

THE GARDENS AT SCHONBRUNN.

The gardens at Schönbrunn, the Emperor of Austria's palace, situated about 1½ miles from Vienna, are renowned for their extent and beauty, and also for their completeness, the botanical collection being one of the finest in the world. They also contain a large and important menagerie, and a system of waterworks and fountains. We give herewith a view of gardens, selected from the English Garden; and a correspondent accompanies it with the following remarks:

"The creation of ornamental gardens in all parts of Europe, and, in fact, throughout the world, is becoming a matter of common occurrence. Not only are private gardens, of great importance in an artistic point of view, being formed, but also public parks and gardens of great extent; and this is calling into requisition the highest talent at command in that department of horticultural art. In the gardens of the Château of Schönbrunn, cropped masses of trees serve as grand walls of verdure, in which niches are cut for statuary; and one of these artificial avenues, that represented in the illustration, leads to the beautiful spring *Schöne Brunnen*, from which the name of the original castle was derived. The spring is now enclosed in an elaborately wrought marble framework, and the center of the basin is decorated with statuary, after the manner employed at Versailles. The gloriollette, a temple displaying a colonnade, is seen in the distance, rising above several lofty walls of foliage, in front of each of which are shrubs of lower stature, which are left to assume their natural growth; and the contrast between the trimmed and the untrimmed forms is far from displeasing. The magnificent gardens attached to the Château Schönbrunn, from the great height of the vast walls of verdure above alluded to, the profusion of statuary, and other decorative objects, so placed as to produce the best possible effect, form grand models of the formal style of treatment, and are well worthy of the careful study and earnest attention of every practitioner of the art of decorative gardening on a large scale."

Electric Pile in Sesquioxide of Iron.

This apparatus is contained in a square glass jar. The pile is composed of a prism of charcoal which contains sesquioxide of iron in its pores, and a small rod of amalgamated zinc. The latter passes through the stopper, to the under surface of which is fixed the charcoal. A solution of ammonium chloride is used as the exciting fluid. The reactions are the same as in Léclanché's couple, in which oxide of manganese is used. When the circuit is closed, the chloride of ammonium attacks the zinc, forming a double chloride of zinc and ammonium. The latter, on being set at liberty, decomposes the sesquioxide of iron, carrying off a part of its oxygen and forming free ammonia, which disappears by evaporation. This pile ceases to act so long as the circuit remains open. Its durability and force are large. Its electric power is as 12 to 10 of the sulphate of copper bat-

tery, and it is thus well adapted for industrial purposes. The inventors are MM. Clamond and Gaiffé, and it is manufactured by the latter gentleman.

The Chilian Exhibition.

The annual festivities in commemoration of the National Independence of Chili have this year commenced with the formal opening of the International Exhibition at Santiago. The ceremony of inauguration was held in the beautiful park in front of the main building, the guests assembling in a spacious and ornamental pavilion erected for the occasion. Passing through the vestibule, the first impression on entering the central hall is a little disappointing. The interior is spacious, but rather cold in its decoration. It is 150 feet in length, about 60 feet broad, and 50 feet in height: it is well lighted, and, had it been filled with more artistic manufactures, would have formed the center of attraction. The space, however, is devoted exclusively to German goods, and the show is decidedly poor and wanting in effect. A trophy of leather in an oak case breaks the vista down the centre; on either side are pianos and some organs, and further on are glass cases containing toys, and ornamented above by bird cages. There is hardly time to examine the objects exhibited in the remoter parts of the hall, but a glance towards the sides shows that, beyond the toys and other bazaar-like articles, are displays of goods from German manufacturers which will compete with Sheffield, Birmingham, and other industries. In the south gallery are displays of needlework and embroidery by the pupils of various charitable institutions. And beyond there is a splendid collection of Chilian mineralogy, prepared by Señor Domeyko, who has been indefatigable in his efforts. The excellence of the classification and display causes the visitor to be immediately impressed with the variety and richness of the mineral products distributed throughout the republic. In the same gallery is exhibited a collection of all the native woods, with a description of their properties and uses. In the quadrangle, under an iron roof, the educational apparatus is displayed, which includes the exhibition of the College of Agriculture, and the space is filled with working models of farming machinery, skeletons and diagrams of animals, and cognate aids to instruction. In the quadrangle on the corresponding side are objects from San Salvador and Brazil. The machinery annexe is of corrugated iron with the sides open, in length 500 feet, and about 60 feet across. A central platform over the revolving shafting passes from one end of the building to the other, and enables visitors to inspect the machinery working below. The machines exhibited are multifarious; the sawing mills of the Canadian Watercourse Company attract a good deal of attention. Mining, hauling, pumping, pressing, and farming machinery occupies the whole of the space. At the end of this building is an annexe belonging to Messrs. Robey & Co., where they exhibit agri-

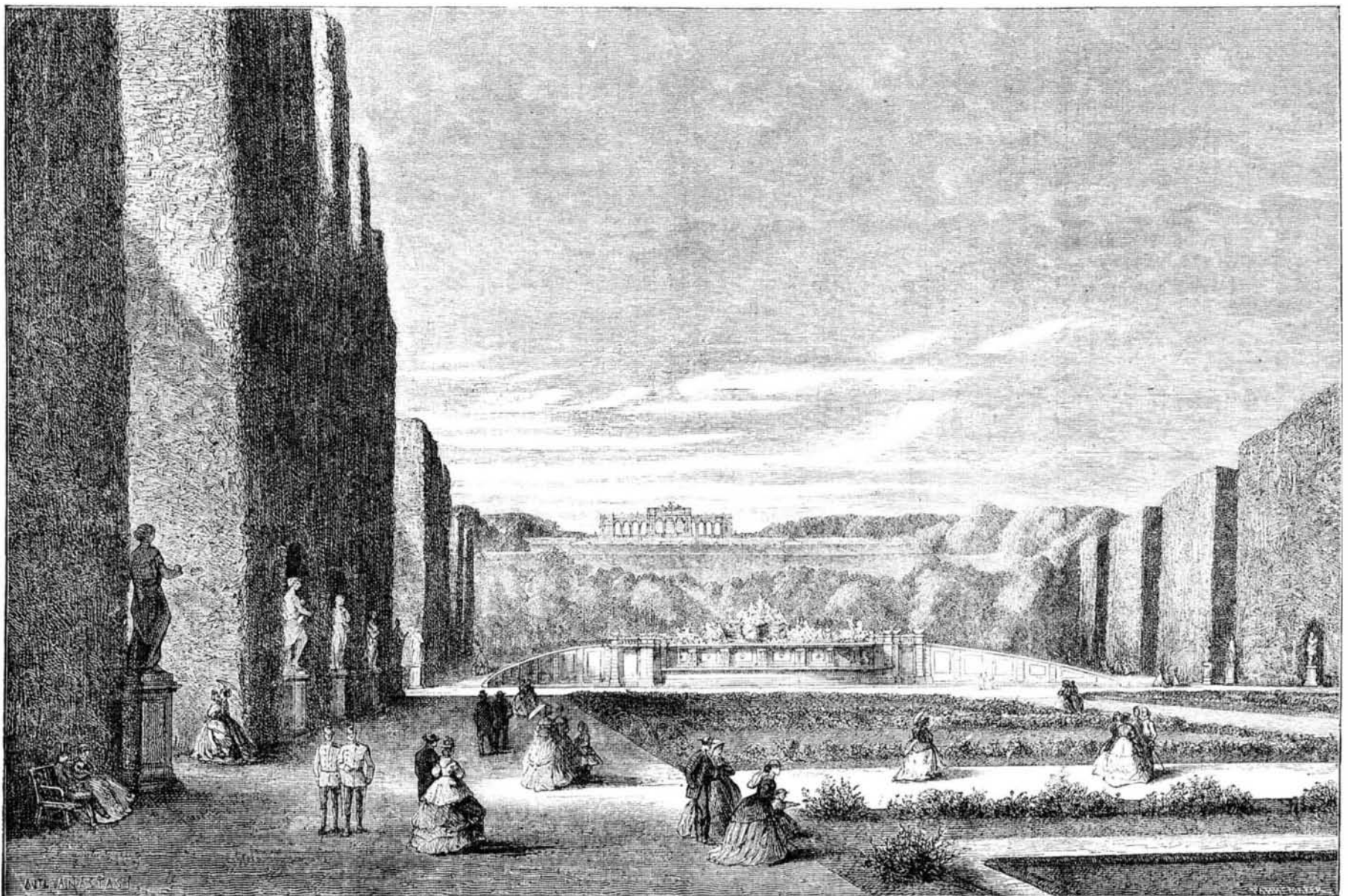
cultural machinery, and further to the west is the machinery of Ransome, Sims, & Co. Crossing over the grounds to the eastern side, we come upon the annexe of Messrs. Rose-Innes & Co., similar to the building on the west, but closed at the sides. This is the only part of the exhibition which is absolutely completed. On entering we come into a large room ornamented with trophies of steel tools and manufactured articles. A fine stand of plated goods of James Dixon & Sons, of Sheffield, is prominent; beyond, a stand of Rodgers' cutlery, crucibles of the Plumbago Crucible Company, and articles of dozens of other well known English makers attract the attention. Side by side with the English tools of Firth and others are those of the Douglas Axe Company and other American makers. Two small doors lead into the machinery department, and here again the display is representative from the number of English manufactures brought together. Here are the ponderous thrashing machines of Clayton, Shuttleworth & Co., and near stands a Pitt's thrasher, less substantial, but much more easily moved. Besides the agricultural machinery, there are mining pumps, sawing machinery, and presses, all in full work; four or five small steam engines are under steam, besides the one driving the central shafting. Emerging at the further end, we come upon a small model of a mineral line, with a tiny train making the ascent of a very steep incline, carrying with it the operator in the car. The line has a center cogged rail, and the locomotive an extra cog wheel to supplement the ordinary driving wheels when a severe gradient has to be passed. The model is exhibited by Clark & Co., the *cessionnaires* of the Transandine Railway, which is to connect Valparaiso with Buenos Ayres; and the last annexe is occupied by English and American machinery imported by that firm.

German Exhibition in 1878.

An exhibition of somewhat unusual character will be opened in Berlin in 1878, the plans for it being already under discussion by an executive committee. Its object being to show Germans what Germans can do, and therefore in what points head can be made against foreign competition, the whole arrangements will be strictly national. The exhibition will be classified in twenty-one groups, and prizes will be awarded in medals distinguished as for production, manufacture, commerce, art, science and education. Workmen's models will also be issued.

Exhaustion of the Soil by Apple Trees.

The author calculates that, in a life of sixty years, an apple tree removes from the soil 60 lbs. of nitrogen, equal to 11,500 lbs. of farmyard dung. To maintain the soil in condition, therefore, about 175 lbs. of dung ought to be annually given per tree during the fifty years that it is in bearing.—*M. I. Pierre.*



THE IMPERIAL GARDENS AT SCHONBRUNN. AUSTRIA.