

and subservient to the amendment of the soil, is the deepening of the upper stratum.

The subsoil, it has been seen, is distinguished from the soil properly so called, by the former containing less vegetable and animal matter, and so being less suited to the nourishment of plants; and in certain cases it is even found to be injurious to vegetation. It is generally important, however, that there be a good depth of soil; and thus it is often expedient for the effecting of a permanent improvement of the surface, to plough up and mix with it a portion of the subsoil, even though that subsoil should be in itself infertile.

These, then, are the principal mechanical means by which we can improve the soil, and they will be considered in detail under the various heads which relate to the operations of tillage.

Another mean, indeed, of changing the composition of soils, is incineration, commonly called *paring and burning*. This process will be described as connected with the operations of tillage, and may be considered as one of the means possessed by us of adding to the productiveness of soils.

The *third* mode referred to of increasing the productive powers of soils, is changing their relation with respect to moisture.

In warmer countries the soil is comparatively little injured by an excess of water, and more frequently suffers from the insufficiency of it. In climates like that of Britain, however, the operation of conveying away the water which is in excess is an essential one, and, if neglected, the best-devised scheme of improvement may fail. The superfluous water is either stagnant upon the surface, or percolates below it. The freeing of cultivated land from water upon the surface gives rise to the formation of land into ridges, by which the water escapes without stagnating upon the ground or sinking into the subsoil below. This is an object necessarily connected with tillage, and will be described when the manner of cultivating land is treated of.

The freeing of the soil again from that superfluous water which is contained below the surface, forms a peculiar branch of agricultural improvement, and will be described under the head *Draining*.

As draining is more required in the colder countries, so irrigation, or the watering of land, is less required there than in those countries where the heat and evaporation are greater. Irrigation, however, is a curious and interesting branch of rural economy, derived by us from very ancient times. In this country it is chiefly employed in the watering of lands in grass during the months of winter and spring, and will be described when treating of the Management of Grass-land.

The *last* of the means referred to of increasing the productive powers of soils, is by changing the relation with respect to temperature.

This mode of adding to the productive powers of soils, is less within our control than any of the others. It is only by slow degrees that we can improve the climate of a country. It is chiefly by draining, and by the rearing of hedges and wood; all of these, accordingly, form important objects of rural economy, and will be partially treated of in this work.—*Low's Agriculture*.

THE GARDEN OF PLANTS.

A LEAF FROM A JOURNAL

I did not quit Paris without visiting the "Garden of Plants." It is the richest collection in the world of natural curiosities, and besides its admirable clas-

sification, it is arranged for the most imposing effect. The mountain and the morass, prairie and jungle, ocean and the river, the mines and the atmosphere, have been ransacked to furnish whatever was rich and rare, types of each class of beings, Nature's "proof impressions," to render account of her three kingdoms to the keen insatiable eye of French science. In spacious grounds, skillfully laid out and shaded with fine groves and shrubberies, you walk among the animals of every country, each in his own paddock, with his mate and young, supplied with his appropriate food, and his habits consulted in his accommodation. The tall camelopard's promenade and breakfast daily draw as much attention as the king's. He browses on the boughs of trees above him, nearly twenty feet from the ground. When this stately creature came to Paris, a caricature appeared in the print shops, in which Giraffe is exclaiming to the citizens, "*Eh bien; Messieurs, il n'y a qu'une bête de plus.*" Lions from Algiers and Asia; elephants from Siam, whose dignified bath is attended with loud applause by the boys; our compatriots, the buffalo and the bear, from New Hampshire and Labrador; all sizes and all stripes of tigers, hyenas, and jackals; a herd of monkeys; and indefinite numbers and species of sheep, goats, llamas, and zebras, sleep, browse, or ruminant in their several country fashions, each as much at ease as in his own wilds, for the amusement of the whole world, in the heart of the capital of France. Through this lively park, and its congress of beasts, you arrive at the Botanical Cabinet, an inclosed garden-plot, where grows a grammar of botany; where the plant rises each in its class, order, and genus (as nearly as their habits, in reference to soils, will permit), arranged by the hand of Jussieu himself. If you have read De Cardolle, with engravings, or with a *hortus siccus*, you will conceive how much more exciting and intelligible is this natural alphabet, this green, yellow, and crimson dictionary on which the sun shines, and rains and dews fall. Passing the Aviary, which is full of song and animation, you come to a large stone edifice in the centre of the grounds, which is called the Cabinet of Natural History. Here there is no life, but here is abundant food for pleasure and wonder. It is a prodigality to visit in one morning's walk all the chambers in this great repository. The ornithological rooms deserve a separate day, for who would mix and confound so fine and delicate sensations and presentiments as these objects awaken? This silent aviary is a finer picture-gallery than the Louvre. The whole air is flushed with the rich plumage and airy forms of the birds. The fancy-coloured vests of those elegant animals make me as pensive as the hues and forms of shells have long since done, whether in the cabinet of a collector, or lining like sea-flowers the Anastasia beach near St. Augustine. The fancy is stimulated, and the mind is filled with calm and genial thought. Many of the birds have a fabulous beauty, more appropriate to some Sultan's garden in Scheherzade's story, than to a scientific cabinet. Here are the favourites of nature, creatures in whose form and coat appears a transcendent finish. * * The cabinet of birds was a single and even small part of that magazine of natural wonders. Not less complete, if somewhat less attractive, is the collection of stuffed beasts, prepared with great skill, to represent the forms and native attitudes of the quadrupeds. Then follow insects, reptiles, fishes, and, last of all, minerals. In adjoining apartments is the collection of comparative anatomy, a perfect series, from the fossil trilobite, the great-grandfather of us all, up through the skeleton of the balæna, which reminds one of the frame of a schooner, to the upright form and proud skull of the Caucasian man,