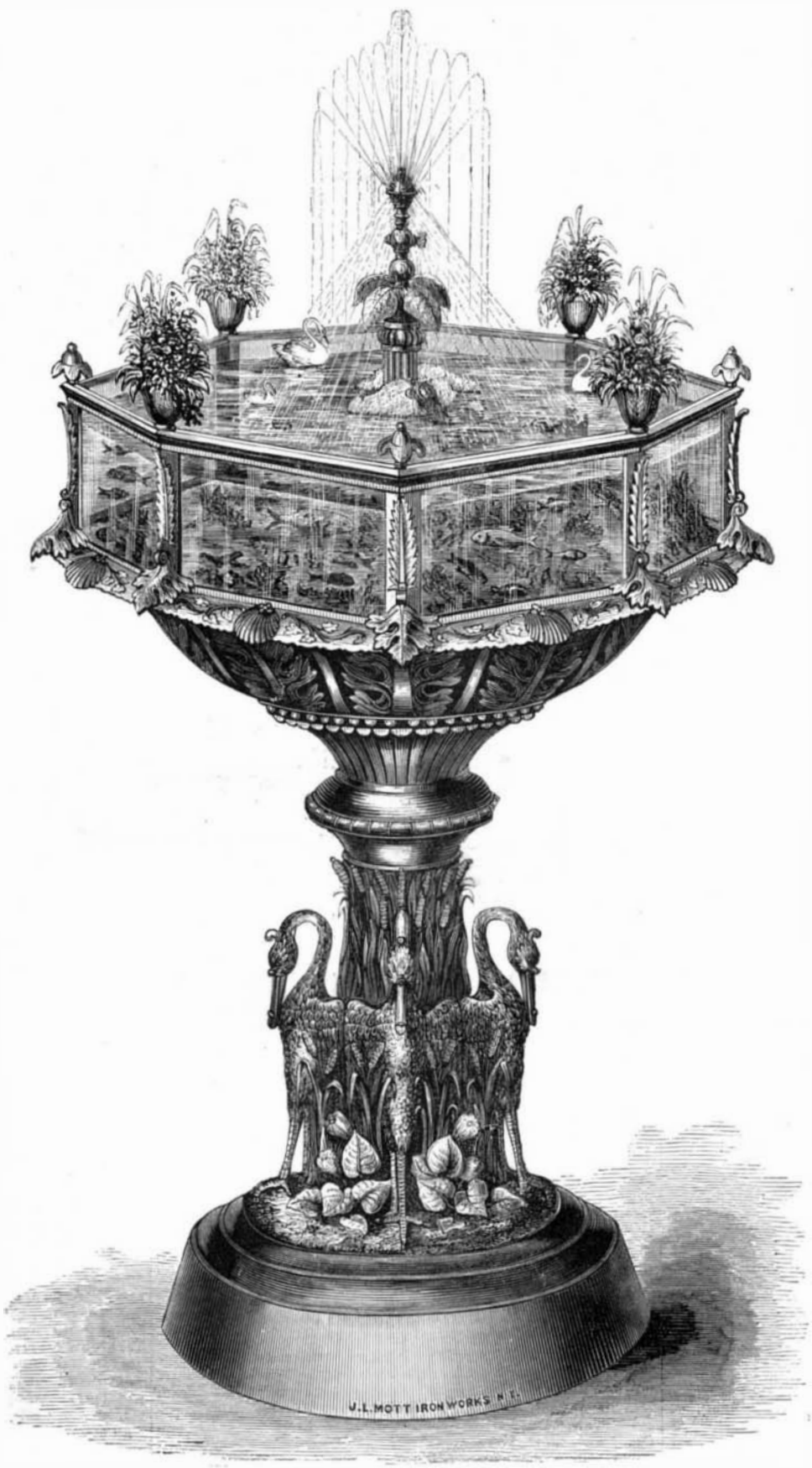
PARLOR AQUARIUM AND FOUNTAIN.

That there are no ornaments so beautiful as those formed by the hand of Nature, is a fact which is becoming generally recognized in the decoration of our dwellings. Rustic baskets, filled with gracefully trailing plants, vases of growing flowers, clinging vines allowed to run in unkempt profusion over windows and doorways, are now among the most admired embellishments even of the stateliest saloon or drawing room. Not only is growing vegetable life in its ever changing form thus employed in the beautification of modern homes, but, beside, animal and insect existence is called in to aid in the general adornment. A foreign cotemporary recently published an engraving of an insectarium, consisting of a Wardian case of glass, inclosing a number of growing plants, among the verdure of which were represented gorgeously hued butterflies, which, placed in the receptacle, were kept alive and nourished by the growing vegetation.

Our engraving illustrates a very tasteful parlor aquarium, made of cast iron and bronzed. The design is taken from the catalogue of the Jordan L. Mott Iron Works, of 90 Beekman street, in this city, from which work we recently made other selections of ornamental objects in metal. The hight of the stand is 57 inches, and its diameter 34 inches. Above is an octangular glass-sided vessel for the reception of the aquarium, in the middle of which is arranged a miniature fountain, and around the corners are placed vases for living plants.

The constant inflow from the fountain will keep the water always fresh and pure, though, even if the latter be not always in operation, the sanitary condition of the finny inhabitants can be maintained by a suitable selection of aquatic plants, placed in the bottom of the vessel. To prepare an aquarium of this kind, about an inch of clean sand should first be put in, and above that a light layer of gravel; then a few stones, bits of coral, shells, or clean cinders, may be built up in miniature grottoes or other pleasing forms, which will serve as shelters for the fish and add to the beauty of the ornament. Fresh water plants, suitable for planting in the bottom, may readily be obtained from any country brook. Eel grass, water weed, arrow head, frog's bit, duck weed, are all well adapted for the purpose. After setting out water is poured in, and the aquarium left for a week for the plants to vegetate. To absorb the fungous and mucous growths, fresh water snails are added, and afterwards the fishes are put in by degrees, care being taken to maintain the due balance of animal and vegetable life. A day's ramble, near a brook, will be sufficient to obtain a multitude of both animals and plants. Newts, tadpoles, sticklebacks, small sun fish, water beetles, minnows, one or two frogs, and may be a turtle, will thrive in a receptacle of this kind, and form an endless fund of amusement and instruction to lovers of natural history. The temperature of the aquarium should not rise above 70° Fah., nor fall below 50°. In hot summer days a screen should be used to cut off the sun light.



PARLOR AQUARIUM AND FOUNTAIN.

A Wonderful Model.

An elaborate model of a harbor, ordered by the Senate of Hamburgh to be constructed for the Vienna exhibition, has been completed in due course. The model is 17 feet by 6 feet in dimensions, and it exhibits the ships moored to the wharves, and the laborers employed in their different occupations. On the side of the dock is a railway with a freight train to receive goods from the ships. The vessels are of all sizes, from the huge steamer down to the smallest yawl. The whole represents, with pleasing accuracy, the busy life of a sea port.

Dyeing Aniline Green on Wool.

This dye, unlike the majority of aniline colors, has but a feeble affinity for wool. When this fiber is dyed in a green bath without previous preparation, but a very slight amount of the color is fixed. Some manufacturers have proposed to employ for this color the alkaline process, which gives such excellent results for blues, but it is with greens less certainly successful. The author's process is to prepare the wool in a bath containing a solution of hyposulphite of soda mixed with an acid or an acid salt. The sulphur suspended in the water becomes fixed in the wool, and enables it to attract the aniline green. It is advisable to add to the mordanting bath a small quantity of alum, or of a salt of zinc, the presence of which prevents the "tendering" of the wool. It is singular to see the action which the sulphur of the hyposulphites exerts upon this fiber. It becomes soft, loses its elasticity, and contracts considerably. This depends evidently on the penetration, into the capillary tubes of the wool, of that soft and viscid sulphur which is liberated from the hyposulphites. The singular property which sulphur in this state possesses of acting as a mordant for aniline green is not common to sulphur in all its modifications. Thus the solution of flowers of sulphur in the sulphide of carbon leaves wool completely incapable of attracting the dye. The same rule holds good, though to a less extent, with the polysulphides, which in all probability generally contain traces of hyposulphite. The mordant for aniline green is the insoluble electro-positive sulphur, as proved by the following experiment: When a sample of wool mordanted with hyposulphite is exhausted with sulphide of carbon, it loses nothing of its power of attracting and fixing aniline green; while another portion of wool saturated with the bisulphide of carbon which has served to extract the former, and which has been subsequently concentrated by distillation, takes up the color no better than does unprepared wool. If the operation is carefully conducted, taking suitable proportions of hyposulphite, and of alum, or zinc salt and acid, success is certain, and the wool is uninjured. It is scarcely needful to add that the wool must be previously cleansed from grease, and freed from all metallic contaminations, by passing it through very weak hydrochloric acid. If this is neglected the shade may be saddened by the formation of metallic sulphides upon the fiber. The actual dyeing is performed in a solution of the green in hot water, raising the temperature to close upon 100° C. If yellowish greens are desired it is necessary to add to the bath some picric acid, and a salt capable of raising this coloring matter, which will only dye in presence of an acid. As, on the other part, the green does not dye in presence of acids, a difficulty presents itself. This is overcome by the use of the acetate of zinc. This salt attracts the picric acid without injuring the green dyeing. If it appears that the green does not "work on" sufficiently, a little acetate of soda may be added. With the aid of these two salts the dyer can produce blue or yellow shades of green at his pleasure, and can make use of his bath for an indefinite length of time. This procedure applies equally well to mixed goods of wool and cotton. After the wool is mordanted as above, the pieces are washed in sumach for an hour or more. The dyeing is then conducted in the ordinary manner, beginning at a low temperature. Or the wool may be dyed first, and the goods may then be sumached, and the cotton dyed in a cold color bath.—*Chemical News.*

Metal Casting under Compression.

By Smith & Locke, of Boston, Mass.—The patterns are first brushed over with a mixture of olive oil and paraffin, after which they are coated with a slip composed of clay and fine sand. They are then placed in a flask which is filled in with a mixture of terra cotta (the old molds ground to powder) and clay. The flask is then placed under a powerful press, and submitted to a pressure of 400 lbs. per square inch, the mold thereby becoming condensed. From the press the molds are taken to a furnace, where they are hardened, and when ready they are placed in a casting chamber, to the number of ten or twelve at one time. The chamber is then tightly fastened, and the molten metal is forced into it, becoming distributed among the molds, and entering into the most delicate tracery of the patterns. The metal is injected through a cylinder attached to one end of the casting chamber, in which a piston is fitted, the cylinder being lined at each operation with a non-conducting substance, which prevents refractory metal from becoming chilled or adhering to the cylinder, and at the same time serves as a packing for the cylinder. The end of the cylinder next the mold chamber is fitted with a clay heading, to which is a gate stopped by a movable plug, and opening into the chamber. The molten metal having been run into the cylinder the piston is screwed up, slowly at first and afterwards quickly, when the plug is forced forward into the chamber, the metal following it, and running into the molds under considerable pressure, which is maintained until such time as the metal has set.

The above description is from *Engineering*. Mr. Smith is now in England engaged in the development of the improvement. The process has been in operation at Somerville, near Boston, since the 1st of May, 1869, where Mr. Smith has produced round as well as flat castings, such as ornamental columns. He has also cast monumental tablets 7 feet 6 inches high by 3 feet 6 inches wide, and one quarter inch thick, notably one to the memory of 400 soldiers, whose names were all cast on it. The process is both ingenious and successful, and is capable of a wide range of application in the arts and manufactures.

Paper in the Boston Fire.

Curious results followed some of the experiments made upon charred papers and documents, and the examination of books in safes which proved worthless in the great fire. It was found that what paper makers call poor paper, paper considerably "clayed," stood the test best. Parchment paper, used for bonds and legal documents, shriveled up exceedingly, and the print blistered so that it could be read when writing was illegible. So it was with the engraved work on notes. The gilding, on the account books burned and charred, showed out as bright and clear as when the books were new, which brings up the question if to introduce gilt-edged account books would not be well, on the ground that the gilt would stay the passage of fire to the pages within. Books crammed into a safe, so that it was difficult to get them out, suffered considerably less than those that were set in loosely, and in some cases came out from safes, in which every thing else was worthless, so far preserved that the figures on their pages could be deciphered. With charred papers, which could not be made transparent by any light whatever used, it was found, after the employment of vitriol, oxalic acid, chalk, glycerin, and other things, that any thing that moistened them to a certain stage—to which it was delicate work to get and not to pass—made the lines, words, and figures legible through a magnifying glass. It has been the almost universal experience that lead pencil marks show out all right where ink marks cannot be distinguished. The success of the use of photography has already been noted.—*Boston Advertiser.*