

## THE CRYSTAL PALACE

**GENERAL REMARKS**—We intended to present the affairs of the Exhibition in the order of the classes fixed upon by the Association: but we soon found the plan impracticable, chiefly from the fact that the classes have been filled so slowly, precluding the possibility of a just comparison of articles. We presume, however, that the "omnium gatherum" method which we have adopted will, in the end, prove satisfactory enough to our readers. We wish to present everything useful or interesting that we can learn about the Exhibition.

The past week will be memorable for the interest and value of the contributions brought in. Among the most notable of these are tapestries and porcelain from the French Imperial manufactories; statuary from Greece and Italy; a few miscellaneous articles from Spain, and Power's "Greek Slave," "Eve," "The Fisher Boy," and "Prosepine." The value of articles received during the past week will probably exceed \$200,000. The space in the main building is nearly all occupied, and the picture gallery and machine room are fast filling up. Early in September the Exhibition will be in its glory. The daily average number of visitors since the opening has been about 4,000.

A few machines have been placed in position in the Arcade ready for operation.—Among these are Chichester's machines for preparing and dressing flax, and several beautiful steam engines. Mr. Holmes, the Superintendent, intends to try the capabilities of the engines by means of the Dynamometer.

**MANNER OF EXHIBITING**—The wisdom and taste which many of the exhibitors have displayed in the arrangement of their wares, are much to be admired. Those who use the Exhibition as a means of advertising, if their manufactures are truly worthy and marketable, will never have cause to regret their outlay of money and trouble in decorating the space allotted to them. People go to the Palace expecting to be interested, and unless there be something extraordinary about a well-known article, they will hasten away from it. Jackknives and crockery may be seen anywhere, and it put up here on shelves, as in a country store, although most admirable of their kind, would only provoke an impatient smile. But tastefully or ridiculously displayed in circles, stars, and pyramids, and they attract a wondering crowd. Genin's hats would scarcely be honored with a question or a look, if hung on pegs in a corner; but his enterprise, so lavish of money and taste, almost make the ticket-hero worthy of the conspicuous place he occupies on the main floor almost under the dome.

If there is any peculiar excellence about an article, in its appearance, mode of manufacture, or practical fitness for use, all the visitors would like to find it out, and with the least possible trouble. Most of the visitors have time only to hurry through the building, and if anything is put up for them to read they wish to be able to do it as they run. No one will pause over some of the miserable scratching in the Palace without vexation. As the model of an article well exhibited, we do not hesitate to name the "Francis Life Boat;" it is in a good place—you can get on all sides of it—and by the plain inscriptions on it, and the pamphlets attached, you can learn all about it. People like to know who the exhibitors are—sometimes wish to see them or their agents, in order to make inquiries about their manufactures. We wish all the exhibitors would feel it for their interest to be in person in the city, or to be represented here by agents from whom information might easily be obtained.

**LEATHER**—In the French Department is a large display of leather: Ch. Knodier, Strasbourg, exhibits "a variety of dressed skins," which look very well. From the inscriptions upon them we copy the following, verbatim: "Patent Tanned Leather—New process of tanning leather almost instantaneous et superior to any known hitherto. It gives in thirty to fifty times less time a produce of much finer color, softer, heavier, and more water-

proof. A. Barbier, Agent;" "Calf 8 minutes;" "Horse 3 days in summer, 4 days in winter;" "Boot legs in cow leather 6 days in summer, 8 in winter;" "Calf 2 days in summer 3 in winter." We have our doubts about this new process; we have not been able to get any reliable information. If there is anything in it we will apprise our readers at the earliest day. M. Barbier at present is not in the city.

**CURIOSITIES**—There are a great many "curiosities" in the Palace—enough to furnish a respectable museum, and about many of them, at any time, you may see admiring crowds of little folks, or of older people, who come to see the marvellous. Anything very big, or very little, or very odd in any way, is looked at with the greatest wonderment and satisfaction. Very few will go away without vexing their eyes in fruitless attempts to distinguish the tiny parts of the Lilliput steam engine, or in squinting through a microscope to read the Lord's prayer engraved on a three-cent piece and on a gold dollar, in Old English characters. Peculiarly the delight of the juveniles are the Brobdingnag razors and knives,—architecture and statuary in soap and wax—the model (done in sugar-candy) of Greenwich street on the arrival of the emigrant train; the wax baby rocking by machinery, and Capt. Gulliver besieged by the Lilliputians. And older people need not be ashamed to look at such things. With so much that demands studious examination, we need something to refresh us, and we would be willing to have a great deal more of the amusing. We would especially like to hear music in the Palace. Why don't they wind up those beautiful music boxes in the Swiss Department? Why don't they get a grinder for the mechanical piano? Or bring in a hurdy-gurdy from the street? And we would not be sorry to have something there to laugh heartily at—one thing even so utterly but ingeniously ridiculous or absurd as to provoke "skreems of laughter." There is no sound philosophy that scorns a laugh. The bow is not always bent.

We intend, in the course of a few weeks, to devote a page exclusively to the description of "curiosities" in the Exhibition.

**CRYSTALIZATION**—In any part of the city you may have visible evidence that there is a Crystal Palace in town: hundreds of stages and cars, by their ensigns and banners, proclaim that the Exhibition is the center of attraction. You may see the Palace lithographed, painted, engraved, and daguerreotyped in all the styles and sizes. Two newspapers (one of them a tolerable imitation and copy of the Scientific American), on the prestige of the Exhibition, are floating on to wealth and glory—or their proprietors think so. The Crystal Stables are opened, "large bread" can be purchased at a Crystal Bakery; and on the docks the other day we had an opportunity of drinking "Crystal Palace ice-cool lemonade—one cent a glass."

**GOOD EXAMPLES**—On Friday last the proprietors of the New Jersey Locomotive and Machine Co. treated the men in their employ to an excursion to the Exhibition. On the day previous the hands in Colt's Pistol Factory had the same good fortune.

**THE THORWALDSEN GROUP OF CHRIST AND THE APOSTLES**—These statues are exhibited by Edward Beck, Danish Consul at New York. Owing to the limited space which could be spared, the group cannot be shown to advantage; but except in this respect the arrangement is admirable. The statues are the originals of Thorwaldsen—and until they were replaced by marble, were standing in the Metropolitan Church in Copenhagen. The figure of Christ is colossal, and to produce the effect intended by the sculptor, should stand about fifty feet from the group of Apostles. No christian man will go away content without lingering about this wonderful masterpiece of the great sculptor of modern times.

Undoubtedly the most striking feature of the Exhibition, to Americans at least, is the statuary; many thousands will have an opportunity for the first time of convincing themselves that sculpture is one of the most noble of the fine arts.

**Hoe's Press**—On page 362, we made the

remark that Hoe's Lightning Press was not to be at the Exhibition because, as we were given to understand, a sufficiency of room could not be obtained for it. This the Superintendent, Mr. Holmes, informs us is not correct. No application for room was made by Messrs. Hoe, or all the facilities and room required for its operation and display, would have been cheerfully granted.

**THE GOBELIN TAPESTRIES**—The American people have now an opportunity of seeing something peculiarly royal. The manufacture of Gobelin Tapestries seems to be a royal prerogative. They are made only in government workshops, and for royal use. Plebeian wealth may purchase anything to adorn its mansions but the imperial tapestry.

The tapestries exhibited at the Palace we understand were executed by the order of Louis Napoleon to adorn the Elysee. The largest is about eight feet by ten or twelve. They are elegantly mounted on frames and have the appearance of beautiful paintings.—The expense of a single piece varies from ten to thirty thousand dollars. Next week we shall give some account of the history and mode of manufacture.

**PORCELAIN**—The "Celestials" boast of knowing everything that is worth knowing,—and there were many "outside barbarians" who thought that all knowledge and art might be found within their wonderful wall. They would make us believe that gunpowder, the mariner's compass, and printing, had their origin in the Flowery Land. But since there has been an opportunity to examine these boastful pretensions, it is found that the Chinese are quite contemptible, and that the Outsiders are indebted to them for almost nothing except tea, a good market for opium, and a name for porcelain household dishes. The Chinese seem to have been half made and perfected in that state about three thousand years ago.

Porcelain is not, as commonly supposed, a Chinese invention, but was probably of very ancient Egyptian origin; but since about the Christian era, has been manufactured in China, and till the 17th century almost exclusively. The China ware was introduced into Europe early in the 16th century, by Portuguese traders, to whom we are probably indebted for the name "porcelain." This beautiful ware excited a great deal of attention and curiosity, but without chemistry its possession was of little avail for solving the mystery of its manufacture. For a long time it was supposed to be composed of eggs, and sea shells which had undergone a preparatory burial of some centuries in the ground. The secret was kept in the possession of the Chinese till the beginning of the 17th century. A cunning Jesuit missionary succeeded in evading their watchful vigilance, and sent home some specimens of the earths from which the ware was made, with a circumstantial and tedious account of its manufacture. But the Priest was not a practical man, and omitted so many of the essential facts that the Europeans were but little wiser than they were before. However, attention was again called to the subject, and the new attempts were successful.

Saxony was the birth-place of European Porcelain, and Francis Boettiger the lucky potter. Boettiger, while an apothecary's clerk, turned his attention to alchemy; he soon became famous and acquired the reputation of possessing the philosopher's stone. Such a dangerous and enviable man could not escape the vigilance of kings, and he was confined in a castle to make gold for the royal treasury. He made no gold, of course, but in his vain experiments he noticed that his crucibles became glazed in a peculiar manner, and the happy thought came to him that he might have a better success in searching for the secret of the China ware. His first attempts were only partially successful, for he could not obtain the pure whiteness of the Eastern manufacture. About this time it happened that a certain merchant, named Schnorr, found a curious white earth near Schneeberg which he introduced into the manufacture of hair powder, as a substitute for wheat flour. Boettiger had his wig dressed with this new powder—noticed its increased weight—discovered that the powder was an earthy matter, and guessed that it was the long-sought material for the

white ware: he tried it, and was completely successful. Thus commenced, in the year 1709, under the direction of Baron Boettiger, the celebrated manufacture of Dresden China, which is continued at the same place to this day. The buildings at first were guarded like a stronghold, with a draw-bridge, lowered only at night; and the workmen were sworn to observe "secrecy to the grave," which was the motto constantly before their eyes, affixed to the doors of the workshop.

The valuable secret was kept for about thirty years, when some of the workmen, yielding to temptation, sold their knowledge and skill to other masters, and porcelain potteries were established in many of the German States.

Early attempts, in France, were made to imitate the Dresden China, and porcelain works were soon erected at St. Cloud Sevres, and other places. But the ware was far inferior to the German, till an accidental discovery of an abundant supply of porcelain earth was made in a ravine near Limoges. The wife of a clergyman had collected some of it to use in bleaching linen; but her husband, suspecting its real value, took it to Bordeaux, and on trial it proved to be the very thing so much needed. From this time the Sevres Porcelain, already celebrated, acquired a renown, constantly increasing, for its hardness and extreme beauty.

England, since its subjugation by the Romans, has been noted for its potteries, but till about the beginning of the 18th century, their products were only of the coarsest description. Salt glazing, a great improvement, was introduced about this time, and shortly after, white stone-ware, in which powdered flints are used. The popular account of this last invention is quite curious. While travelling to London in the year 1720, a potter by the name of Astbury had occasion, at Dunstable, to seek a remedy for a disorder in his horse's eyes, when an ostler at the inn, by burning a flint, reduced it to a fine powder, which he blew into them. Astbury observing the beautiful white color of the flint, after calcination, instantly conceived the use to which it might be applied in his art. Wedgwood ware, famous and used in all parts of the globe, was invented by Josiah Wedgwood, of Staffordshire, in 1763. But England has not been distinguished for her manufactures of porcelain of the finer kinds: English porcelain is inferior to the French, particularly in hardness, the power of enduring heat, and in ornamentation.

In the United States comparatively little has been done in porcelain manufacture, although there are several localities where the materials may be procured.

The chemical constitution of porcelain is quite similar to that of glass; the essential ingredients are pure flint or silice, and white clay or alumina. The name silicate of alumina expresses its composition. Porcelain is colored by means of the metallic oxydes—the oxydes producing the same colors as with glass.

The mode of manufacture is pretty generally understood to be quite similar to that of common earthenware. The materials are first sought of the greatest purity and whiteness—reduced to an impalpable powder—thoroughly mixed with each other, and brought to the plastic state by the addition of water. The shape is given by means of a lathe, mould, or the hands. The vessel is then slowly and carefully dried, and finally baked at an intense heat in an oven.

In the Exhibition the display of porcelain and earthenware is very extensive and satisfactory—and well shows the state of the manufacture at the present time. France, England, and the German States are the chief competitors. A tolerably accurate estimate of their relative merits may be formed from inferences easily drawn from the history of the art and the well-known characteristics of the different nations. In the French ware we should expect lightness, gracefulness, and excessive ornamentation; in the English and German—strength, massiveness, and boldness. The French make things to look at, but the Saxons to endure and to use.

When the Sevres porcelain, which has recently been received, is opened, we shall return to this subject.