bountiful earth, to the serious injury of those who are to succeed them?

By every principle of common justice and philanthropy, we should augment the natural productiveness of the soil at least 4 per cent. per annum, or double its fruit in 25 years.—*Dr. Lee, in Genesee Farmer.*

TO IMPROVE THE SOIL.

To improve a soil, is as much as to say that we seek to modify its constitution, its physical properties, in order to bring them into harmony with the climate and the nature of the crops that are grown. In a district where the soil is too clayey, our endeavour ought to be, to make it acquire, to a certain extent, the qualities of light soils. Theory indicates the means to be followed to effect such a change: it suffices to introduce sand into soils that are too stiff, and to mix clay with those that are too sandy. But these recommendations of science, which, indeed, the common sense of mankind had already pointed out, are seldom realized in practice, and only appear feasible to those who are entirely unacquainted with rural economy. The digging up and transport of the various kinds of soil, according to the necessities of the case, are very costly operations, and I can quote a particular instance in illustration of the fact. My land at Bechelbronn is generally strong, (clay). Experiments on a small scale showed that an addition of sand improved it considerably. In the middle of the farm there is a manufactory which accumulates such a quantity of sand that it becomes troublesome. Nevertheless, I am satisfied that the improvement by means of sand would be too costly. A piece of sandy soil, purchased at a very low price, after having been suitably improved by means of clay, cost its proprietor much more than the price of the best land in the country. Great caution is necessary in undertaking any improvement of the soil in changing suddenly its nature. Improvement ought to take place gradually and by a course of husbandry the necessary tendency of which is to improve the soil. Upon stiff clayey land we put dressings and manures which tend to divide it; to lessen its cohesion, such as ashes, turf, long manure, &c. But the husbandman has not always suitable materials at his command, and in this case, which is perhaps the usual one, he must endeavour to select such crops as are best suited to his soil. Autumn plowing of clayey lands is highly advantageous to them, by reason of the disintegrating effects of the unsung winter frosts.—*Boussingault.*

☞ Boussingault is both a distinguished chemist and a practical farmer; yet no farmer, we are assured, who has a clayey or a sandy soil, will be deterred, by the above remarks, from attempting to improve his sandy soil by the admixture of clay, if it be at hand, nor from improving his clayey soil by the admixture of sand, if it can be easily procured. In either case, we do not believe the operation would be too costly, as Boussingault asserts—and much experience in this country could be adduced in disproof of the assertion.—*N. E. Fur.*