

ples, and in the best manner, within the reach of every parish in England.—The improvement is as great as the change from the old musket to the Minie rifle. Skilful manufacturers, each eager to command the market, study, with all the aids of a mechanical knowledge and a wide experience, to secure excellence of design, durability of make, and economy of price, while the farmer in his turn has learnt that science is a better constructor than ignorance, and no longer prefers the chimney efforts of a village artisan. The marvel is in the rapidity with which these changes have been effected, as if some magician of agriculture had waved his hand over our favored island.

To be Continued.

MISCELLANEOUS.

USE OF LIME IN AGRICULTURE.—The action of lime is two-fold; first, physical, and second, chemical. As a mechanical agent it opens stiff clays, rendering them friable, mellow, and more easily worked; chemically, it acts upon the vegetable matter of the soil, and sets free those stores of valuable substances which, without the action of this agent, must have remained inert and useless. It also enters directly into the composition of plants, and in many varieties forms a large proportion of the weight of their inorganic constituents. It neutralizes certain acids which are often present in soils, rendering them useful to vegetation, instead of being positively injurious, which they are in their original state. The existence of water in the soil, however, affects the action of lime very considerably. If the land is wet and undrained, lime will not exert the same influence which it would do in the case of thorough drained land. A greater quantity of lime is necessary to produce a given effect, and thus the neglect of thorough drainage entails a considerable greater expenditure in liming than would have been necessary, if the land was either naturally or artificially dry.—*Cameron's Chemistry of Agriculture.*

CHANGES IN THE ATMOSPHERE.—Dr. Lindley Kemp, in his "Natural History of Creation," makes the following remarks on this subject:—"At a very early period the atmosphere was charged with carbonic acid, the carbon of which now forms parts of animal and vegetable substances. At first it contained no ammonia, but since vegetation and decomposition began, the nitrogen that existed in the nitrates of the earth, and some of the nitrogen of the atmosphere have been gradually entering into new combinations, and forming ammonia, a substance at first non-existent, but gradually increasing, and, as it is volatile, the atmosphere *now always contains some of it*. The quantity has lately become so great that it can always be detected by chemical analysis, and there is an evident tendency to increase in the atmosphere. Now suppose it to go on increasing to a certain point; it forms with air, a mixture which is violently explosive; an atmosphere charged with ammonia, is liable to explode whenever a flash of lightning passes through it, and such an explosion would doubtless destroy, perhaps without leaving traces of, the present order of things."

WONDERFUL MECHANISM IN THE EYES OF BIRDS.—A singular provision is made for keeping the surface of the bird's eye clean—for wiping the glass of the instrument as it were, and also for protecting it, while rapidly flying through the air and through thickets, without hindering the sight. Birds are for these purposes furnished with a third eyelid, a fine membrane or skin, which is constantly moved very rapidly over the eyeball, by two muscles placed in the back of the eyes. One of the muscles ends in a loop, the other in a string which goes