the nature of the marl favors the distribution. The weather is the best operator in producing disintegration, and the time of exposure may produce some useful reciprocal actions. In whatever manner marls are applied, it is absolutely necessary that the substance be reduced as fine as possible, by breaking the lumps, spreading it evenly by harrowing and rolling when dried after rains, and by being ploughed into the ground by means of a shallow furrow. Some marls will crumble to powder, immediately on exposure, or very soon after; others require the changes both of summer and winter, and also much attention in improving on the action of the weather, by breaking, harrowing and rolling.

The effects of marl have been much the greatest on dry, sandy grounds, that have been converted from a comparative waste, into arable cultivation, and on light loams. On raw, damp loams, reports have been unfavorable. The marl attracts moisture, and thus increases the poachy looseness of the land. Clays are sometimes much improved by the application of marl, but the soil should be dried, and the clay well pulverized, in order to facilitate the incorporation with the sandy substance. Practice directs the use of clayey marls on all light lands, and the application of sandy and shelly marls to heavier soils; but all these substances have been found useful on any soil, when judiciously applied.

Marls are often made into composts with earth and farm-yard dung, either in layers, or in heaps, or in the bottoms of the cattle yards, where it will be soaked with the urinary fæces, and afterwards mixed with the heap. It is thought that such a preparation is more effectual than marl by itself. Frequency of marling may produce a hurtful looseness in the land, which is very easily removed, by pasturing the land in rest for a number of years. The avaricious use of the plough has produced the trivial, hurtful effects that have sometimes been observed from the use of marls.

Effects of Soaking Seeds in Chemical Solutions.

The steeping of seeds previous to sowing them is a practice of great antiquity, and has been extensively adopted. A strong solution of salt has often been employed in preparing seed wheat; also various chemical preparations—some of them possessing very energetic and even poisonous qualities. The soaking of Indian corn in pure water and drying it with plaster is a practice very generally followed, and the experience of practical men has pronounced it beneficial. Such seeds as are enveloped in a hard husk, as mangel wurzel for instance, are beneficially treated by steeping, which not only facilitates the important process of germination, but is likewise found to impart strength and constitution to the germ and young plant, according to the chemical constituents composing the solution.

The following results of carefully conducted experiments on this subject we abridge from the Transactions of the Highland and Agricultural Society:

Various kinds of seeds were steeped in sulphate, nitrate, and muriate of ammonia, in nitrate of soda and potash, and in combinations of them; and in all cases, the results were highly favourable. For example, seeds of wheat steeped in sulphate of ammonia on the 5th of July, had, by the 10th of August, tillered nine, ten, and eleven stems of nearly equal vigour; while seeds of the same sample, unsoaked, and sown at the same time, in the same soil, had not tillered into more than two, three, or four stems. The mixtures were prepared from the above specified salts, exactly neutralized, and then were added from eight to twelve measures of water. The time of steeping varied from fifty to ninety-four hours, at a temperature of 66° Fahrenheit. Barley was found not to succeed so well if steeped beyond sixty hours. Rye grass and other graniferous seeds do with steeping from sixteen to twenty hours, and clovers from eight to ten, but no more; for being bilobate, they are apt to swell too much and burst. A very superior specimen of tall oats, averaging 160 grains on each stem, and eight available stems for each seed, was prepared from sulphate of ammonia; they had an average of thirty four grains in the ear. The other specimens of oats, which were next the most prolific, were from muriate of ammonia; and the promiscuous specimens of oats were from the nitrate of soda and potash,—strong, numerous in stems, (some not having less than fifty-two,) but were not so tall as either those from the sulphate or muriate of ammonia.