

would do well to come forward and assist tenants in this matter, instead of binding them down by agreements to the ruinous four-course system. Turnips showed very evident signs of disease during the latter part of last summer, previous to any injury being done to them by frosts, and I take to myself the credit of seeing, and saying at the time, that they would rot very seriously, if the winter were at all severe. They were predisposed to disease, hence the decay amongst them at present. I hold Liebig's opinion, that we are exhausting the land of its most valuable constituents, by our system of farming; but I differ from him, in believing that sewage is the *only* source from whence to regain those valuable constituents, as I believe the bowels of the earth contain an unlimited supply, and think my experience with marl, clay, &c., has proved the soundness of this opinion.

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S. ED GRAIN.

We find in a recent number of *Bell's Weekly Messenger*, a reference to a subject that was much discussed some years since on the tendency of seed grain of the highest quality to degenerate by cultivation. It was maintained that having formed a judgment on the average weight of grain which particular soils produced, grain intended for cultivating on such soils should be of lighter weight, as in that case it would naturally tend to improve. Whereas if the heaviest and most perfect seed was sown, it would not only not improve, but would in most instances actually deteriorate. This was asserted to be a natural law, applicable to the animal, as well as the vegetable kingdom. The question does not at all relate to the *purity* of the seed, but simply to its weight, or as it was termed, its perfected development. It must, we think, be evident that this is by no means so simple a question as this theory would seem to assume; for climate, soils, modes of culture, manuring, and differences of seasons, must be also regarded as important elements in the result.

We give below an extract from Mr. Cowan's paper, which originally appeared

in the *British Farmers' Quarterly Magazine*, conducted by the late Rev. Henry Berry, the well known breeder of short-horn cattle, and who energetically opposed Mr. Cowan's theory in reference to the breeding of animals:

"There appears to be a limit set by climate, cultivation, situation, and local circumstances, to the quality of the produce of the soil. All cultivated vegetables have a tendency to degenerate, but this tendency is more than counteracted by the cultivation bestowed, until they arrive at a degree of perfection beyond which it does not appear possible by any cultivation to push them; and if this is attempted, a recoil is induced, and a degree of degeneracy and inferiority in the produce appears to be inevitable. This is perhaps particularly the case in annual and biennial plants. Suppose a very prime sample of wheat is presented to us, such as might induce a farmer or corn factor to pronounce it one of the best he had ever seen, the presumption is, that this fine grain grew on land of the best quality, which was prepared in the best possible manner for it; that the circumstances attending its growth, ripening, harvesting, &c., had been particularly favorable; and that it had, in fact, arrived at the utmost perfection which it was capable of attaining. Now, if this fine grain is used as seed what will be the result?—of what quality will be the produce? Will it not be found to have degenerated—to be much inferior to the seed used? Improve it cannot; that it will remain stationary is just possible, but that it will 'go back' is almost certain. When grain is used which has reached the maximum—wheat weighing, say 66 lb. per bush., barley weighing 58 lb. per bush., oats weighing 48 lb. per bush.—is the produce reaped equal in quality to the seed sown, or is it not always a few pounds, and often a considerable number of pounds, lighter? The plants appear to be constitutionally incapable of producing an equal to that grain from which they sprung, because it had attained that degree of perfection beyond which it could not possibly go, and, therefore, retrograde it must for a season; but having done so it will advance again the following season, if climate, soil, and circumstances, are favorable; should these be unfavorable, it will continue to retrograde. If this doctrine is correct, it follows, that to raise a first-rate article as produce, we must use an article of lower quality as seed. Agricultural societies offer premiums for the best sam-