

LANDSCAPE ENGINEERING.—Sir Walter Scott, in his prose works, considers the name "Landscape Gardening," as expressing the object of that profession, to be an unfortunate selection, inappropriate and not conveying a true meaning; the result of which has been to give it a mechanical turn, and, as we see, followed by those who possess none of the requisite qualifications.

The practice of Landscape Gardening involves a thorough knowledge of so many professions, that it seems almost out of the question for any one person to be master of it; and the nonsense that has heretofore been written about it, to prove that only persons gifted with good taste, artistic appreciation, correct eye, happiness of expression, &c., can hope to be successful, will avail nothing, if the subject is thoroughly sifted and placed upon a proper basis. We do not favor the idea of keeping the principles of the art in obscurity, but believe that the more thoroughly they are understood, the more general will be their application. We are of the opinion that the Gardener who has made himself master of all that relates to the successful cultivation of whatever is deemed useful, beautiful, and ornamental in the vegetable kingdom—if he understands chemistry, geology, botany, and the composition and organization of soils, manures, plants, &c., has done well. He has attained a point which, we fear, few of that calling have yet reached, and the field before him must always continue to reveal new beauties, and call for still further progress.

But when we come to topographical maps, plans, roadways and their construction, drains, grading, bridges, culverts, and the preparation of ornamental grounds, it strikes us forcibly that another profession must be called in to help us to attain the beautiful—to do so in the most economical manner, and to be free from all guess-work and experimental forms. It is not to be presumed that a gardener is familiar with the practical operations of drafting, levelling, surveying, measuring and removing earth-work, curves, tangents, gradients, lines, angles, &c., so necessary to accomplish the useful and beautiful, and a knowledge of which must be acquired before success can be attained. The fact is Landscape Gardening embraces two distinct professions—that of Civil Engineering, or that application of it which might properly be denominated Landscape Engineering; and the ornamental and beautiful display of effects produced by planting, which comes strictly within the gardener's art, and to which the name of "Landscape Gardening" is appropriate. The designing, laying out and grading of grounds, the construction of roads and drains, &c., is but the preparation of the canvass, on which the gardener of taste and ability is to plant his effects.

Copeland, in his valuable work on *Country Life*, places much importance upon a thorough knowledge of engineering, as of value to the Landscape Gardener; and he is, I believe, the only writer who has alluded to it.

The Central Park of New York is a most admirable example of Landscape Engineering, as are also Greenwood Cemetery, and the Cemetery of the Evergreens near New York. Among private places we may mention "Sunny Side," and "Oak Hill" on the Passaic above Newark, N. J.; "Keewaydin" and "Boulder Hill," near Newburg, and the Parsonage Grounds at New Windsor, N. Y. At the latter place, the drive or turn around in front of the house, was made in the form of a regular mathematical ellipse, whose conjugate and transverse diameters are 24 and 36 feet; having a quantity of earth to dispose of, and to avoid the expense of a long haul, it was determined to raise the center of the ellipse $2\frac{1}{2}$ feet, and to graduate it towards the edges so as to produce a section of a prolate spheroid, (a solid generated by the revolution of an ellipse around its major axis,) the profile of which on the long diameter was a portion of an elliptical curve, and on the short diameter of a circular curve; the entire figure laid on a grade of 1 in 24 feet, sufficient to drain surface water. To perfect its shape with mathematical accuracy, on which depended its true beauty, it became necessary to set grades to guide the workmen, and this gave rise to a series of beautiful problems. It is needless to say that such figures convey a lesson, aside from their usefulness and beauty, while the meaningless and expensive productions of guess work and opinions fail even to please.

A common road, if not the most difficult example in the practice of civil engineering, is one on which every amateur engineer and road builder has utterly failed. It is somewhat questionable whether a man can be found who will admit his ignorance of the construction of a common road, and yet our roads, with scarcely an exception, are most shamefully located, constructed and repaired. There does not appear to be any improvement in this matter. The common road of thirty years ago was as good as the common road of to-day, and except in the vicinity of large cities, are a reproach to the community. The construction of a common road is as much of a science as the con-