

WORLD'S FAIR NOTES.

(Continued from page 51.)

also for Spain, the Spanish navy and the Spanish people.

The French exhibit in the Manufactures and Liberal Arts building occupies one of the most desirable spaces in the building, as it is situated near the center by the clock tower and extends from Columbia avenue through to the east side of the building. The exhibit of manufactures is on the ground floor and that of liberal arts in the gallery, with private stairways in the department leading to the gallery floor. This exhibit was organized and arranged under the immediate supervision of the French government, and exhibits of certain classes are arranged in groups. The largest and most noticeable of these exhibits come under the following heads: *Furniture and interior decoration*.—This includes a large variety of interior furnishings, especially the gracefully designed and richly ornamented pieces of furniture for which French manufacturers are so famous; also a very large display of tapestries and other wall hangings. Several rooms are reproduced in all their furnishings, perhaps the most richly furnished being that of a drawing room. *Ceramics and mosaics*.—There are five exhibits of manufacturers of Limoges ware, which are extensive and which cover full sets of dishes as well as a few representative dishes of sets. Each display is artistically arranged, and although a comparatively small amount of space is occupied, in each exhibit there is shown perhaps \$25,000 worth of this famous ware. The exhibit of artistic glassware is considerably smaller than that of china, but much ornamental work in porcelain and glass is shown, and also of Sevres ware. One large room, richly decorated, is filled with beautiful specimens of this ware. Many small vases and half a dozen or more richly decorated and artistically shaped vases of large size are shown in this room. *Art metal work*.—The display of bronzes is one of the largest and finest in this department. Many of these bronzes are groups and statuettes, while others are electroliers of equal artistic merit. Many of these electroliers are designed for lamps of small candle power and are a revelation in artistic skill and taste in designing illuminating fixtures. In this department as in all others duplicates are sold of all pieces, and as the card of each purchaser is attached to the article purchased, the taste of the public can be readily gauged. Many popular figures have from fifteen to twenty-five or more cards attached to them, and these usually are by no means the ones of most artistic merits. By far the richest bronze exhibited is the Doré vase, a piece of much size and so artistically and elaborately ornamented as to require the closest study to appreciate the work that has been done on it. Besides the regular bronzes there are several exhibits of cheaper forms of bronzes as well as of imitation bronzes of plaster or other materials bronzed over.

Threads and Fabrics.—This is a department in which French manufacturers are so well known to excel in many lines of goods, and the rooms in which these exhibits are shown are usually crowded with women, especially in the sections devoted to clothing, costumes and accessories of the toilet. These exhibits include fabrics of all kinds, more especially those made of silk, and they are fabrics more in the line of personal decoration rather than other uses. Many large cases are filled with gowns, displaying the latest Paris fashions. Hats, bonnets, and kid gloves are also shown. The display of laces is very complete and includes many beautiful and costly specimens of work.

Jewelry and Ornaments.—This department includes a line of work in which the French so excel that it vies with the costumes section in popularity. Several exhibits of imitation jewelry are at all times surrounded by groups of visitors who have better use of superlative adjectives than judgment of precious stones, for adjoining the cases in which these imitations are shown, and which represent only a few thousands of dollars in value, is an exhibit of genuine stones that is estimated to represent about \$2,000,000 worth of goods. In the center of this case is shown a necklace and pair of earrings valued at \$106,000. The necklace is made up of eleven diamonds of as many different colors, each diamond joined to the necklace proper by a diamond setting. Just above this necklace is a pin composed of six blue diamonds on a background of yellow diamonds, which is valued at \$160,000. The largest stone in this pin weighs forty-one carats and in itself is valued at \$100,000. Just at the left of this is another pin composed of five whitestones which has a price of \$140,000. The largest stone, weighing forty-three carats, is valued at \$53,000. There is also shown in this case a prayer book printed in the fifteenth century, and before Columbus discovered America, in a binding of gold and silver enamel inlaid with rubies. At the right in the case is a tiara of diamonds from the crown jewels that was worn by the Empress Eugénie.

Printing.—Printers and everybody interested in the printer's art will find the department in which this art is exemplified from a mechanical standpoint very complete. This department is located in the Palace of Mechanic Arts. Two very old printing presses are

shown in this department, one of which was made in Boston in 1742. The other old press is of similar type, and is almost identical with the old Benjamin Franklin press shown in the Smithsonian Institution, at Washington. This press uses an iron impression screw instead of a lever, such as is used on some old presses. This latter press is believed to be 150 years old. It was in use at the time of the Revolution, and was also used during the late Rebellion for printing Confederate money. General Lee's farewell address to his army was printed on this press. Outside of these two ancient models, the other presses exhibited illustrate every variety of press that is in successful operation to-day. These include presses for every purpose and of various speeds, from the small press for printing cards or circulars to the monster quadruple inserting perfecting presses that print newspapers of eight, ten, twelve or more pages at the rate of about 40,000 an hour. Many of these presses are shown in operation. One large lithographic press that prints pictures in colors of the Exposition buildings and grounds is the center of much interest. The Chicago evening papers print editions each afternoon in this department. In the stereotyping department no new processes for stereotyping are shown, but complete outfits of different type and manufacture of the generally used process are exhibited. Type-setting machines of four different styles are also shown in this department in operation. These include both the machines that set ordinary type as well as those that cast the entire line from matrices. The *Daily Columbian*, the official organ of the Exposition, is printed in this department, and the composition is done on one of these type-setting machines. Printing several colors at the same time is also illustrated by several exhibits of presses for this purpose.

The art of making type is illustrated in a historical manner that makes it one of the most complete exhibits in this building, as the process of type making is fully shown by exhibiting machines illustrating the development of this art. This interesting exhibit begins with the old hand moulds, such as were used one hundred years ago, each letter or type being cast in a slow and uncertain manner. The next step in advancement is in the rotary type-casting machine invented in 1840, and which was operated by hand. Thirty years later steam power was applied for this purpose, making a machine which would seem remarkable even in these days, were it not for the type-perfecting machine of 1893, which is shown alongside the machine of 1870. This latest invention casts type at the rate of 160 to 180 a minute, each type being perfect in every respect and ready for use. It is a machine of marvelous ingenuity. Wooden type, presses, book binders' machinery, thread and wire stitching machines, cutters, perforating machines, and all other devices used in printing establishments are likewise shown.

Two of the British royal commissioners, James Dredge and Walter T. Harris, who have just returned to England, sent a letter to President Higinbotham, of the Exposition Company, in which they express themselves, regarding the Fair, in a manner that reflects the sentiments of every visitor. In this letter they say: "We wish once more to express to you our admiration and amazement at the marvelous Exposition which the unparalleled energy of your citizens has reared in Jackson Park. To say that it surpasses in size, beauty, and grandeur any previous international exposition is merely to repeat a threadbare platitude. Your World's Fair does this, but its mission in the work of progress and civilization constitutes its real splendor and its chief value. That it thus gloriously closes the commercial history of the nineteenth century, and thus ushers in the unknown progress of the twentieth, must bring to the city of Chicago and to those great men who have sacrificed themselves to attain this unlooked-for success, a position among the cities of the world that no amount of commercial prosperity and rapid growth could secure. This is the truth it will be our privilege to spread on our return to Europe, and we hope and believe that our testimony may help somewhat to spread the fame of the Exposition abroad and stimulate the interest of foreign visitors."

A new feature of the Fair is an exhibition of the method of saving lives as practiced by the life saving crews. The life saving station has been very popular with visitors, but large crowds now gather when an exhibition is to take place. A mock wreck has been provided; on this four or five sailors will lodge and act as perishing mariners, several times daily. To them the crew on the land shoot the ropes with which the hawser, breeches buoys, and tackle are to be drawn to the wreck and made fast. The crew has already had one real call, and they responded promptly.

SCIENTISTS are now telling us that the dangerous microbe is lurking in the greenback. Those in arrears for subscription, says a contemporary, can send the amount, as he has facilities to disinfect small amounts, and is willing to take the risk.

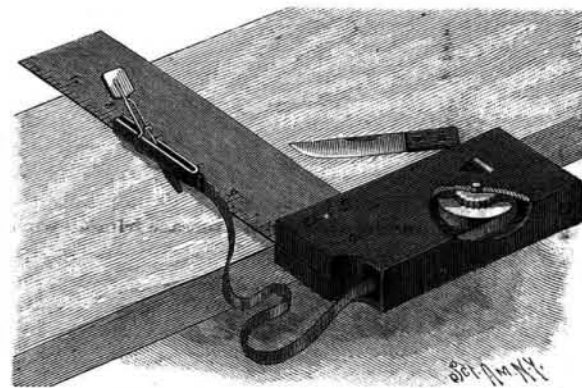
A New Comet.

The new naked eye comet was discovered, in constellation Lynx, at Salt Lake City, July 8, at 10 o'clock by Alfred Rordame. The position of the comet July 10 was about right ascension 8 h. 30 m., declination north 47 degrees. Prof. Swift, of Rochester, who is well known as a comet finder, says the new visitant is a rapid traveler and its motion is west with a daily rate of about three degrees. Prof. Swift says, July 9: "The comet was large and bright with strong central condensation, though no star-like nucleus could be discerned with my four and one-half inch comet seeker. Its tail was straight, exactly opposite the sun, but in consequence of the sky illumination by electric lights, appeared not to exceed three degrees in length." The next night (July 10) he continues: "The tail had considerably broadened, and I fancied had shortened in the interval. As the edges were several times brighter than its inner portion, I concluded it to be a hollow cylinder, as all comets' tails probably are. At 9 h. 50 m. it passed over a pretty bright star, but contrary to a former experience the star was entirely obliterated, showing the comet to be rather a dense one."

As far as can be determined, the comet is a new one and will probably go down into astronomical history under the name of Rordame's comet. According to the orbit determined at the Dudley Observatory, the Rordame comet is receding from the earth at a very rapid rate. It is not likely, Prof. Boss says, to be of much popular interest, though it will be dimly visible for a week yet. It is now about forty millions of miles from the earth and reaches perihelion on July 23.

AN IMPROVED CARPENTER'S SQUARE.

This square, which has been patented by Mr. Frank D. Dunnington, of Buckhannon, West Va., may, in general respects, be of the ordinary construction; but it has an attached marker connected by a line or tape with the square, so that the marker may be drawn along the edge of the blade in marking work, the tape and marker, when not in use, being drawn within the



DUNNINGTON'S CARPENTER'S SQUARE.

handle by a retracting device. The latter preferably consists of a spring-actuated drum journaled in a cavity of the handle, a detent and spring pawl, with projecting knob to be engaged by the thumb or finger, affording means to stop the recoil of the spring when the marker is being used. A light casing is provided for the marker, which consists of a pivoted blade whose point may project beyond either side of the case to mark the work, the other end of the blade forming a handle, shaped to be normally spring-held within the case. An independent additional blade may be arranged as shown, if desired, for convenient movement into and out of the square. This attachment in no way interferes with the ordinary use of the square, as the line and marker, when not in use, are drawn into the mortise or recess of the square handle, with only the handle of the marker blade projecting, so that it can be conveniently grasped.

Steam and Electric Railroads.

A writer in the *New York Sun* notes the fact that notwithstanding all the assistance given to corporations by legislatures, cities, counties, and private individuals, railroad construction in this country was very slow at first. In 1830 there were but 23 miles in operation; in 1832, 229 miles; in 1835, 1,098; in 1840, 2,818; in 1845, 4,633; and in 1848, 5,997. In no single year was the increase in mileage, which now averages 5,000 miles a year, as high as 1,000. But from 1849 to the beginning of the civil war, in 1861, the extension was rapid, the total mileage in 1861 reaching 31,000. Then construction languished until 1870, when 7,000 miles were added, and now the total length is 215,000 miles. On the other hand, the electric railroads have increased with marvelous rapidity throughout every section of the country. At the beginning of 1890, when electric railroad building first began to be popular, there were 200 companies in operation, covering 1,641 miles of track and using 2,346 cars. To-day, so great has been the multiplication of lines that there are more than 7,000 miles of electric street railroads. Three years ago, the mileage of horse roads was 5,713, of electric roads 1,641, of steam roads 554, and of cable roads 527. Now the electric roads lead all others.

Landscaping Treated as a Fine Art.

BY KNUT FORSBERG.

I.—LOCATION.

In this branch of human research, as in all kinds of fine art, nature is our best teacher, but even nature can be improved. The fast surface of the earth is naturally divided into flatlands and highlands, and nobody will pretend that the former, being entirely too monotonous, can be considered as picturesque and worthy the imitation; while, on the contrary, the latter, with their high mountains and bold precipices, their high growths and underbrush, their watersheds and cataracts, and their softer valleys and rolling grounds, constitute Nature's beauty, inclosing fine sceneries, and inviting perspectives into far-away-drawn vistas.

Landscaping from the highest point of view, therefore, should be confined to copying, in miniature, the whims of extravagant and capricious Nature.

In selecting a location for their country homes, people ought to look out for as much undulated ground as possible, with as extensive and many vistas as natural conditions may give opportunity for, and obtain the highest possible altitude for their proposed locations, whence could be contemplated not alone their own grounds, but also the neighboring country. The vicinity of New York abounds in such sites, and I therefore select such a one for my first sketch, as being most desirable, intending hereafter to treat upon less and less beautiful situations, finally to show that even the least favored of natural scenery can be made picturesque and inviting for homes, even if situated below the level of the highways.

A stiff or clayey soil is to be preferred to a sandy one, and the stonier the better, as will be demonstrated below.

In following my profession hereabout I found a knoll of about five acres, which I can landscape in such a way as to give the impression of containing at least 15 acres; it is oblong, with a straight slope of 56 feet toward southeast, 20 feet toward northwest, 35 feet toward northeast and 32 feet toward southwest, without any visible undulation in either descent. On the ridge the soil is a sandy clay, filled with cobblestones. The lower ground is stiff clay, and there is a small swamp which I would make a pond.

The architect's plan of the mansion should be a symmetrical building in Italian renaissance, surrounded by an open piazza, inclosed by a wire netting in summer and by glass in winter, when serving for palmhouses and greenhouses, and located upon a terrace fringed with an Italian trelliswork and having a kiosk in each corner. The house to lie on a hillock 5 feet above the level of terrace, which is laid out in a symmetrical flower garden, from which stairs shall descend 15 feet into the park proper. This much as to the architectural dispositions of the high ground.

In the north corner stables may be located and in west corner the gardener's lodge, with some greenhouses, and the kitchen garden outside the northwestern boundary.

To accommodate the owner and save expense, the topographical survey can be dispensed with, and the roads and walks located by laying a half-inch thick rope some 300 to 500 feet long (the rope to be wetted and stretched before) between the existing clusters of old trees, on easy curves, always allowing the owner to decide their direction until he be satisfied.

The reason why, in naturally undulated ground, the roads must be laid out on curves is that in picturesque nature, rocks, mounds, lakes or streams prevent their being stretched out in straight lines, and, as Nature's own plan should be followed, it will be necessary to construct obstacles for each curve, if they do not exist before, otherwise the curves will seem nonsensical, without motive, with the result that people will cut their own pathways "across lots;" and such shorter pathways only show that the landscaper did not understand his business, for the ground ought to be so shaped that its roads and walks themselves be the shortest possible communications between the given points to be reached by either riding or walking. Roads and walks do not belong to Nature's scenery, but are necessary for men's use and are really not beautiful objects. They should, therefore, be excluded from view as much as possible; at least, two roads should never be visible at once.

II.—ROAD BUILDING.

The roads are proposed to be 15 feet wide, so as to allow two carriages easily to pass each other, and the walks 9 feet, wide enough for three persons walking together to pass two others without separating.

On either side of the laid out rope, and 10 feet apart, stakes 2 inches thick and 3 feet long, or therabouts, should be driven to a depth of 2 feet into the ground, so as to stand firmly steady until the work be entirely finished.

Then the top soil should be scooped off to the extent of some 20 feet outside the house building lines, and also from all spots where future grouping of trees and shrubs be desired. The subsoil excavations from building sites should be carried unto the planting spots to

create new undulation of the ground, and give motive for the curves of the roads and walks, where every 2 feet higher altitude is marked by the dotted contour lines. This work done, the roads and walks should be excavated, the former 2 feet deep and the latter 1 foot deep; this soil again to cover the filled up mounds before the top soil already taken off be again spread over. Stones ought to be piled in heaps for further use.

On either side of the roads a ditch 6 feet deep and 1 foot wide at bottom should be dug, their earth to be used for fixing the proper grade of the roads and also for making the mounds, and the ditches themselves filled in, from bottom to top, with cobblestones, to free the roads of both underground still standing waters and overground rain water, and prevent any frost penetrating, because such drains act as constant sifts. The ditches of the walks should be made in like manner, but only to 4 feet in depth.

The roads then should be covered with stones 8 inches thick, and macadamized some 3 inches thick, the broken stone to be well rolled down and covered with a stratum of dried and pulverized clay half an inch thick and on the top of this an inch thick layer of coarse gravel be laid and well rolled.

The walks should be covered with a stratum of broken stone 3 inches thick, and be rolled, and filled in with half an inch of dried clay, on the top of which an inch thick layer of pebble stone should be put and rolled down. These pebble stones give the walks that warm yellowish color which looks so inviting in a park; whereas the commonly used bluestone gives them a cold tone which ought to be avoided in a pleasure ground, without mentioning the sticky mud which the bluestone spreads after having been used up for some time.

III.—LAWN DRAINAGE.

Wherever a watershed can be realized, it should be, because nothing more enlivens nature than water, the most precious element on earth. As already has been mentioned, there is a swamp in the lower part of the ground under view, and it, of course, ought to be made a naturally shaped, small lake, where all drainage water can flow. But a lake or pond must have such dimensions that its water does not evaporate too quickly, say at least 15 feet in depth, with as steep shores as possible; these, as well as the whole bottom, to be laid with concrete, so as to keep the water constantly clear and free from unwanted vegetation. The borders of the lake should be as irregular as possible (with visible motive for the promontories), in order that the whole watershed be susceptible of different points of view, when it will be considered to be many times larger than in reality it is. All pond excavations should be saved and used in making the mounds and hills. The pond should be surrounded with a wire netting, and the water surface enlivened with swans and ducks. The overflow of the water can be pumped up and used for fountains, the water again entering the high grounds to return into the pond, and again pumped up.

Deep drainage is of a very great advantage to vegetation. It is well known that no roots enter the still-standing subterranean waters, and if these waters be led off, at a depth of say 6 feet, the roots of the trees can go to that depth, and, of course, find nourishment from a far greater quantity of soil, while they never can be dried up by the sun, whose heat does not penetrate to such depth. As already said, no quantity of flowing water can be too much for a luxurious high growth, and, therefore, should be made all endeavors to lead higher located spring and well water into the parks, and use these waters at first in fountains, absorbing the carbonic acid from the air, and thus giving fresh nourishment to all vegetation, and afterward additionally, as has been suggested.

Park drainage consists in retaining the rainfalls for as long a time as possible in the ground for the benefit of all high growths, as well as of underbrush and grasses; but that water must be constantly moving, as stagnant water is death to all vegetation, and injurious to human and animal life, whereas flowing water is health and luxury to the whole vegetable and animal world.

To effect this saving of rain water there should be conducted all the waters from the road and walk drains into the lawns, care being taken to do this gradually and so that the water be not carried away too fast, thus useless to vegetation.

One foot lower than the bottom of the road and walk ditches, the ground should be dugged and filled in with cobblestones two feet high, covered with a stratum of asphalt, on the sides and on top, thus preventing the entry of earth and sand, but forcing the water in the ground to rise into the drains, and by them be borne away. Then the drains should be covered with earth, taking well care that the top soil be kept always on top.

These covered drains with a down grade of 1 foot on 100 will carry the underground waters slowly to the little pond, and thus the pond will be kept supplied constantly with moving water. Such drainage once

carefully executed will stand for all times to come and never need any repairing.

It is an impardonable mistake to build sewers in a park, unless from water closets and restaurants, but the mistake having been made, there is nothing to be done than that was done in all the Paris parks, namely, To introduce artificial irrigation, and also above described lawn drainage, entirely independent of the sewers drainage, or else the leaves must fall off from both trees and shrubs before midsummer shall have come, instead of remaining in luxurious foliage far into November.

IV.—SHAPING THE LAWNS.

Here again there must be followed Nature's examples, as we see them in the rolling grounds, where a hill never finishes in a sharp edge, but always allows the convex form gradually to shape into the concave and *vice versa*. Further, by a clever disposition of the undulation, so that one never shall see neither the whole surface nor all the boundary lines at one eye-stroke, there will be given to grounds an appearance of much greater size than they actually have. But even apart from this consideration, an undulated ground looks always larger than a flat surface of the same size, as indeed will prove to be upon measurement.

In creating such hills and valleys as have been treated herein, consideration must be had of the effect of placing the largest hills along the roads and keeping the smaller ones in perspective diminution.

Even in the choice of grasses the same effect can be reached, where different colors effect the idea of distance, placing nearest those with yellowish tint and farthest away those with bluish pigment.

Of course such effects can only be produced where means permit to sod the lawns with naturally grown grasses—not such as are sown by human hand; but such expense is well paid, when it is remembered that such sods will grow forever, without needing anything but some little manuring from time to time. In selecting the sods, they must be cut on sunny sites for the nearest to the roads situated grounds, and contain just such yellow and red flowers as create the foreground in a picture, and with grayish grasses and bluish flowers for the distances. The sodding beneath and between trees and shrubs should contain such grasses as grow wild underneath trees; and all sod cutting should be made on grounds with similar topsoil and subsoil as where the sods have to be laid.

Such lawns in a park are undoubtedly much more beautiful and attractive than those emerald green ones, which may be entirely on their right spot in small flower gardens and pleasure grounds, but which in no way can be considered as Nature's productive creation. I for one, at least, enjoy the meadow's thousandfold variety before the uniformity of the cut and rolled lawn; just as I prefer the picturesque rock-works on their right position to the polished marble stairs way off in a park.

Sodding should never be made the same year as the shaping of the grounds have been performed, because the new-upturned soil has not been weathered enough, nor received the carbonic acid from the air, which is so necessary for the decomposition of organic matters in all new-turned soil.

The vistas seen from high grounds between ranges of hills over lower and lower grounds also augment the perspective distances at the same time as the hills and their high growth cover up both the unsightly roads and the disappearing incisions of the planting.

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Philistine Records of the Hebrew Invasion.

Science contains an interesting account of the Tell-el-Amarna tablets, from the pen of the Rev. Thomas Harrison, of Staplehurst, Kent. These tablets, 320 in number, were discovered by a fellow woman in 1887 among the ruins of the palace of Amenophis IV., known as Khu-en-Aten, between Missieh and Assiout, about 180 miles south of Cairo. They have been found to contain a political correspondence of the very greatest interest, dating from some 3,370 years back. Many are from Palestine, written by princes of the Amorites, Phenicians, Philistines, etc., the burden of almost all being: "Send, I pray thee, chariots and men to keep the city of the King, my Lord." Among the enemies against whom help is thus invoked are the *Abiri*, easily recognized as the Hebrews. The date fixes that of the Bible (I. Kings vi. 1) as accurate. Many names occur which are familiar in Scripture, as for example, Japhia, one of the kings killed by Joshua (Josh. x. 3); Adonizedek, King of Jerusalem (ditto); and Jabin, King of Hazor (Josh. xi.). Very pathetic are the letters of Ribadda, the brave and warlike King of Gebel, whose entreaties for aid are observed to grow gradually less obsequious and more businesslike as his enemies prevailed against him, robbing him eventually of his wife and children, whom he was powerless to protect. But the greatness of Egypt was waning under the nineteenth dynasty: enemies were pressing her at home, and the chariots and the horsemen went not forth.