

amount and quality of the crop. The following remarks of a writer in the *North British Agriculturist* are worth consideration:—

“To analyse a soil, and determine from the results the degree of its fertility and its adaptation to particular crops, was one of the first problems placed before the agricultural chemist, and from its solution the greatest advantages to agriculture were anticipated. As yet these expectations have not been realized, nor can this be considered as a matter of surprise. The progress of our knowledge, in place of simplifying, has complicated the question, and has shown that the fertility and infertility of a soil is dependent upon a variety of circumstances, of which its chemical composition is only one. Instances exist in which the barrenness of a soil can be distinctly traced to the deficiency of some one or other of the necessary elements of plant life; but in other cases, a barren and a fertile soil may present an almost perfect similarity in composition, and contain all the elements required by plants in proportion known to be amply sufficient for their healthy growth. The difficulty of explaining these facts has been increased, just in proportion as soil analyses have become more minute, for their tendency has been to show that the instances in which infertility is due to the absence of any of the essential constituents of the plants are comparatively rare, and that quantities which we are apt to overlook as totally unimportant, may be amply sufficient for all that is required. One-tenth of a per cent of potash, soda, or phosphoric acid, may be a quantity so small that the chemist might be justified in neglecting it, and yet a soil containing these quantities is capable of affording an abundant supply of these elements to many generations of plants; and notwithstanding this there are soils containing a much larger quantity of these substances, which, if not absolutely barren, are only capable of supporting a very scanty vegetation. These facts have rendered it obvious that it is not merely the presence, but the accessibility, so to speak, of the constituents of a soil that must be determined; and when the chemist, in addition to the exact proportions of these minute quantities, is required to ascertain the various forms of combination in which they exist, it is natural that he should show little disposition to enter upon a branch of investigation of such complexity, and which in the present state of our knowledge is likely to give only negative results.

The difficulties of this investigation have been so fully recognized by Liebig, that he has pronounced it impossible to arrive at a satisfactory knowledge of the composition of the soil and its suitableness for particular crops, by analysis alone.”

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### SHOEING OF THE HORSE.

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The observation, “we often transpose the order of our labors,” reminds me of a mode adopted in the shoeing of the horse, which I once witnessed, and which is, I believe, of importance sufficient to deserve notice in the pages of your valuable and very interesting work. It occurred at the town of Croydon, near London, which is known as the centre of the Stag-hunt, so well attended by the whole country around, and especially by the high-bred bloods of London; and where may be seen a field of the best horses in the whole world.—many of them worth their five or seven thousand dollars.

As I once passed through this town, one of my horse's shoes became loose, and I went to the shop of a smith, named Lovelace, to get it fastened; the shoe was nearly new, and had become loose in consequence of the nails having drawn out of the hoof, although they had been clinched in the manner universally practised. The smith remarked that all the other shoes were loose, and would soon drop off, when I requested him to take them off and replace them, and then did I perceive the different mode which he adopted for fixing them, which I will here detail. As fast as he drove the nails, he merely bent the points down to the hoof, without, as is customary, twisting them with the pincers; these he then *drove home*, clinching them against a heavy pair of pincers, which were not made very sharp; and after this had been very carefully done, he twisted off each nail as close as possible to the hoof; the pincers being dull, the nail would hold, so as to get a perfect *twist round* before it separated. These twists were then beaten close into the hoof, and filed smooth, but not deep, or with the view to rasp off the twist of the nail. “Oh ho!” said I, “I have learnt a lesson in horse-shoeing.” “Yes,” said he, “and a valuable one; if I were ever to lose a sin-