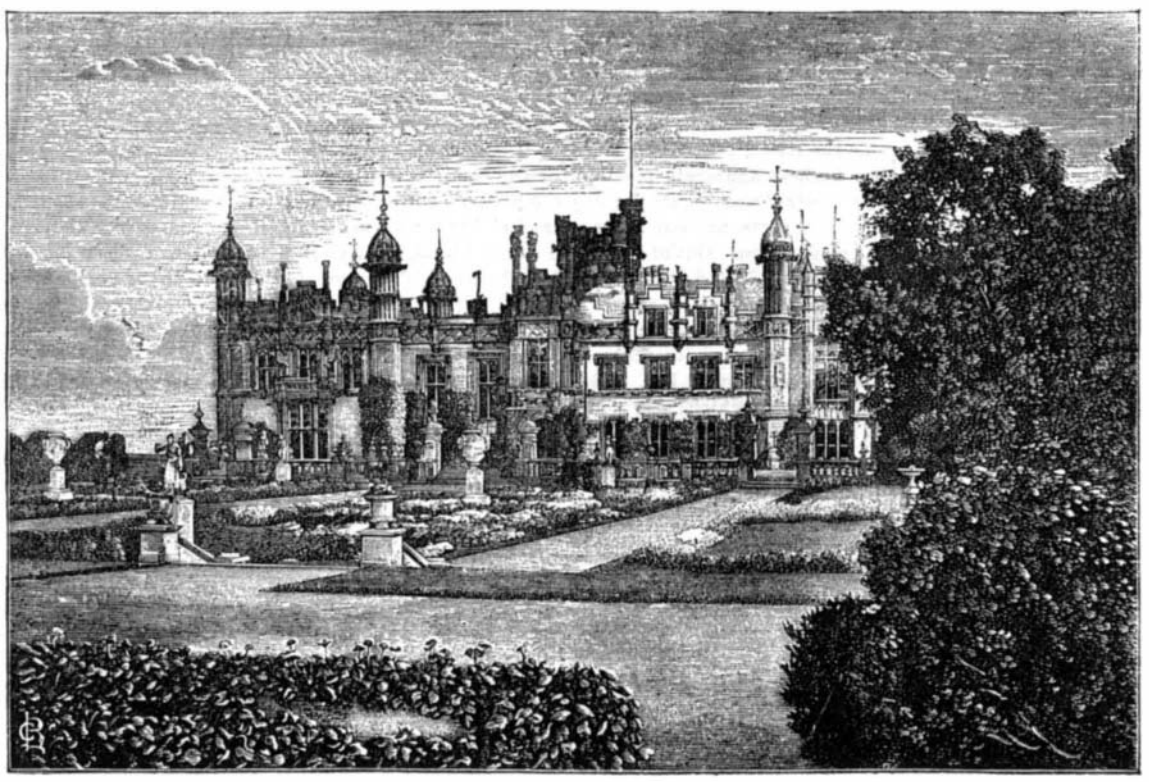
KNEBWORTH PARK, HERTFORDSHIRE, ENGLAND.

To every student of English literature, the name of the late Lord Lytton is familiar. Few there are who have not read the charming productions of his pen; and though he has passed away, he has made for himself an enduring name apart from all inherited or bestowed. But though his works have been read by myriads, yet those who have seen his residence and its gardens may be counted only by hundreds. He was a man of taste, and hence it might be expected he would by no means neglect his garden; and though in size and appliances it has no pretension to rival many of the great establishments, it is, nevertheless, one of the prettiest gardens we know.



KNEBWORTH HOUSE, ENGLAND.

Knebworth Park covers about three hundred acres of nearly the highest ground in the county of Hertford. The manor passed into the possession of Sir Robert Lytton in the fifteenth century, and it has continued in the possession of his descendants. The ancient manor house was pulled down in 1811, and the present mansion erected on nearly the same site. Of the west or garden front of this, our first engraving is an accurate representation and, owing to the elevation of the site, the tower, which forms a prominent feature in the architectural design, commands the view of a wide range of the surrounding country. Extended before it is a flower garden on grass, the beds framed in gravel, plentifully embellished with vases and statuary, and covering altogether about four acres. The design is somewhat complicated, and from its character difficult to plant so as to combine harmony of color with variety, while the number of plants required, some 36,000, is large for the means of producing them. The effect, however, as will be seen from our second engraving, is excellent; and though at the time of our visit the glory of the flower beds had departed, enough of their beauty was left to show what it had been when they were in their pride. The lawn surrounding the beds is beautifully kept, and extends on both sides of the broad central walk to the high laurel hedges which form the boundary of this garden. It is dotted with some fine araucarias, wellingtonias, cryptomerias, and other conifers. Some of the araucarias, after the dry summer of 1866, appeared, to be dying, but Mr. Kipling, the gardener, gave them a good mulching of loam, leaf soil, and a little well decayed manure, and they improved wonderfully. The ivy-covered summer house on the mound on the southwest side, and which forms a conspicuous object in our second view, commands a good view of the flower garden and mansion, and, in a clear day, of the surrounding country.

GARDENS AT KNEBWORTH, ENGLAND.

An old flower garden has been turned into a rosary, in which it is contemplated to carry pillar roses on arches over the surrounding walks. —*Journal of Horticulture.*

Modern Blasting Agents.

In a paper on this subject, recently read by Mr. Noble before the Society of Arts, the author thus explains the reasoning which led to firing slow explosives by local detonation: "When a hammer strikes a very thin layer of nitro-glycerin on an anvil, the blow produces a strong compression of the liquid, which liberates heat and raises its temperature to the point at which it detonates. But only that part which actually receives the blow explodes. If, however, the hammer is very heavy, and the blow strong, the explosion is no longer confined to the part which receives the direct shock, and the whole goes off. A local detonation, owing to the immense tension of its gas, must be very similar in action to a strong blow, and will thus compress the explosive liquid which surrounds it, causing it to detonate at will and to propagate the explosion throughout the whole mass by the same means. Whether that theory be correct or not, it led to a result which affords considerable facilities for the utilization of modern explosives. It enables us, with or without confinement, to turn a solid or liquid substance of very harmless appearance instantaneously into gas which occupies the same or nearly the same bulk, but has an expanding tendency which, for nitro-glycerin gas, must come near a pressure of 500 tuns per square inch."

Bicycle Riding.

This is a sport confined to a select few in this country; but in England it is extensively practised, with great satisfaction by the riders. Some of them give their experience in the *English Mechanic* as follows: L. Striffler, Secretary of Zephyr Bicycle Club, Moston, says: "I have had a roadster made to order, with a 51-inch driver, and it only weighs 30 lbs., and is plenty strong enough. I have discarded the brake as a nuisance, a danger, and extra weight. The best brake is your feet on the pedals, holding back; and if the hill is so steep that it overcomes you, then you may depend it is not safe to ride down, but get off and walk. Always lean well back when descending a hill, and incline forward when ascending, or when riding against a head wind. When riding on a tolerably level road, and especially if going fast, keep upright and firm in your saddle, and you will have no fear of a spill if you happen to come against a stone. Of course, the use of the step is an absolute necessity with our present sized machines, as far as mounting is concerned. I prefer vaulting off from the treadle, as it saves feeling about with your foot for the step, and perhaps catching your toe in the front wheel spoke. If you are riding through a town, if the same be paved and wet, be very careful about turning, as the mud which accumulates in towns seems to acquire a greasy consistence, and seems to completely lubricate the road; and if you turn sharply, your wheel runs away sideways, and you find yourself on the ground. I think it is wise to walk through towns if they are paved, and especially if wet, as you cannot get any speed, and it is no comfort to yourself, and the incessant jolting has a tendency to loosen your spokes. When going through a country town with macadamized roads, it is glorious to slip through at railway speed and astonish the natives; but whenever I come to a piece of ground which is paved with sets or rubble stones, let me get off and take pity on my good steed."

B. Travis says: "I have been a rider for six years on a wooden machine, and now on a spider-wheeled one. I am only about 5 feet 2 inches, and I ride a 45-inch wheel, with 5 inch cranks. With it I can and do ride up inclines much easier than with my old machine; yet they are each the same weight (50 lbs.) This attribute to the rider being able to apply his power because he sits over the wheel. Every rider who sits much behind his driving wheel knows that in driving up hill his arms have to counteract the push of his feet, whereas push downwards on the treadle requires very little pull on the handles to keep the wheel right. The large wheel machines are worked with the forepart of the foot on the treadle, and not with the hollow of the foot, as the small-wheeled ones were. That is also a great advantage; the leg not having to traverse so great a distance, one is enabled to ride more gracefully, and with greater ease. Some machines are without brakes, the necessity of which depends on the inclines they have to run down. I live in a hilly district, and often on a Saturday afternoon trip I have to go over hills 1,000 feet high. I consider it highly dangerous to attempt a run down some of them, unless you have a brake you can depend on, and then the run down will be splendid and swift; yet with a good brake, you can keep the machine well in hand."

"I have seen in your paper something said about a one-line railway, the running of a bicycle having inspired the remarks. Now, there is no analogy in the matter, for an engine or train would not keep erect on one line of rails only, unless it was perfectly balanced, and remained so. A man could not run a bicycle even under those conditions. It requires a continual side movement of the front wheel to restore the balance that is always being lost; for if the wheels were put in a straight line, and fastened, there is no rider could ride it, for he would quickly lose his equilibrium—he could not restore it, and down he must come.

"I have also seen remarks and suggestions about multiplying wheels, so that one turn of the crank will make two turns or more of the wheel. Now, it won't do. The same effect can be got by shortening the crank; but then, who has the strong legs required to drive them? Bicycles as made at present are very good, and very simple also; any addition of gearing will only impair them. Now, I do not expect that any rider will be able to propel himself through the air on any bicycle much over a mile in three minutes—for that is 20 miles an hour—the air itself being the great retarder. I would rather face an incline than a strong wind, it being impossible to go with any speed in the face of a stiff breeze."

A New Cement.

A French chemist is said to have succeeded in preparing a mineral compound, which is said to be superior to hydraulic lime for uniting stone and resisting the action of water. It becomes as hard as stone, is unchangeable by the air, and is proof against the action of acids. It is made by mixing together 19 lbs. sulphur and 42 lbs. pulverized stoneware and glass; this mixture is exposed to a gentle heat, which melts the sulphur, and then the mass is stirred until it becomes thoroughly homogeneous, when it is run into molds and allowed to cool. It melts at about 248° Fah., and may be reemployed without loss of any of its qualities, whenever desirable to change the form of an apparatus, by melting a gentle heat, and operating as with asphalte. At 230° Fah it becomes as hard as stone, and preserves its solidity in boil ing water