THE AMERICAN ARCHITECT AND BUILDING NEWS.

VOL. XLI. Copyright, 1893, by TICKNOR & COMPANY, Boston, Mass. No. 924.

Entered at the Post-Office at Boston as second-class matter.

SEPTEMBER 9, 1893.

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A TERRIBLE accident took place last week on the Boston and Albany Railroad, at Chester, a small place in the mountains, between Springfield and Albany. At Chester, the railway crosses the Westfield River, where an iron lattice-girder bridge, in two spans, was thrown across the stream. The bridge was built about 1870, and was calculated for lighter locomotives and trains than those now in use, so that, with some other bridges of similar construction, it was in process of being strengthened, to adapt it to modern requirements, by the rather primitive process of riveting additional plates on the top and bottom chords. In order to apply and rivet the additional plates, it was, of course, necessary to take the old rivets out of the chord plates, and clear the holes, so that the new rivets could be put in. This was done in sections, about ten feet of the chord having its rivets removed at a time. On the day of the accident, the workmen employed by the contractors for the repairs had just removed the rivets from one section of one of the chords, when twelve o'clock struck, and they dropped their tools, and made themselves comfortable for their dinner. A few minutes later, the Chicago limited express, consisting of five heavy sleeping-cars, and one of the largest locomotives on the road, weighing, it is said, ninety tons, dashed at full speed upon the bridge. The truss which had been dismantled instantly gave way, plunging the locomotive and three cars into the river, killing fourteen persons, and injuring about thirty others.

THE explanation of the accident is even more obvious than is usual in such cases, and every engineer will say that the bridge could not have been expected to behave differently under the circumstances; but some rather nice points are involved in the question who shall be held responsible to the injured persons for the catastrophe. The railroad company, it is understood, denies that it can in any way be held responsible, and refers inquirers to the bridge-contractors, whose men certainly caused the accident, by taking out the chord rivets, and who, as independent contractors, must bear the burden of any misconduct of their men. It seems to us, however, that the responsibility will not be so easily shifted from the railway company. The newspapers say that the men, having taken the rivets out of a section of the chord, should have applied the new plates, and made all safe again, before taking their dinner; but riveting a ten-foot section of chord-plates is a long job, and it would hardly occur to ordinary workmen to lose their dinner for the sake of providing against a chance of accident which they could not appreciate, even if they knew that the train was due. In fact, it is difficult to see why they should have been expected to concern themselves at all with the running of trains. It would have been impossible for them to know the time at which the trains would arrive, or their weight and character, and, although the foreman might have been expected to be intelligent enough to send out a flag while the bridge was disconnected, it would be much more prudent, as well as more natural, for the railway company itself to have a man on the ground, familiar with the running of the trains, and expert enough to judge when the bridge was safe or unsafe. It may be that railway companies should not be expected to go to so much expense and trouble where bridges are being repaired, but we hope that there are some companies which are willing to do so much for their passengers, and, if we can find out their names, we shall, for our part, travel in preference by their lines. Moreover, it seems to us a serious question whether a railway company is exercising due caution in hurling its heaviest trains, at a speed of thirty-five miles an hour, upon bridges which have been adjudged to be too weak to endure such strains safely, and are known to be in process of repair, by a method which necessarily reduces their resistance for at least half the time that the work is going on, to a point far below that required for sustaining even ordinary strains.

A SCHOOL of Applied Design for Women was opened last year in New York, at No. 200 West Twenty-third Street, and begins its second year September 18. It would be difficult to recommend the school more highly than to say that it is under the direction of such artists as J. Carroll Beckwith, B. C. Porter, and Frederic Crowninshield, seconded by Justice George L. Ingraham, of the Supreme Court, Dr. Brown, of St. Thomas's Church, and others. The course is not limited in length, but it is expected that pupils who have not already learned to draw will spend the first year in preliminary work. After the elements of drawing and the first part of the history of design have been mastered, as shown by examination at the end of the year, the pupil is allowed to choose the branch of applied design to which she wishes to devote herself, or may combine two courses if she prefers. At present, the regular courses include the designing of carpets, wall-papers, silk, furniture, book-covers and metal-work, architectural drawing, etching, illustration and lithography, and it is intended to add courses in glass-staining, interior decoration and fresco-painting. The cost of tuition has been kept as low as possible, and scholarships are awarded to the best students, which reduce the cost of instruction to little or nothing. If any of our readers should wish for further information, they may apply to the Secretary and Treasurer of the School, Miss Ellen J. Pond, 200 West Twenty-third Street, New York.

THE great competition for the Opéra Comique in Paris has had what we should think a very singular sequel. It is hardly necessary to say that a contest of that sort usually leaves a certain amount of discontent among the competitors, but, with us, the disappointed ones usually do their grumbling in private, while the Opéra Comique competitors have rushed before the public with their griefs in a manner quite without precedent. One reason for this is probably to be found in the fact that the jury was required by the Government to submit a report of its votes, and to give the reasons for its choice among the competitors; and another was that the designs were submitted under the real names of their authors, so that the jury were enabled, if they wished, to award the prizes to their personal favorites, as they would be sure to be accused of doing if they had the opportunity. Even thus, however, the affair might have gone off quietly, had not M. Charles Garnier, who was one of the jury, incautiously allowed himself to be questioned by a newspaper reporter. As the result of the interview, an article appeared in the *Figaro*, informing the public that M. Garnier was not at all surprised at the criticism which the decision had called forth, that he considered M. Bernier's design, which was awarded the first prize, to be unworthy of the first, or even of the second place; that he had not voted for it, and had energetically opposed the judgment in favor of it, and was very sorry that a different opinion had prevailed. He would not say, according to the reporter's story, that M. Bernier's plan was bad. M. Bernier was an artist of talent, but he had not understood the requirements of a theatre. There were, however, ten or twelve exceedingly successful

designs, so nearly equal in merit that the jury might almost have decided among them by lot. One of these, however, that of MM. Larche and Nachon, appeared to him better than the rest, and he had in vain claimed for it the first prize. This was certainly a very frank, not to say indiscreet, confession on the part of a member of the jury, and the *Figaro* article attracted general attention, but M. Garnier himself wrote a note the next day, declaring that he had taken no active part at all in the discussions of the jury; that although he thought M. Bernier's design was not the best, he had not attempted to influence the other members of the jury against it, and that in regard to the design of MM. Larche and Nachon, which he thought the best, and the jury placed second, he had kept entire silence, for the reason that its authors were personal friends of his, and he wished to appear entirely impartial.

THIS letter was followed by one from M. Francisque Sarcey, the famous critic, to the *Radical*, in which he denounced the choice of M. Bernier's plan as an "outrageous and brutal violation of justice," and disclosed what purported to be several interesting secrets from the consultations of the jury. Among other things, he said that Bernier's design, at the first general inspection, appeared so weak that it came very near not being included among the twenty-two designs which the jury considered worthy of a second look. In fact, it would probably have been eliminated, had not some one fished it out again from the pile of rejected ones, saying that Bernier was an official architect, connected with the School of Fine Arts, and that it would be a slight upon the Administration not to admit it to the final examination. M. Sarcey said that, not pretending to judge in such a matter, he had asked the opinion of several architects not concerned in the competition, all of whom agreed that the decision was shameful, while one of them told him that in the jury itself there was so much indignation at the result that one of the jury, who voted against Bernier, and who is a member of the Institute of France, said to another juryman, who would like to belong to the Institute, and who voted for Bernier, that, until then, if his name should come up for election to the Institute, he should, knowing his talent, have voted to admit him, but that he could never vote for any one capable of assisting to award the first prize to such a plan as Bernier's. Naturally, this tempestuous condition of the celestial minds stirred up the smaller lights of the profession, and M. Gaspard André, who had been awarded a fourth prize, wrote to another newspaper to express his opinion of MM. Duvert and Charpentier, who had also received a fourth prize, and whose proximity to himself on the ladder of Fame he seemed to find disagreeable. In regard to the artistic merits of the obnoxious design, he said he would not himself undertake to judge, but he had consulted several of his Parisian friends, who agreed that it ought to be ranked in about the sixtieth place, instead of the fourth; and in regard to its success in convenience of arrangement, as to which he was himself competent to judge, he thought that it should rank about as high as in artistic quality. It may be imagined that this sort of letter-writing is not calculated to promote good feeling among the competitors, and there seems to be some probability in a comment made by an outside architect, that this would be the last of the competitions, or, perhaps, the last in which decent French architects would risk their reputation. As to the merits of the case, we think that architects here would find it hard to choose between the plans of M. Bernier and MM. Larche and Nachon, both of which are published in the French professional journals. While the latter have an effective front elevation, and a good and simple plan, with a large auditorium, they gain space for the auditorium on the limited lot assigned to the building by corbelling out an immense staircase, about fifty feet long, and of something like six feet projection, on each side of the building, over the sidewalk, extending from the second floor level to the roof. Of course, this startling feature is of light iron construction, but, however fashionable it may be in Paris just now to have a street front liberally "bowwindowée," one can forgive a jury for not finding the style quite suitable for a State theatre. M. Bernier's plan, although it gives a smaller auditorium, and allots an unnecessarily large space to vestibules, is simple and straightforward, and has the great merit of being contained within four good stone walls, while the front, if not so effective as MM. Larche and Nachon's, is quite as interesting, and more dignified. M. Planat, in *La Construction Moderne*, makes the suggestion that Bernier, being connected with the Administration, received the votes of the officials on the jury, while Larche and Nachon were the favorites of the architects. On the first ballot, however, only three members of the jury, on which there were twelve architects, voted for Larche and Nachon's design, so that, supposing all the officials to have voted for Bernier, the suffrages of the architects on the jury were divided between five other competitors. In fact, far from being unanimously in favor of Larche and Nachon, the anti-Bernier faction, on the first ballot, gave four votes, their largest number, to the plan of MM. Duvert and Charpentier, the one which, as M. André discovered, ought to have been ranked sixtieth, and it was not until the second ballot that Blondel, and Duvert and Charpentier, disappeared from the list and their votes were found to be divided between Bernier and Larche and Nachon, raising the number of ballots for the latter to five, but giving a decisive majority to Bernier. How the squabble will turn out, it is impossible to say, but there is, so far as we can see, no evidence of bad faith on the part of any members of the jury, and not much evidence of bad taste, and it is a pity to have the decision of any jury, and, most of all, one so eminent, called in question in the public prints without good reason.

MR. FRANK H. MASON, our Consul-General at Frankfort, whose admirable consular reports have done honor, not only to himself, but to the country of which he is the thoughtful and patriotic representative, calls attention to the extraordinary progress which has been made of late years in Germany in iron and steel manufacture. It is well known that Belgian iron manufacturers have for some years competed successfully for contracts with English manufacturers in England itself, but the English iron-masters could console themselves with the thought that wages were very low in Belgium, and the Belgian work often rough and inferior. Within the past three or four years, however, German manufacturers have not only sold car-wheels, axles, wire and other finished ironwork in England, at lower prices than the English manufacturers could furnish them, but have exported immense quantities of these, together with iron and steel rails, to countries which lately depended entirely on England for their supply, while English exports of railway iron and steel have diminished from 1,000,000 tons per annum a few years ago to 467,986 tons in 1892. As no country in the world possesses such natural advantages for producing, manufacturing and exporting iron and steel as Great Britain, there must be some potent reason for the rapidity with which Germany, with inferior ore, a limited supply of coal and disadvantageous shipping conditions, has, in three or four years, taken away more than one-third of England's foreign market for goods which the English supposed that no one could produce and sell so cheaply as themselves. This reason Mr. Mason finds in the success with which the Germans have applied the theoretical knowledge in which they excel, and, especially, what he calls their "unrivalled chemical skill," to perfecting their metallurgical processes, and inventing new methods for utilizing waste products, or economizing material and labor.

THE *Builder* gives a little news from the Delphi excavations. It will be remembered that before the site of Delphi can be opened, the modern village of Castri, which is built on the ruins, must be removed, with its inhabitants, who must be provided for elsewhere. This work has taken some time, and, indeed, will not be completed until September, but in the meantime a little excavation has been done, with the result of discovering the Treasury of the Athenians, a small building, only ten metres long, which seems to have served as place of deposit for valuables belonging to Athenian pilgrims. The *Builder* says that not only is this discovery valuable, as affording a point the relationship of which to the other important buildings is known, so that future explorations can be laid out by reference to it, but it is encouraging to find that the Treasury fragments are so complete that the building might almost be reërected. This indicates that the ruins have not been used as a quarry, or despoiled by lime-burners, as has been the case in many other parts of Greece; and, if the other buildings prove to be in similar condition, the investigations will be of extraordinary interest.

A REPORT UPON THE LANDSCAPE ARCHITECTURE OF THE COLUMBIAN EXPOSITION TO THE AMERICAN INSTITUTE OF ARCHITECTS.[1]

THIS paper has been written at the request of the Institute, with the object of briefly accounting for such part of the preparation of the Exposition of 1893 as has come within the responsibility of the landscape architects, and as a contribution in this respect to a record of its genesis and development as a work of design.

No comprehensive definition of the responsibility of the landscape architects has been recorded, and as to what is implied by the name of their office different understandings are had. For this reason, something needs first to be said in explanation of the view which will herein be taken.

In the *Quarterly Review* of 1820, page 303, there is an article written by Sir Walter Scott, from which it appears that this master of words did not approve of the term "landscape gardening," which was then coming into popular use. His objection to it was that it tended to confusion between two classes of purposes, or motives of art, which could not well be blended together. To make this objection clear, it may be observed that the word garden comes to us from the same root with girdle, girth, garth and others to be found in every European tongue, all of which imply something limited, restrained and separated from what exists beyond or about it, or that is the cause of such limitation, restriction or separation. From remote times, the word in its various forms — English, Spanish, French, Italian, Scandinavian — has carried with it this idea of limitation and exclusion. We yet speak of "garden-flowers," meaning certain flowers exclusive of others. Taking up a book with the title, "*A Garden of Verse*," we should understand it to be a selection of verse. Being told at a farm-house that one of the family of the house is "in the garden," no countryman would think that this meant either simply out-of-doors, or in a stable-yard, or an orchard, or a common cultivated field, a grove, a park or a pasture. The word implies reference to a limited, defined and exclusive space, and it may be used in this way antithetically to the word landscape, the application of which is so comprehensive that it may take in houses, lawns, gardens, orchards, meadows, mountains and even the sky, with the stars to the remotest nebulæ.

The word landscape is often used by accurate writers interchangeably with the word scenery, as, for example, by Gilpin in his series of works on the scenery of Great Britain; also by Hamerton in a recent treatise on landscape written from the point-of-view of a landscape painter.

A distinction implied by the word landscape unfitting it to be compounded with the word garden is indicated by Hamerton when he says that: "Much of the comprehensiveness of natural scenery depends upon the degree in which mass appears to predominate over detail. In perfectly clear weather, a mountain does not look nearly so grand as when . . . its nearer details are only partially revealed amidst broad spaces of shade. So it appears with other elements of landscape — they lose in comprehensiveness as the details become more visible." Thus, for the enjoyment of landscape beauty, we are to regard the detail of what we see mainly as it affects the character and expression of masses, these masses being considered as elements of composition and perspective. On the other hand, for the enjoyment of garden beauty as such, we must scrutinize objects of detail discriminatingly. We must see roses as roses, not as flecks of white or red modifying masses of green.

Lastly, to understand aright the term "landscape architect," we must bear in mind that the word architecture is not limited in application to works of building. The Almighty is referred to as the Architect of the Universe. Plutarch writes of the architecture of a poem, meaning the plotting of it. "The architect of his own fortune" is an old proverbial term yet commonly used in our newspapers, and is applicable as well to a banker or a miner as to one whose fortune has been made by directing works of building.

In view of the considerations thus presented, when the office of landscape architects to the Exposition was created, what, in the absence of specific instructions, was to be understood as the leading duty of that office? The answer assumed by those to whom the title was applied was that their leading duty must be to reconcile the requirements of the problem which the directors had before them in respect to buildings, and means of access to, and means of communication between, buildings, with the requirements of pleasing scenery and of scenery which would be pleasing, not because of the specific beauty of its detail, but because of the subordination and contribution of its detail to effective composition of masses as seen in perspective.

Adopting such a view, the first thing to be noted in an account of the landscape architecture of the Exposition is this:

Immediately after the settlement in the Directory of the question of its own organization and rules, the question of a choice of sites came up, and it soon appeared that the debate of it was likely to be inconveniently prolonged. Thereupon the suggestion was made that expert counsel upon it might be desirable, and an inquiry was addressed to our office as to the terms upon which counsel could be had. Upon receipt of our reply by telegraph, we were asked to come to Chicago as soon as practicable. We did so by the next train, and, upon arrival, were presently taken to examine in succession seven proposed sites, three on the Lake and four inland.

The country about Chicago is flat and mainly treeless, except that in a few places there are small areas of dense woods. Its subsoil generally and its surface soil largely is a tenacious brick-clay. The climate in the spring is severe under successive alternations of southerly and northerly winds. The latter sweeping over the icy lake from the semi-arctic regions north of Lake Superior, the demand upon energy of vegetation is apt to be peculiarly trying. Accordingly, the choice of a suitable site was necessarily to be a choice of difficulties. Of the seven sites to which our attention was called, there was not one the scenery of which would recommend it if it had been near Boston, New York or Philadelphia. After our first general review of the premises, we adopted the opinion that nothing was to be found on any of the inland sites that could be weighed against the advantages, in respect to scenery, of the Lake Shore. Next, as to the sites on the shore, we concluded that, provided suitable means of transportation for goods and passengers between the town and the place could be secured, the northernmost of those proposed would be the best. By comparison with the most nearly competing site, it would require less outlay to prepare the ground and establish suitable means of interior transportation, water-supply, drainage and sewerage; the great marine commerce of Chicago would be passing in review before it at a suitable distance for spectacular effect; an arrangement of buildings simpler and much grander than elsewhere would be practicable, and the buildings would have a much better setting and framing of foliage provided by standing woods, fairly vigorous, and of sufficient height to serve as a continuous background.

But a committee of the Directory, taking up the question of transportation between this site and the central parts of the town, advised us that the railroad companies concerned could not be induced to make the outlay of capital required for such arrangements of transportation as we thought needful. Thereupon we fell back on the southernmost of the sites proposed on the Lake, which went by the name of Jackson Park.

Our report favoring this place excited much remonstrance. Opposition to it was concentrated in favor of an inland site near by, known as Washington Park, the advantages of which were thought to be so great and so obvious that a leading member of the National Commission assured us that after an inspection of the two sites in question, not one vote in ten could be got for our proposition. In the few days that intervened before the Commission met, we gave the reasons of our choice as well as we could in private conversation, but I do not think we accomplished much. In the end the Commission accepted our advice, not because a majority of its members understood the grounds of it, but because they could not be led to believe that we should have given this advice without having, as experts, sound reasons for doing it. The result was due to respect for professional judgment. Comparing this experience with some in my earlier professional life, I can but think that it manifests an advance in civilization.

Unquestionably, to common observation, the place was forbidding. At different periods in the past, sand-bars had been formed in the lake a few hundred feet from, and parallel with the shore. The landward one of these, gradually rising, would at length attain an elevation above the surface of the water. There would then be within this bar a pool accurately definable as a lagoon. Gradually, in this case, lagoons thus formed had been filled nearly to the brim with sand drifting from the outer bar, and had been turned into marshes. Thus nine-tenths of the surface of the site, or, in fact, all of it that had not been artificially made otherwise, consisted of three ridges of beach sand, the swales between which were more or less occupied by boggy, herbaceous vegetation. Upon the innermost two of the ridges vegetable mould had gathered and trees had sprung up in scattered groups. The most important of these trees were oaks. The situation being extremely bleak, the soil subject to be flooded, and the sandy sub-soil water-soaked, these had had an extremely slow growth. The largest were about forty feet in height. They were very feeble and many of them dilapidated through loss of limbs broken off by gales from the lake.

A more serious difficulty than any involved in this consideration was found in the circumstance that the level of water in the lake, and consequently in the marshes, was fluctuating, and this not only from day to day, as would be determined by winds at a distance drawing it off or backing it up, but its average level varied from year to year. An engineer who had been in charge of operations upon the Lake Shore, and who had had occasion to study the matter with accuracy, advised us that the probabilities were that in 1893, the average elevation of the surface of the lake would be four feet higher than it was at the time when we were studying the plan, or than it had been during the year before. It will be readily understood how difficult it became to forecast landscape effects in a region of low shores, without knowing within four feet what the level of the water was to be by which these shores were to be washed.

The Jackson Park site had, twenty years before, been selected as a site to be reserved for a public park. If a search had been made for the least park-like ground within miles of the city, nothing better meeting the requirement could have been found. It will, then, naturally be asked: Why was such a place fixed upon for a

[1] A paper by Frederick Law Olmsted prepared for the American Institute of Architects and read before the World's Congress of Architects at Chicago.

park? I have not the specific knowledge required for an answer, but I may mention that it is a common thing with town governments when they find bodies of land which, because of their special topographical condition, are not favorable to the ends of dealers in building-lots, to regard them as natural reservations for pleasure-grounds; to label them accordingly on their maps, and to refrain from ordering streets to be laid out across them. This is not peculiarly a Western custom. The sites for the Central Park, for the Morningside Park, for the Riverside Park, for the Mount Morris Park, for Tompkins Square, and, no doubt, for other public grounds in the City of New York, were thus selected. So was the site of the public ground in Boston, officially called the Fens, but popularly known as the Back Bay Park. Sites having been thus obtained, landscape architects are asked to contrive how pleasure-grounds can be made of them. It has been so, I believe, in London, conspicuously in the case of Battersea Park. And it may be remembered that the opportunity of making the Tuileries Garden in Paris occurred because, while the city had been building out about the place, the necessary ground had been held in reserve while the clay which it contained was being removed to be used for making roofing-tile. In the Millennium it may be hoped that landscape architects will be employed to select land with regard to the specific purpose for which it is to be used. When that is the case, the making of a park will be less costly than it is at present.

At the time the land and water of Jackson Park had been taken for a public park, I was in partnership with Mr. Calvert Vaux, and we were asked to devise a plan for making it available for a public pleasure ground, together with the site now known as Washington Park and the strip of land between them, now known as the Midway.

As the starting-point for the development of the proposition which we then made, the suggestion was adopted that dredging-boats might be employed, to begin at the lake and first reopen the old lagoons, taking the excavated material to be lifted out of their bottoms to form the basis of higher, more undulating and varying banks resting on the old sand-bars; next, to move through the Midway and so on to the inland park site, everywhere lifting out the material needing to be removed in order to open a channel in which they could float, and so shifting this material to one side or the other as to provide the base of varying shores, these shores to be afterwards covered with soil and landscape masses of vegetation.

When Jackson Park was chosen as the site for the World's Fair, the general landscape design of no part of the plan, of which the expedient I have described was the germ, had been carried out. In the Washington Park part of the scheme, a good deal had been done following the leading outlines of the plan, but with a modelling of surfaces and a choice of material and disposition of foliage looking to condition of detail rather than of masses, and with entire disregard of the elements of mystery through effects of aerial perspective, and the complicated play of light and shadow and of reflected tints in extended composition.

In the nominal carrying out of plans in the preparation of which I have had part there have often been sacrifices of the designs of these plans which have been mortifying and disappointing. In no other case, however, had the disappointment been so great as in this. Nowhere else had the opportunity for forming agreeable scenery been so lost. But, in the lagoon district, what little had been done had not been done unwisely.

Coming to consider what might yet be done with this same lagoon district suitably for the purposes of the Exposition, the question at once came up how far the general theory of the old plan for a public pleasure-ground to be formed upon it could be made available to the special purpose of the Exposition.

As a result of this consideration, we came to the conclusion that the element of the water-ways in the original plan being carried out, retaining-walls being built in various places for holding up the excavated material to be piled upon the shores, so that in these places terraces would be formed, the necessary buildings of the Fair could be advantageously distributed upon the surrounding sandy ridges.

Before making their formal report favoring the choice of Jackson Park for the site of the Exposition, the landscape architects took counsel with Messrs. Burnham & Root, presenting their views of the manner in which, this site being adopted, it should be used, and obtaining confirmation of them, more especially with reference to the expediency of distributing the needed large buildings upon the sandy ridges, and of spreading out these ridges suitably for the purpose by retaining-walls to be backed by the excavated material from the lagoons. It may be observed that, to accomplish this purpose in various localities where otherwise lagoons with shores of a natural character would become unsuitable for boats, it was thought best to give them the character of canals; that is to say, to make them formal and give their banks, which would necessarily be walls, an architectural character in harmony with the buildings to which, in a near perspective view, they would form foregrounds.

Mr. Burnham, in his report of operations, addressed to the President of the Exposition on the 24th of October, 1892, thus describes the process of forming the first complete graphic sketch illustrative of the design:

"After consideration of sketches made on the ground, . . . a crude plot, on a large scale, of the whole scheme was rapidly drawn on brown paper, mostly with a pencil in the hand of Mr. Root, whose architectural prescience and coördinating talent was of invaluable service to the result. The plot, formed in the manner described, contemplated the following as leading features of design: That there should be a great architectural court with a body of water therein; that this court should serve as a suitably dignified and impressive entrance-hall to the Exposition, and that visitors arriving by train or boat should all pass through it; that there should be a formal canal leading northward from this court to a series of broader waters of a lagoon character, by which nearly the entire site would be penetrated, so that the principal Exposition buildings would each have a water as well as a land frontage, and would be approachable by boats; that near the middle of this lagoon system there should be an island, about fifteen acres in area, in which there would be clusters of the largest trees growing upon the site; that this island should be free from conspicuous buildings, and that it should have a generally secluded, natural, sylvan aspect, the existing clusters of trees serving as centres for such broad and simple larger masses of foliage as it would be practicable to establish in a year's time by plantations of young trees and bushes. Because the water in the lagoons would be subject to considerable fluctuations, it was proposed that their shores should be occupied by a selection of such aquatic plants as would endure occasional submergence and yet survive an occasional withdrawal of water from their roots. Time pressing, the pencil, large-scale, brown-paper plot above described, with a brief written specification, almost equally sketchy, was submitted to the Corporation, and, after due consideration, on the 1st of December, 1890, was adopted as the plan of the Exposition."

The question may be asked: In what degree at this early period was the result forecast which has since been attained in respect to the effect of boats, bridges and water-fowl and overhanging foliage on the lagoons? The answer is that it was quite fully anticipated in a general way. The effects of the boats and water-fowl as incidents of movement and life; the bridges with respect to their shadows and reflections, their effect in extending apparent perspectives and in connecting terraces and buildings, tying them together and thus increasing unity of composition — all this was quite fully taken into account from the very first, and the style of boats best adapted to the purpose became, at once, a topic of much anxiety and study.

The next important step in the progress of the enterprise to which reference is here necessary was that taken by Mr. Burnham, which resulted in the meeting at Chicago of the Advisory Board of Architects, with Mr. Hunt as its Chairman. The landscape architects were made members of this board, and their general plan came up for critical review. Many suggestions for its amendment were made by the building architects, but in nearly all cases counter-suggestions were offered by others of them, and, the balances of advantages being weighed, the result was at length a cordial and unqualified approval of the plan as originally presented, and this was duly expressed by a resolution and report to the Commission.

The general plan was, however, afterwards modified in certain particulars. These particulars were the abandonment of a proposed outer harbor for which the landing pier now seen was substituted; the introduction of the Peristyle, and of the Colonnade at the end of the south transept of the main court. All of these changes resulted from suggestions of the building architects, cordially welcomed by the landscape architects.

The general plan was later modified in one matter, to its great injury. Two of our firm had visited the last World's Fair in Paris, while it was in preparation, under the guidance of its landscape architect. The third of our number, Mr. Codman, had passed several months in Paris, while the Fair was in progress. We all thought, and Mr. Codman was particularly strong in the conviction, that it was an unfortunate circumstance that visitors so generally entered the Paris Exposition at points and by ways not adapted either to give them a grand impression, or to provide a convenient point of dispersal for systematic observation. This in Paris grew largely out of the situation of the Exposition. There was no similar difficulty in the Chicago situation and the very first step in our revision of the old park plan in adaptation to the requirements of the Fair was to fix upon a focal point of interest to be regarded as the centre of design, and to so place this centre that conveyances of all kinds, by land and by water, the railways and the boats, both those of the interior and those of the exterior, should conveniently discharge visitors into it and receive visitors from it. That it should thus be made a place of general exchange, a place for obtaining information and guidance, as well as a place of departures and returns, a spacious court was designed; the Administration Building was placed in this court; the buildings likely to be most frequented were placed so that they would open from it; the intramural railway was to have its principal station in it; the whole interior water system was planned with a view to easy connection with and through it by the small boats.

All railways and all steamboats were to conveniently receive and discharge passengers through it. A union station was provided for with the latter object in view. We intended that the Administration Building, which stands in this court, and this railway station should contain the principal provision of guides and wheel-chairs and the central office of a system of offices of "public comfort" to be in telephonic communication with it. We did all in our power to have this arrangement carried out. The failure to carry it out has

added, in my opinion, to the cost of the Exposition and deducted much from its value. In reporting to you professionally, I have thought it necessary to say this, not in the least in a complaining way, but that it may go on record for the benefit of those who may have to deal hereafter with a similar problem. You will ask why we were unsuccessful? I do not fully know. I can only answer that our failure took the form of a failure of prolonged negotiations with the Illinois Central Railway.

At the period when the general plan was formed it was impossible to have building masses definitely in view except in the case of a few of the larger ones. Our instructions as to these were that a classification similar to that of the last Paris Exposition was to be contemplated, but that the buildings required under the classification would be a third larger than the corresponding buildings in Paris. We presumed that additional buildings would be wanted and that they would be of smaller but of varying size. For these presumed, but as yet undetermined, smaller buildings, we held three large spaces in reserve. First, for such as would be wanted for the live-stock exhibits, an area at the south end; second, for the distinctive office and "headquarters" buildings of the National and State Committees, an area at the north end; third, for miscellaneous exhibition-buildings of a smaller class, the strip of land called the Midway. We calculated that restaurants would be established in the great Exposition buildings, and that the terraces of some of these buildings would be occupied to a considerable extent with refreshment tables and chairs, under awnings. We did not suppose that there would be many small buildings scattered about between the main great buildings, nor do I think that it was at the outset contemplated by those in direction that there would be. Afterwards they were seen to be financially desirable.

Also, it is to be noted that it was our original intention and that this intention was fully set forth, to have what has since been called the Wooded Island, occupying a central position, held free from buildings and from all objects that would prevent it from presenting, in connection with the adjoining waters, a broad space in contrast with the artificial grandeur and sumptuousness of the other parts of the scenery. After a time demands came for the use of the island for a great variety of purposes, and at length we became convinced that it would be impossible to successfully resist these demands. When we reluctantly reached this conclusion, the question with us was which of all the propositions urged, if adopted, will have the least obtrusive and disquieting result? Probably we were fortunate in securing the occupation of the island only by the temple and garden of the Japanese, and for the display of horticultural exhibits. Nevertheless, we consider that these introductions have much injured the island for the purpose which in our primary design it was intended to serve. If they could have been avoided, I am sure that the Exposition would have made a much more agreeable general impression on visitors of cultivated sensibility to the influence of scenery.

With regard to the subsequent occupation of ground by smaller structures, especially such as are of the class called pavilions and concession buildings, many of these have been inserted without consulting us; places being often given them in which they intercepted vistas and disturbed spaces intended to serve for the relief of the eye from the too nearly constant demands upon attention of the Exposition buildings. As a caution to those who will manage the next affair of a similar class, it is best to record the opinion that the effect of these little structures among the larger has been bad. I can best show our judgment of it by saying that it had been our original intention to use on the grounds a great deal more of gardening decoration in various forms than we have. We had, at considerable expense, provided materials for the purpose, largely in the form of plants propagated and kept last winter under glass. But at last when the time approached for making the intended use of this material, the spaces of the Exposition grounds not occupied by the larger building masses and trees appeared to us to be everywhere already a great deal too much divided and disturbed by little features intended to be more or less of a decorative character. So much was this the case that, after consideration, and with reluctance, we concluded that our intended floral decorations would add so much disquiet to the already excessive disquiet of the scenery, and so detract from the effect of the more massive elements, that they must be abandoned.

One other modification of the original plan must be referred to. The administration at one time contemplated the introduction of a branch railway, by which Illinois Central trains would be taken from the Midway to the station upon the main court through the Fair ground. To give room for this branch road, we were required to change the position assigned to the Horticultural Building, reduce the breadth of the lagoon, and modify the outlines of the island. Afterwards the railway project was abandoned, but in the meantime work had been done compelling adherence to the unfortunate revision of the shores. It will readily be seen that the cramping of the water at this point has been a considerable loss, and that, had the advances and recesses of the foliage masses opposite the Horticultural Building been much greater than they are, a more picturesque effect would have been obtained.

Passing from matters of design to matters of construction: As to the more bulky preliminary operations of dredging and sub-grading, they were mostly affairs of large contracts, and, while we were constantly consulted, the preparation of details and the superintendence of the contractors' works was made by the Director of Works mainly the duty of the engineer corps. The same was the case in a still greater degree with respect to the often extremely difficult and delicate matters of drainage, sewerage and water-supply throughout the grounds. It is only necessary, then, to say with reference to these matters, as well as to those of buildings, that our coöperative relations have been of a character to be looked back upon with pride and congratulation. Really, I think that it is a most satisfactory and encouraging circumstance that it could be found feasible for so many men of technical education and ability to be recruited and suitably organized so quickly, and made to work together so well in so short a time. I think it a notable circumstance that there should have been so little friction, so little display of jealousy, envy and combativeness, as has appeared in the progress of this enterprise. Too high an estimate cannot be placed on the industry, skill and tact with which this result was secured by the master of us all, yet I venture to say that, considering the impromptu way in which Mr. Burnham had to go to work, and the extremely varied antecedents in the matter of education, custom and habit of those through whom he had to operate, equal success would have been possible only in a country which was in a high degree, socially as well as politically, a republic.

I have only to add a few statements in respect to that part of the work of which the landscape architects were placed especially and more independently in general superintendence.

On this point, I will observe, first, that we early recognized the importance of not entering upon undertakings which might lead to the requirement of outlays, the reasonableness of which could not be made plain to the Directory, or which we could not be confident that, in the progress of the work, the financial department would sustain. Also, we took well into account that various resources that would be available in any large capital of Europe would not, in Chicago, be at our command, and, further, that we should have to push much of our work very rapidly with unknown and untrained men. After completing operations of grading, draining and the supplying of suitable soils, we should have, for much of the ground, but one fall and spring for planting operations, for none of it more than two, and it is rare that a weak and sickly appearance is to be avoided in freshly-made plantations. We considered also that we had to deal with many inexactly known conditions — conditions, I mean, of climate, as of the occurrence of rains and floods and sudden inroads of severe frosts in the planting season; conditions of uncertainties as to how the bottom and banks of our excavations would behave, as, for example, how they would be affected by subterranean springs. To illustrate this latter hazard, I will mention that at important points, after our channels had been excavated, there were movements, slips and uprisings of the sandy bottoms, forming shoals, and, as the result of the subsequent re-dredging of these places, adjoining banks and slopes slid away and caved off. Through this process, and from the effect of ice which formed to the depth of two feet along the shores and remained late in the spring, we lost, in spite of all precautions, many thousand water-plants that had been collected, propagated and set with great painstaking.

From the start we took all these hazards and difficulties into account, and devised our design at all points so that success in what we aimed at would not greatly depend on exact and refined local particulars, but on masses and broad general conditions.

One main difficulty to be considered was that of making sure of the clothing of several miles of newly-made, raw, sandy shores with a clean, graceful, intricate, picturesque green drapery, varied in tints and pleasing in its shadows and reflections. We knew that we could depend but little on the ordinary commercial agencies for the materials required for this end, and within a week after the work was put under our direction we had begun the gathering, by special collecting agencies, of the plants required. We placed our dependence mainly on two classes of these: first, willows, chiefly of the shrubby sorts, but in large variety; second, herbaceous, bog and water-side plants, principally such as are commonly known with us as flags, cat-tails, rushes, irises and pond-lilies. Some of these were propagated on the Fair grounds; a few were bought from nurserymen and florists; much the larger part was obtained by parties organized and sent out for the purpose to various localities on the shores of lakes, rivers and swamps in Illinois and Wisconsin.

Altogether, we have planted on the shores of the lagoons one hundred thousand small willows; seventy-five large railway platform car-loads of collected herbaceous aquatic plants, taken from the wild; one hundred and forty thousand other aquatic plants, largely native and Japanese irises, and two hundred and eighty-five thousand ferns and other perennial herbaceous plants. The whole number of plants transplanted to the ground has been a little over a million.

Our chief executive in the immediate direction of working operations has been Mr. Rudolph Ulrich. He had never been employed under our direction before, but we had seen the results of rapid work carried on under difficulties by him, and had formed a good opinion of his abilities to meet emergencies. On the very day of our appointment, we telegraphed across the continent to ascertain if he would be available. Our message reached him at a moment when he happened to have just left a California work in which he had been engaged, and he was at once secured. It had been our policy to encumber him as little as possible with directions in detail, but to explain to him our aims and trust largely to his discretion as

to particulars. He has entered admirably into the spirit of the design, and the zeal, activity, skill and industry with which he has labored to carry it out cannot be too highly esteemed.

MODERN ASYLUMS FOR THE INSANE.[1] — V.

ADMINISTRATIVE BUILDINGS.

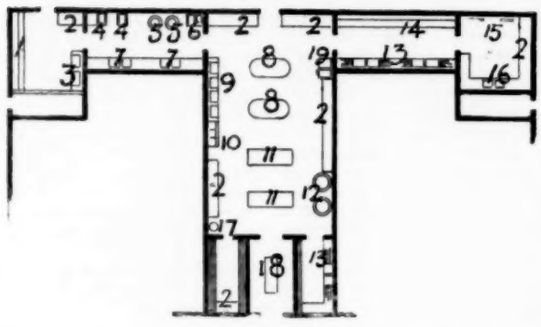

Fig. .

1. Slate-shelving.
2. Dresser.
3. Potato-bins.
4. Potato-washer.
5. Vegetable-boilers.
6. Vegetable Steaming-chest.
7. Vegetable-washer.
8. Boiling-pans.
9. Gas Roasting-ovens.
10. Hot Plate.
11. Table.
12. Tea Apparatus.
13. Sink.
14. Dresser-shelving.
15. Knife Machines.
16. Knife Sink.
17. Beef-tea Apparatus.
18. Hot Closet and Carving-table.
19. Warrenizers.
20. Rack-shelving.

THE buildings required in large asylums for the accommodation of the numerous officers and servants as well as the storage of supplies, and the provision of space for cooking, baking and laundry works and a variety of other purposes, must necessarily be of great extent, and in arranging this portion of his building the architect must carefully bear in mind, while designing the apartments to be occupied by the staff, that the social status of the officers, their mode of living and salaries vary to a great extent, and that he has to provide for the professional medical superintendent with a stipend of a thousand pounds or more a year, as well as the porter or laborer who is in receipt of a few shillings a week; provision must be made pro-rata for the accommodation and comfort of all classes, who tend to administer to the wants of the patients, a task, which even to the humblest workers, must be most trying and irksome. The architect should, therefore, use all his skill to alleviate the duties, as we have already shown can be done even in the judicious arrangement of wards, and in the department we are now considering he can do much to render the hours of rest from their labor hours of comfort, ease and refreshment to the officers of the asylum. So painful and distressing are the duties of many who are concerned in the administration of a lunatic asylum, that occasionally insanity has attacked those who have been long brought into contact with the asylum patients; this, therefore, compels the architect to afford all arrangements, whereby the officers, when off duty may be able to avoid, to some extent, the scene of their duties.

As we shall see in the course of this chapter, the resident medical officer is the leading light of a lunatic asylum: we must, therefore, first consider what are the best arrangements that can be made in designing and locating his residence in relation to his onerous duties and his few hours of respite. His house should, undoubtedly, be as nearly central as possible, that he may be equidistant from all parts of his little colony of patients; the nearer he can be placed to the ward occupied by the sick and infirm, the better, for it is in this ward his attendance is most frequently needed. As the doctor is compelled at all times and in all weathers to visit the asylum, his house should be connected with the main building by a covered and enclosed corridor which might be heated as well as the hall, from the general heating apparatus of the asylum.

Considering the social position and salary of the medical superintendent of an asylum, the residence for such an officer should contain a good-sized dining-room, a drawing or reception room, a morning or smoking room, as well as a room set aside for official work in the form of a combined study and office. In addition to the usual kitchens and offices there should be about seven or eight bedrooms, a good hall and staircase, bath-room, etc. We have said that the usual salary of this officer in English asylums is £1,000 a year, in addition to which he has his house-rent free, and coals, gas, or electric light, milk and vegetables from the asylum stores.

For planning the house and in choosing the location of the site, care should be taken that no windows or garden ground should overlook the airing-courts which are used by the inmates of the institution, for the scenes enacted therein are not always such as should be witnessed by the inmates of a private dwelling.

En route between the asylums and near the doctor's house there should be a cloak-room and lavatory, etc., for the use of the medical officer; this affords an opportunity for the doctor to remove the clothing he wears during his visit to fever or infectious patients before entering his home, if properly arranged.

It is well also to provide a conservatory of fair size, from which flowers could be obtained, not only for the domestic use of the doctor's household, but also for the wards occupied by the sick and infirm: cheerfulness is a great aid in relieving patients from their malady, and flowers should be most plentifully provided.

Sometimes a detached residence is provided for the first-assistant medical officer, as the salary of this official is, as a rule, moderate, say about £250 a year and other allowances; his income is not sufficient to support a large establishment, and his house must, therefore, be designed accordingly. Very frequently all the assistant medical staff have apartments or suites of rooms in the administrative buildings, with private sitting-rooms, but a common mess-room, billiard-room, etc. The salaries of these officers vary from £120 a year to £250 with board, lodging, washing, etc.

The assistant medical officers' apartments should be kept, for obvious reasons, as near the centre of the asylum as possible, but, at the same time, distinct from the quarters occupied by the nurses and matron and other female attendants. Special lavatories, bath-rooms and water-closets should be provided, and it is well not to omit the smoking-rooms where the junior doctors may assemble for social intercourse. A billiard-room, too, is a valuable adjunct to these quarters, but it is seldom that the architect is permitted to go to this extent in providing relaxation for the workers in the asylum; especially is this so when a billiard-room is erected in the asylum for the use of the patients, for then it is available for the staff also.

For the other superior officers — such as the steward of the asylum, the chaplain, clerk to the asylum, the engineer, matron, laundry-matron, head-gardener and a certain number of married attendants — detached or semi-detached residences or cottages should be provided, the size in proportion to the salaries received and allowances granted.

The officers of less importance, comprising the inspectors, assistant matrons, work-mistress, single attendants and nurses, the night-watchers, porters, messmen, gate-porters, cooks, bakers, master-tailors, shoemakers and many others, should be lodged within the precincts of the asylum.

It can be easily understood that in a large asylum there is a necessity to retain a staff of carpenters, bricklayers, painters, plumbers, etc., to maintain the fabric in good repair; this portion of the asylum staff is, however, not lodged in the asylum, and is paid by the day or by the week at the usual trade rate of wages, without allowances. There are, however, some who are employed as labor-masters among the active patients, who spend their time in working at a trade.

The superintendent of an asylum has usually started his career by entering the asylum as one of the junior medical assistants, and thus he is scarcely ever engaged in any other kind of practice. His appointment is, in all probability, gained because he has shown an aptitude in some smaller sphere for organization and maintenance of discipline among a body of subordinates. The medical superintendent of an asylum is the head of an establishment containing many hundred insane inmates and a numerous staff of attendant laborers and servants. The master's eye must be ever on the watch, and he must never be long away from any matter which is under his control; for this reason, it would be impossible for the chief medical officer to engage in any kind of scientific research which required continuous observation, because it would be impossible for him to seclude himself. He is usually at some little distance from a town, and is thus somewhat removed from a constant change of ideas with men of his own profession, except, indeed, through the press. His comfort depends upon satisfying his committee of management by the mode in which he discharges his administrative duties, and concerning which they, being, as a rule, men of business, are competent judges; but, in reference to the manner in which he performs his medical duties, they cannot be expected to discriminate between good and bad results.

It will be clearly understood from what we have here stated as to the duties of the medical superintendent that, not unnaturally, his administrative duties tend to take the place of and overshadow more and more what is purely medical, and that his ambition is to be the governor of an asylum that may be cited as a model of good management, rather than one which is in the van of scientific discovery.

In designing all classes of buildings, the architect should make himself thoroughly acquainted with the exact purpose for which the building will be used, the ways of the people who will occupy it, and then use all his skill in providing the best possible arrangements to help those who have to carry on their life's work within the building he designs. In no class of building can an architect make himself more felt as a lasting benefit to the occupants than in a lunatic asylum, and, in order that he may be armed with every probability of success in arranging his plans, he must study the ways and mode of living of those for whom he is providing. It is most desirable, therefore, that he should have an intimate knowledge of the position of the medical superintendent, for this knowledge must of necessity influence his ideas in very many particulars of the plan of the administrative department.

We feel we cannot omit, while dwelling upon this point of our subject, quoting Sir James Crichton Brown, the Lord Chancellor's Commissioner in Lunacy:

[1] By George H. Bibby, F. R. I. B. A., F. R. Hist. S., and Ernest A. E. Woodrow, A. R. I. B. A. Continued from No. 923, page 143.

"Of course there are in some asylums, at this time, very able scientific medical men as medical officers, and there is a little scientific work going on, but the medical and scientific work carried on in the largest asylum (nay, in all English asylums put together) cannot for one moment be compared, as regards its character or results, with what is done in the smallest London hospital; and a large proportion of the cases that are admitted into county asylums in England do not get medical treatment at all; it is not attempted. Then, in regard to what is called 'moral' treatment — that is to say personal influence, occupation, amusements and the influence of surroundings, instead of this being carried out individually, as of course it ought to be, and adapted to each case, it is carried out in a wholesale way. Instead of being fine hand-painting, it is slop dashery. Amusements are provided and crowds of patients are sent to them. I believe, on the whole, the effects of even this imperfect system are very beneficial, but the treatment is not carried out on true principles. The duties devolving upon the medical superintendent are so numerous — he is called upon to attend to the choice of the staff, he is responsible for the farm, for the commissariat, and for the clothing, and these and other functions interfere very much with his medical duties. Then as a matter of practical experience, the medical superintendents of England have found that the Committees of Magistrates, who are their masters, are very much

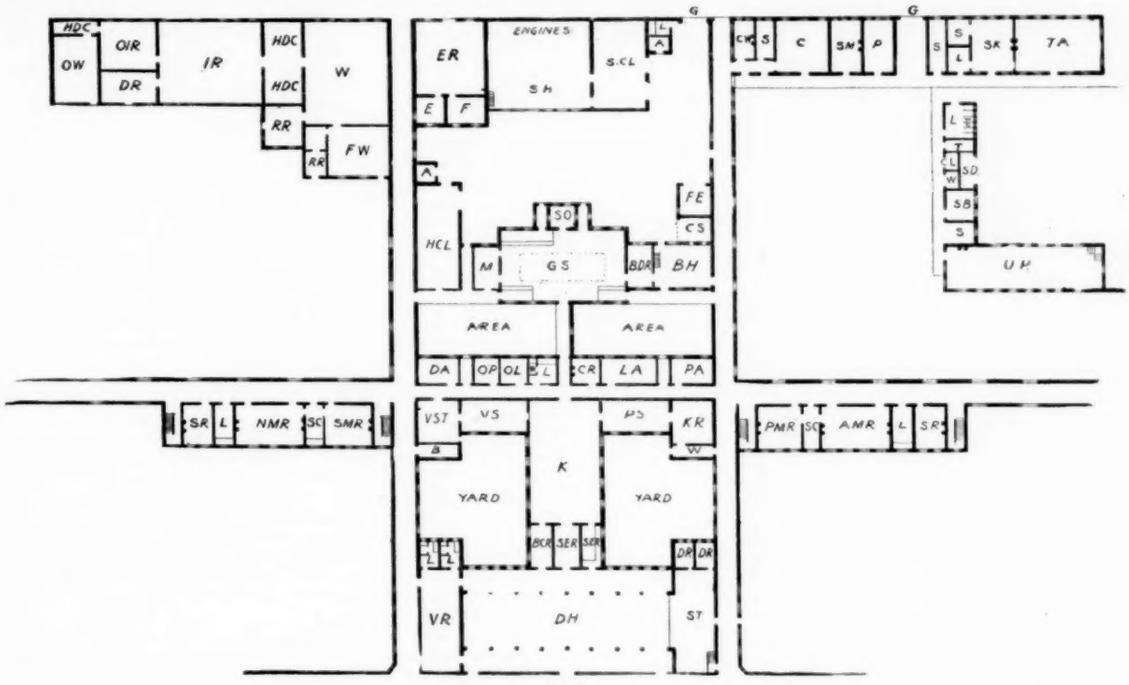

Fig. 2.

O W.	Officers' Wash-house.	E R.	Engine-room and Dynamos.	Sm.	Smith.	S C.	Scullery.
O I R.	Officers' Ironing-room.	E.	Engineer.	P.	Painter.	P M R.	Porters' Mess-room.
D R.	Delivering-room.	S H.	Stoke-hole.	S K.	Store-keeper.	K R.	Knife-cleaning Room.
H D C.	Horse Drying-closet.	S C L.	Steam Coal-cellar, (200 tons).	Ta.	Tailor.	D R.	Dressing-room.
I R.	Ironing-room.	L.	Lavatory.	T.	Tools.	S T.	Stage.
W.	Wash-house.	A.	Ashes.	S D.	Shed.	D H.	Dining-hall.
R R.	Receiving-room.	G.	Gate.	C L.	Coals.	V R.	Visiting-room.
F W.	Foul Linen Wash-house.	C W.	Clerk-of-Works.	W.	Wood.	K.	Kitchen.
		S.	Store.	S B.	Store Baskets.	B C R.	Bread-cutting Room.
		C.	Carpenters.	U P.	Upholsterers.	S E R.	Servery.
				S R.	Spare-room.		
				A M R.	Attendants' Mess-room.		

P S.	Pot Scullery.	F E.	Fire-engine.		
V S.	Vegetable Scullery.	C S.	Coke Shed.		
V S T.	Vegetable Stores.	B H.	Bake-house.		
S M R.	Servants' Mess-room.	B D R.	Bread-cooling Room.		
N M R.	Nurses' Mess-room.	D A.	Dairy.		
H C L.	House Coal Store, (150 Tons).	O P.	Officers' Pantry.		
M.	Meat Pantry.	O L.	Officers' Larder.		
G S.	General Store.	C R.	Cooks' Room.		
S O.	Steward's Office.	L A.	Larder.		
		P A.	Pantry.		
		B.	Brushes.		

better able to appreciate the way in which they carry on the farm and attend to the finances or the general administration of the establishment than the way in which they do their medical work. This latter the justices are scarcely capable of judging of, and it used to be not an uncommon thing, in county asylums, for a young medical assistant, fresh from the schools, who had perhaps never seen a case of insanity in his life, to be put into one department and given charge of it — many hundreds of cases being completely under his medical guidance, while his chief, the superintendent, devoted himself to building or farming, and sometimes did not visit the wards for long periods together. I remember a case in a large asylum in the North, where a woman who had been in the asylum for four months, asked when the medical superintendent came into the ward, 'Who is that gentleman?' She was told he was the medical superintendent. 'Indeed,' she said, 'I thought he was the architect, he only comes when the chimney smokes, or the walls want papering, or something of the kind.' There used to be a great deal of that sort of thing, there can be no doubt about it.

"No one who is familiar with asylums in this country can dispute that medical superintendents have devoted themselves very largely to administrative work, and have been obliged to do so. When I was at the head of the West Riding Asylum, I had to sign checks for £40,000 a year. I had a staff of 200 nurses and attendants under my control, a large farm, a butcher's shop, a bakery and a brewery, weaving-sheds, for we wove all our own cloths and made our own clothing, and all that I was responsible for. The magistrates looked to me to insure efficient management of all these departments and it was with the utmost difficulty I succeeded in getting any time for strictly medical and scientific work."

Captain James: "And you consider the medical superintendent ought to be relieved from all drudgery?"

Sir James Crichton Browne: "I do as far as practicable. I think that in the county asylums in England which are at distances from towns and medical schools, you must have a single medical head in charge, although the medical superintendent ought to be relieved to some extent of routine drudgery. But in London, near our great medical schools, the conditions are entirely different, and there is certainly room for an asylum conducted on the hospital system."

Until recent years, while ample provision has been made in asylums for the recovery of large numbers of patients, under the influence of favorable surroundings, small opportunity has been given for the establishment of sound principles underlying the changes which lead to insanity and the judicious application of the same.

We have dwelt at considerable length upon the position of the medical superintendent. In actual practice, the architect who is entrusted with the erection of a large asylum will always find it of the greatest importance to have facilities for consulting from first to last a well-experienced medical officer, and it would be well, when a new asylum is projected, that the medical officer should be appointed to the asylum *before* it is erected. If this were always done, much loss and trouble would be avoided in alterations, etc. We have known medical superintendents of high skill in planning and architectural work, and can well recollect (although a quarter of a century has passed away) a great authority on insanity, seated in his architect's office, doing draughtsman's work as the most expeditious mode of conveying his instructions. This gentleman was a great expert of his day, and, sorrowful to tell, he destroyed his own life, and became a remarkable example of the fact (to which we have referred) that contact with the insane is an occasional source of absolute danger to the mental powers of the wisest and best of men.

Architects are too often apt to disregard the opinions and ideas of their clients, and too anxious to have their own way, but the architect who will not endeavor to bring his asylum into conformity with the wishes of a thoroughly competent medical superintendent

will have to regret his omission before the end of his work, but, of course, in matters purely architectural the architect must be paramount.

The matron, who is usually a well-paid officer of the asylum, must have a private house or separate apartments in the asylum. As in the case of other important representatives of the staff, she should be located as near to the centre of her duties as possible, within easy reach of the sewing-room, laundry and other places over which she has more or less control, in juxtaposition to the portions of the institution occupied by the female patients, and within easy access to the rooms set apart for female attendants.

It has been suggested that members of the medical staff should give instructions to the attendants by means of lectures. For this purpose a pathological laboratory and museum might with advantage be arranged as a lecture-hall, and, at the same time, provision made for photographing the patients upon admission, to form a record of their appearance, which process could be repeated from time to time.

The mortuary and post-mortem rooms should be associated in the same block as the pathological museum, and this arrangement has obvious advantages.

Near the chief entrance to the asylum there should be a good board-room for the asylum committees to hold their meetings in, and adjoining this should be the offices of the superintendent of the asylum, the clerks' offices and hall-porter's room. The waiting-room for the visitors should also be in the vicinity of the entrance, and be

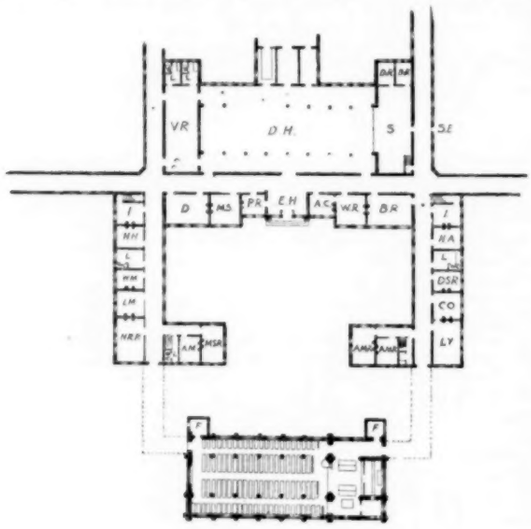

Fig. 3.

I. Inspector.
H N. Head-nurse.
L. Lavatory.
W M. Work-mistress.
L M. Laundry-mistress.
N R R. Nurses' Recreation-room.
A M. Assistant Matron.
M S R. Matron's Sitting-room.
D. Dispensary.
M S. Medical Superintendent.
P R. Porter.
A C. Asylum Clerk.
W R. Waiting-room.
B R. Board-room.
H A. Head-attendant.
D S R. Dispensing-room.
C O. Chaplain's Office.
L Y. Library.
A M R. Assistant Medical Officers' Sitting-room.
F. Fits-room.
E H. Entrance-hall.
D H. Dining-hall and Recreation-room.
K. Kitchen.
V R. Visiting-room.
D R. Dressing-room.
S. Stage.
S E. Scenery Entrance.

provided with lavatories, etc., near at hand. The whole of this block and the main entrance is frequently located close to the large dining-hall, so that the waiting-room for visitors may at other times become the ante-room to the hall when it is used in its capacity of entertainment-hall for concerts or theatricals.

The great dining-hall is always the largest room in the asylum, for it has the dual usage of dining-room and concert-hall, in which dramatic performances are also given. This room demands some architectural pretensions, even in pauper asylums; it should be of good proportions, well lighted and ventilated, and provided with ample means of exit. The arrangements should also be such that the attendants may have ready access to all parts, and be able to pass to and fro without disturbing the audience or performers.

The means of precaution adopted to prevent fire and panic in an ordinary theatre or concert-hall should be augmented to a great extent in the entertainment-hall of a lunatic asylum, for where the excitability of a sane audience is known to be so great as to cause panic at the least alarm, the peculiar mental condition of the patients of an asylum may be expected to be far more ready to cause them to utter cries of fear and cause panic. In the arrangements, therefore, of the hall, the architect should give special care for the safety of the patients, and not forget that the performers, as well as the audience, include patients.

As the hall is used for a dining-hall as well as theatre, the seats cannot be fixed to the floor; but the chairs should be securely fastened in lengths, so that they may not be easily overturned, and become obstructions to the gangways and exits. The gangways should be at frequent intervals, a gangway serving every six or eight seats, and they should lead in the direct line of an exit. The width of the gangways may be somewhat the same as for an ordinary concert-hall, namely, three feet, and the exit doors, which should be arranged at both sides of the hall, should be four feet six inches wide, and have no fastenings on them, except such as would yield to pressure from within; the doors should, of course, open outwards.

Fig. 2.

E. Engine.
S. Stokery.
C. Coals.
B R. Bread-room.
B H. Bake-house.

1. Sink.
2. Kneading-machines.
3. Working-board.
4. Oven.
5. Rack-shelving.
6. Moulding-board.

The performances on the stage in an asylum, in spite of the malady from which the patients suffer who take part in them, are frequently of a finished nature, and the stage should be furnished with the usual accessories appertaining to a small theatre. It is not our intention to repeat in this article, what has already appeared in the *American Architect* from the pen of one of us, as to the necessary precautions which should be observed on the stage of a theatre, but we must insist upon the need of the observance of every detail of care advocated in the articles on the subject which have appeared in this journal, and strongly recommend above all things caution in the manipulation of the scenery, the provision of the stage illuminant, and the fitting of an iron or fire-resisting curtain between the stage and the hall proper, which of course must be separated by a brick proscenium wall passing through the roof.

The attendants should have ready access to the stage, as well as to all parts of the auditorium and should not be even excluded from the dressing-rooms — this the architect should bear in mind. A gallery is sometimes found requisite, in the great hall, for the accommodation of visitors and strangers, but never should there be any seats for the patients above the ground-floor level. To place any portion of the audience who are mentally afflicted in a gallery is decidedly wrong, as there is a danger of their throwing themselves over to the floor below in moments of excitement. Access for the patients to the gallery should be rendered impossible. A gallery is often found useful as a place for a band of musicians when dances are given in the hall.

Referring now to the great hall in its capacity of a dining-room, the designer of the plan of an asylum must so locate his serving-rooms, kitchens, etc., that ample means may be obtained for the ready provision and service of the various meals, and the easy return of the crockery, etc., to the sculleries for washing-up. An arrangement having due regard to this end is shown in the annexed diagram, Figures 1 and 2.

Figures 1, 2, 3, 4 and 5 show an arrangement of the portions of the administrative portions of an asylum which we are describing to our readers: a careful study of these diagrams will perhaps convey more than we have been able to explain in words, and depict many requirements and detailed arrangements necessary, which we may have omitted to mention.

Figure 1 illustrates a general plan of the arrangement of the kitchens, with all the necessary fittings for the preparation of the food for the general body of the inmates of this class of institutions. This kitchen it must not be forgotten is provided in addition to the separate ward-sculleries referred to in a former number of these

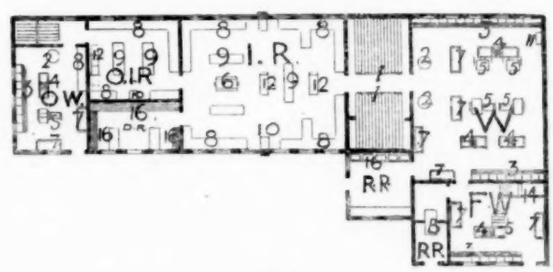

Fig. 5.

O W. Officers' Wash-house.
O I R. Officers' Ironing-room.
D R. Delivering-room.
I. R. Ironing-room.
W. Wash-house.
R R. Receiving-room.
F W. Foul-linen Wash-house.
1. Horse Drying-closet.
2. Hydro Extractor.
3. Washing-tanks.
4. Strainer and Rinser.
5. Washing-machine.
6. Calender.
7. Soaking-tank.
8. Ironing-board.
9. Table.
10. Ironing-stove.
11. Liquor-tank.
12. Mangle.
13. Disinfector.
14. Steeping-pit.
15. Sorting-bins.
16. Sorting-racks.

articles, where special, or invalids' food is prepared for the use of the patients who are unable to attend the meals in the great hall.

The large kitchen should not be less than eighteen feet or twenty feet in height, with good top-lantern lights, and louvered ventilators for taking off the heat, steam and smell of cooking. The floor-area should be so arranged as to allow ample space to pass around and

above the boiling-pans, stoves, boilers, ranges, tables and other cooking apparatus. The position and every fitting is fully indicated in Figure 1, by number, in what has been found the best position for the purpose for which each fitting is intended.

In many of the asylums much of the cooking is done by steam or gas, but the architect should never forget to provide an open coal fire for roasting purposes.

Figure 1 shows the most modern method of arranging the tea and coffee apparatus, the Warrenizers, etc., under steam-jackets, but we will not dwell now at any greater length upon this branch of our subject, as it will be our duty in a subsequent article to consider the important factors of cost and material with regard to this portion of an asylum.

In the annexed diagram (Fig. 1) it will be observed that between the kitchen and the great hall are shown three rooms, devoted to the purposes of the service, one being a bread-cutting room, one a general serving-room and one a carving-room in which a hot-plate is provided upon which the meat would be carved. In the same diagram will be seen an arrangement for the vegetable kitchen, wash-up sculleries, knife-cleaning room and vegetable stores, etc., at the back of the general kitchen; beyond these again are the pantries, larders and the other necessary offices of the cooking department, no mean portion of an asylum, and one requiring most careful study by the architect.

The position in which the whole of the kitchen block should be placed is certainly a central one with a view of supplying the whole of the asylum generally, at the cost of the least amount of labor, and with ready access to the stores department.

This last remark leads us to another important department, the stores of the asylum, a department whose extent is little appreciated by those who are not cognisant with the detail of asylum management.

The areas and cubical spaces required for the general stores of a large asylum are probably much greater than the majority of architects who have not had experience in such work might expect, we therefore give a list of the principal items of food and clothing served out during one year at Hanwell Asylum, together with particulars of the quantities required. A large portion of the clothing and bedding is manufactured or made up by the patients, and, of course, as this work progresses, ample space for the storage of the work (after being made up) must be provided as well as for the raw material.

HANWELL LUNATIC ASYLUM.

PROVISIONS CONSUMED.

Average number of Officers and Servants	225		
" " " Male Patients	750		
" " " Female Patients	1,136		
	2,111	Year ending 31st December, 1889.	Year ending 31st March, 1890.
Meat — Beef and Mutton	lbs.	266,156	267,101
Australian and Corned Beef	"	24,791	25,851
Extract of Beef	"	1,207	1,281
Bacon	"	33,986	33,868
Pork	"	24,876	25,828
Fish	"	56,791	57,489
Bread	"	794,974	798,874
Butter	"	40,653	40,277
Cheese	"	33,292	32,866
Cocoa	"	7,847	8,229
Coffee and Chicory	"	4,678	4,465
Eggs	No.	160,792	155,615
Flour	sks.	2,202	2,193
Malt	qrs.	435	442
Hops	lbs.	3,688	3,654
Oatmeal	"	5,916	5,982
Rice	"	4,310	4,396
Arrowroot	"	4,435	4,530
Sago	"	2,538	2,620
Currants	"	3,843	4,043
Raisins	"	1,571	1,474
Scotch Barley	"	1,292	1,256
Potatoes	bush.	7,948	7,959
Other Vegetables	"	13,210	13,414
Milk	gals.	46,451	47,797
" (Condensed)	lbs.	7,486	7,742
Sugar	"	58,890	59,756
Tea	"	10,915	11,026
Treacle	"	16,408	17,347
Beer	gals.	90,173	90,065
Porter and Ale	pts.	33,311	32,893
Wine	"	3,238	2,883
Brandy	"	2,997	3,058
Gin	"	182	165
Whiskey	"	595	601
Lemonade	bots.	81,732	79,200
Soda water	"	10,920	13,332
Oranges	No.	11,162	11,142
Lemons	"	6,908	7,206

From the above figures it will be at once seen that the stores and provision department demand a careful and thoughtful consideration, and that the steward and store-keepers of a large asylum must be provided with extensive conveniences, not only for stores, but also for the examination, weighing and for the reception and dispensing of the same, and these arrangements should be such that trades-people shall not necessarily traverse portions of the asylum occupied by patients. The stores should be approached in such a manner that the sexes, patients and attendants shall be duly separated.

It is a good plan in a general store-room to provide for a gallery on all sides, with a top light serving for galleries and ground-floor, thus leaving plenty of wall-space for shelves and cupboards, which space would otherwise be occupied by windows. On the ground-floor extensive counter accommodation is requisite, and there should be a shed or room for the reception of empty packing-cases, sacks, waste, etc. If the coal stores are near to the general stores, it would be advisable to provide a weigh-bridge, to carry about eight or ten tons, and this might well be near to steward's or store-keeper's office. The quantity of coal to be stored varies very much according to the distance of the asylum from the sources of supply, but a liberal provision of space should be made by the asylum architect and the supplies of house and steam coal should often be equal to at least a quarter of a year's consumption.

The following list shows the quantity of clothing and bedding used in one year in the Hanwell Asylum, where there is a total population of 2,111 persons, including attendants, but neither the preceding list or the following gives a complete idea of the infinite number of articles for which the architect must provide convenient storage-room.

HANWELL LUNATIC ASYLUM.

A RETURN OF CLOTHING, BEDDING, ETC., ISSUED.

MALES.	Year ending 31st December, 1889.	Year ending 31st March, 1890.	FEMALES.	Year ending 31st December, 1890.	Year ending 31st March, 1890.
Cloth and Cord Coats	753	733	Aprons and Pinafores	469	625
" Coats (locked)	....	....	Bed Gowns	328	344
" Waistcoats	641	672	Shifts	927	991
" " (tied)	4	9	Drawers	136	176
" and Cord Trousers	1,121	1,028	Stockings	1,8 9	1,845
" Capes	13	22	Handkerchiefs	280	289
Canvas Coats	4	10	Gowns	1,398	1,481
" Waistcoats	7	12	Flannel Jackets	405	425
" Trousers	7	10	Petticoats	907	917
" and Ticken Frocks	79	118	Cloth Boots	1,046	1,157
Flannel Drawers	396	289	" Shoes	81	97
" Jackets	763	590	Leather Boots	1,512	1,498
Handkerchiefs	2,852	2,755	" Shoes	348	348
Neckerchiefs	1,735	1,678	Shawls, Mantles, and Cloaks	490	550
Hats and Caps	1,235	1,406	Bonnets	823	900
Braces	326	366	Sun-hoods	157	163
Gloves	151	151	Caps	240	239
Shirts	1,299	1,347	Gloves	95	75
Stockings	1,693	1,794	Stays	263	249
Leather Boots	1,033	985	Velvet Boots and Shoes	....	....
" Shoes	26	27	Canvas and Ticken Frocks	34	35
Cloth Boots	742	740	Mattresses	250	199
Canvas Boots	2	4	Bolsters	56	92
Mattresses	127	102	Strong Rugs	71	69
Bolsters	105	59	Blankets	375	349
Strong Rugs	92	102	Rugs	207	187
Blankets	531	491	Sheets	68	686
Rugs	157	179	Pillow-cases	445	458
Sheets	563	555	Mackintosh Sheets	66	73
Pillow-cases	319	288	Canvas Bedsackings	227	213
Mackintosh Sheets	102	108	Towels	339	368
Canvas Bedsackings	71	66			
Towels	595	750			

The construction of the various receptacles for all stores must be such as to facilitate the immediate delivery of everything required, and with due attention as to heat and cold, dryness or moisture, or their exposure, or otherwise to the atmosphere.

In every asylum where female patients are kept, it is of importance that the laundry should be used, not only for its specific purpose, but also as a direct means of benefiting the patients and providing them with an employment tending in many cases to a relief or cure of their unsound mental state; for this reason it is often desirable to introduce machinery and labor-saving appliances but very sparingly, if at all, and where machinery is introduced to any extent, it must be very carefully protected and fenced off from the patients who might otherwise injure either themselves or others.

We find in the Hanwell Asylum, to which we have already referred, that 241 women were at one time employed in needlework, while 70 women were occupied in the laundries, with the addition of 9 male patients who were also engaged about the wash-houses. From this it will be seen that the laundry is looked upon in this asylum as an important occupation for the patients.

The laundry is usually under the direction of a laundry-mistress and a few laundry-maids, and is frequently divided into three departments; the general patients' laundry, the *foul* wash-house and the officials' laundry.

But in a very large asylum there may be separate laundries for each sex of patients, for each sex of officials, as well as a wash-house for foul linen, and provision for an infectious or fever wash-house in addition. Figure 5 shows an arrangement of the laundries.

Owing to the filthy condition in which many patients are often found, special precautions have to be observed, and a large portion of the clothing has to be cleansed in a separate apartment. A good plan is to provide a reception-room with a disinfecting-chamber, through which all the very foul linen must pass before it can enter the wash-house. This chamber should contain a steeping-pit, soaking-tanks, washing-tanks, strainers and rinsers, and one or more washing-machines. The garments thus cleansed may be then passed into the general wash-house.

The general wash-house should be provided with at least one receiving-room, but sometimes two are arranged, one for the clothing

of each sex. The fittings requisite, as shown in Figure 5, are sorting-bins, and one or more tables with space for baskets, etc. The large wash-house must be fitted with hydro-extractors, washing-tanks, strainers and rinsers, washing-machines and numerous troughs, liquor tanks, etc. Between the wash-house and the ironing-room there must always be an ample provision of horse drying-closets, heated by steam-pipes or hot-air. The ironing-room should have ironing-tables, ironing-stoves, calenders, mangles, etc.; beyond this there should be one or more delivering-rooms, with sorting-racks and space for baskets to be filled and packed.

The officers' laundry should have a separate horse drying-closet, hydro-extractors, washing-tanks, strainers and rinsers, and washing-machines, but unless the asylum be a very large one, it is not necessary to have a separate apartment for ironing and finishing. Tables, however, for this purpose should be provided in the officers' laundry. The architect must not forget that there should be ample space left for drying-grounds.

We do not here give a detailed description of the appliances, as the description of these will be better placed with the details of the fittings for the kitchen, sculleries, engine-room, etc.

The bake-house (see Fig. 4) should be so arranged that the whole of the firing-up can be done from the outside, in order to keep everything within clean and pure.

The fittings should include a sink, kneading-machines, working-boards, ovens (with or without rolling-plates to bring out a whole batch of bread) rack-shelving, tables and moulding-boards. Adjacent to the bake-house should be a room for cooling the bread, and it is a good plan to provide shelves framed so as to be movable on wheels, so that when the bread is once placed on the shelves to cool, it need not be touched until it is wanted, as the shelves with the bread on can then be wheeled right away to the bread-store, and the empty shelves returned in place thereof. The floor above the bake-house may be used as a flour-store, with hoppers for discharging the flour in given quantities below. Self-acting cisterns should be provided for the supplying of a defined amount of water to mix therewith. This arrangement avoids much manual labor, an object which the architect should ever have in view, unless there be a distinct advantage in making an occupation for patients who otherwise might be unemployed.

In our next paper we propose to describe other portions of the administrative buildings, the workshops, employment rooms, etc.

(To be continued.)

ITALIAN CITIES.[1] — IX.

VENICE. — I.

THE Italian Renaissance is not a phenomenon whose merit must be attributed exclusively to the aptitude of the inhabitants of Italy. The Italians are perhaps more highly endowed than any other people for entertaining grand intellectual conceptions for high artistic creations; this, at least, is what is generally said, but I profess to hold a different opinion myself. Without denying the peculiar capacities of this nation, I am profoundly convinced that each people can have its own manner of being artistic, and will be so when its hour comes. It was thought for a long time, for example, that the Swiss, so serious in political affairs, so practical, so positive, so active in commerce, so adroit in exploiting the natural beauties of free Helvetia, were incapable of conceiving and creating delicate works. They were reproached with the heaviness of their mountaineers, with that slow-moving spirit which is peculiar to people removed from the grand intellectual currents, and whose brains, possessed by narrow and unimportant preoccupations, cannot experience those warm impulses without which there can be no artistic life; and yet Switzerland is beginning to have a literature, a poetry, and the day may not be far distant when it will also have its art. In order that this phenomenon may arrive, it will only be necessary to await the moment when the Swiss temperament shall develop under the contact of civilizations which surround it; and when its native torpor shall be overcome by the labor and concentration, without which natures the best organized see extinguished those germs with which Providence has dowered them.

The Anglo-Saxon race, is it not itself in the same degree as the Helvetian people, a race practical and conservative *par excellence*, and yet it also has had, and for a long time, its painters, its poets, its musicians? Why? Because more open to contact with other races who have already an artistic past, more accessible by its education, its learning, to the souvenirs and intellectual traditions, which are, as it were, the classical source of inspiration, it has been able to give a free outlet to those faculties of idealization with which its character was provided. I am certain that, all question of heredity being set aside, what I say here of people I might also almost say of individuals, and that every man, exception of course being made of intellectual deformity, can be an artist after his fashion, on condition that he is placed amid favorable surroundings for the accomplishment of his metamorphosis, and that his being, habituated to living a corporeal life, may perceive horizons beyond which open the heavens which illumine our dreams.

That which has made the artistic glory of Italy, independent of the personal disposition of its inhabitants, is that it was placed at that spot of the globe where must converge all the grand human currents, and where must be made over anew the débris of civilizations that had passed away. After the Phœnicians, the Carthaginians, the Greeks, without speaking of anterior races, which brought to the West the first glimmers of Asiatic civilization, we have seen flow back toward the centre of the peninsula all the spoils which triumphant Rome had ravished from conquered races. It was in the southern part of the peninsula that came to meet its annihilation, after its defeat, the dying Greek civilization. But that which undeniably proves the truth of what I advance is the fact that the elements which have served to determine the Italian Renaissance remained during long centuries under the eyes and in the very hands of that people, which at the proper moment was to draw from them so marvellous a *parti*.

For how many ages have the Italian monasteries guarded under the dust of their archives Greek manuscripts, whose perusal formed the intellectual education of the humanists who have, without contradiction, been the fathers of poetry in Italy, and the precursors of the Renaissance! Were not those bas-reliefs, which served as models to Pisano, and whose study prompted that grand sculptor to give to sculpture a new direction, those bas-reliefs, without which, consequently, Italy would not have had, perhaps, a Michel Angelo or a Donatello, were they not in Italy for several centuries, when the grand Niccolo conceived the idea of examining them closely, of analyzing them, and from them, as it were, deriving a book of evangels for a new school? The Italian monks spent a long time side by side with these manuscripts, without suspecting their value, merely casting upon them disdainful glances. The stone-cutters, who blocked out the rude columns of old Byzantine cathedrals, seated themselves (who knows how many times) upon these very bas-reliefs, without suspecting that they were touching elbows with *chefs d'œuvre*, and that these broken marbles contained the germs of an artistic efflorescence which would make the glory of an entire nation and renew the genius of the Western world.

If the gift, the genius, which pushes a people towards artistic idealities were truly innate, as is pretended, in the inhabitants of the Italian peninsula, and must be considered the peculiar appanage of certain privileged nations, the abundance of subjects for inspiration should have forced the Italian people to have disclosed themselves long before, and the elements of study which they possessed in so great a quantity should not have so long a time languished uselessly under the vaults of a great number of monasteries and on the grand roads where the precursors of the Renaissance remarked them when the real hour sounded.

As we have said, each race must or can be artistic at its proper time. The maturing of artistic faculties is a phenomenon which follows the ordinary laws, and, just as the quality of a grain and the fertilizing nature of the ground are not everything by themselves without the rotation of the seasons, which must second the vegetation of the plant which is to sprout, so it is necessary, in order that the artistic temperament of a nation may develop and bear fruit, that the revolution of the historic seasons shall be accomplished, and the intelligence of its people be submitted to climacteric conditions which may determine its complete maturity. We may, while sharing the same theory, establish the principle that there is never anything fatal or preordained in the fashion in which this maturing is accomplished, and that the artistic orientation of a people will be modified, will be transformed, will take the most opposite directions, the most scattered, according to the changes which are produced in its historic surroundings. Therefore, there must always be welcomed with a certain distrust classifications of schools by rank and nationality. These classifications are, perforce, empirical, and for this very reason erroneous and devoid of all value. I have, for my own part, the custom of shrugging my shoulders whenever I hear mentioned Italian art, French art, Spanish art, and so on. There is no real truth in these denominations, except this, that at a certain time there were in Italy, in Spain, in France, artists who did remarkable work; but it does not result that the manner in which these works have been conceived and executed was, so to say, an organic derivation from national characteristics. On the other hand, it would be easy to prove the contrary by the simple reason that a man of genius — that is to say, a grand artist — is great and is a genius just because he does not resemble the general run of men amongst whom he was born, and that, consequently, he would be all the more admirable if he were farther removed from them. In a word, Italians, Frenchmen and Spaniards will have genius and be really great men precisely because they raise themselves above their compatriots, and because they still more cease to resemble them, and their works will be the more appreciable because they are superior to those which their contemporaries, born under the same sky, are able to create.

Is it not ridiculous, then, to speak of Italian art when designating a patrimony and an artistic cycle which comprise epochs and kinds of manifestations of such diverse character, having so little resemblance one with another? What bond of kinship, for example, can exist between the Neapolitan school and the Florentine, between the Roman and the Venetian, between the Lombard and the Siennese, between the Mantuan and the Umbrian? The truth is, that when a citizen gives birth to a *chef-d'œuvre*, accomplishes one of those prodigies which have the virtue of enlarging the horizon of human intelligence, he ceases to be a citizen, and becomes a mere man.

[1] Continued from No. 707, page 17.

He issues out from his native country to enter into full humanity — to penetrate to that radiant and star-lit country to which belong all the *élite*.

At no place better than at Venice can be encountered the evidence of the truth of this thought which I have just formulated, which, unfortunately, is not shared by those who do not know how to criticise art and history without mixing up with it the preoccupations of Chauvinism. If one would sound the depths of that which is called in the official *ateliers* "Italian art," it would not be difficult to prove that the splendors of the Renaissance are in great part the fruit of foreign importation, and that, to speak only of architecture, the action, the instruction and the participation of master-builders from Germany prepared the way for Italian architects who have filled their country with admirable works. Jacopo, surnamed Lapo, the father of Arnolfo di Lapo, author of Santa Maria del Fiore of Florence, was a German by birth, and also the greater part of the architects whose names are not known to us, and to whom we owe all the monuments whose foundations were laid in Italy before the twelfth century, amongst others, of the magnificent Cathedral at Milan, the Tower of St. Mark's at Venice, and the Leaning Tower at Pisa. These great artists were so little infatuated with their works that they did not even take the trouble to engrave their names on the stones of the buildings which they constructed, but created for the mere pleasure of creating, without vanity, without even having the knowledge of the real grandeur of their creations — very different in that from our times, when one is very easily induced to believe that he has genius, that he has created a *chef-d'œuvre*, so that the slightest trinket, in consequence, now bears the signature of him who designed it.

That art is everywhere a phenomenon of transition, a transplantation, may be perceived in the influence that the Egyptians exercised over the Greeks, in that which in their turn the Greeks exercised over the Romans and, more especially in architecture, in that which the Germans exercised over the Italians, and these in their turn, at different epochs, over the French, the Spaniards and the Flemings. In architecture the exotic imprint has remained more visible and more living than in all other manifestations of art, and, after having been, according to the Grecian formula, transmitted by Vitruvius, Doric, Corinthian or Ionic, the Italian style had become, at the beginning of the Renaissance, Gothic; that is to say, German or Scandinavian. When later there arose what may be called the Italic style, Tuscan or Florentine, this style was, in sum, only a mixture of all the formulas since the primitive Etruscan formula down to and including the Roman, the Greek and the Gothic.

Nationalism in art is, then, an improper term; for the flowering of art is a phenomenon which depends on an infinity of influences which are in the air, which come from on high and from afar, absolutely as the fertilizing of certain fruits is brought about by the action of breezes which have crossed the oceans, and which bear from the remotest regions the fertilizing elements with which they are impregnated.

It is especially at Venice that the truth of the theory which I have just formulated declares itself to the eyes of an attentive observer. Art at Venice has no style of its own, properly speaking, because it has all styles. When one has said Venetian art, one has expressed a vague definition which does not answer to a reality. Venice was that point of Europe where the Orient and the Occident met. It was the last limit where occidental civilization could still believe itself at home, and where oriental civilization began to feel itself expatriated. From this shock of two worlds, each of which comprised in itself several worlds, was born a proteiform art, fantastic, bizarre, inharmonious, without rule or regulation, and which pleases just because it surprises, and because it puts to rout him who searches to unravel its law and synthesis. This mixture has been all the more complicated and vast, has produced results all the more prodigious and inexplicable, because each of these two worlds already united the fruits of association and the fusion of several scattered elements.

The Occident brought to Venice the Roman tradition, issue of Etruscan importation, bastardized, embellished and completed by the most recent influences imported from the north under the cover of Gothicism — this same Roman tradition, in whose depths slumbered the reminiscence of Greek art which, after a long detour and after having traversed the peninsula from south to north, came to join the true Greek art of which the Venetians had gone in search to Attica and the Peloponnesus, and of which this reminiscence was only an emanation. And, upon its side, the Orient did not only bring into the City of St. Mark the revelation of Hellenic art, but it called to her all the *défroque* of Byzantium, the theory of that Byzantine art which was born of the shock and mixture of all the dreams of the Orient, of the fusion of all the conceptions ripened in the depths of Asia and in the burning plains of Africa, of all the thoughts, of all the dreams born of Arab, Moorish, Assyrian, Phœnician and Egyptian genius. All this is met with at Venice, and from this fusion was born a city the most unique in the world, which has the specialty of exceeding in reality all that the imagination can conceive. There is no traveller who has not experienced on arriving in a grand city a cruel undeceiving. The human imagination is so fertile that it is easy for it to embellish the things that may be seen — thanks to dreaming of the marvels which one is going to visit, and rendering them more beautiful than they really are; when he arrives he discovers with some bitterness that the reality is much more commonplace than he had dreamed.

[To be continued.]

HADRIAN'S VILLA.

AFTER Trajan, Hadrian's name stands prominently forward in connection with the arts. He restored many of the ancient temples which were falling to decay; he erected others in a style worthy of the best ages of the art; he completed the temple of the Olympian Jupiter at Athens, and enriched it with a statue of the god in gold and ivory. But the most extensive of his works in relation to the arts was the construction and storing of his celebrated villa, about eighteen miles from Rome. It is almost impossible to read any account of ancient sculpture without finding some mention of Hadrian's Villa, for the sculptures discovered there have been immense. It will not, therefore, be out of place to see what sort of place this may have been in its best days. This villa was built on the plain at the base of Tivoli, about eighteen miles from Rome, from the designs of the emperor, mainly to contain the treasures of art which he had collected. When first built it more resembled a city than a villa, for it is said by some antiquaries to have been eight or ten miles in circuit; but this statement is a little too much for modern credence. But it is, nevertheless, certain that in no other part of Italy is there a mass of ruins of such amazing extent. Instead of being merely a villa, as we now understand the term, it comprised a lyceum, an academy, a pœcile, a vale of Tempe, a serapeon of Canopus, a stream called the Euripus, a library, barracks for the guards, elysian fields and numerous temples. Many of these were imitations of celebrated buildings, or places elsewhere, and Hadrian seems to have wished to concentrate all the luxuries possible within this his unequalled country house. It was embellished with all the finest works that could be procured, whether the productions of ancient Greek artists or of those of his own time. Some of the most interesting and valuable remains of antiquity have been discovered there, and even at the present day every fresh excavation that is made among these ruins restores to the world some object of interest. Some of the Egyptian superstitions having been introduced into Italy about this time, they were mixed up with the existing forms of worship, and the gods of the Nile were admitted among those of the Romans. The example of the capital was soon followed by the smaller communities, and as the new worship was extended over the whole empire, a great demand arose for statues and other symbols of Egyptian deities and ceremonies. The imitations of Egyptian figures and subjects which are found in Italy, and which particularly abounded among the ruins of Hadrian's Villa, may be assigned to this period. The specimens of sculpture of the time of Hadrian that are preserved in modern collections are evidence of the high state of the arts. The statues and busts of himself and of the emperors who immediately preceded and followed him, as well as the portraits of Antoninus and Lucius Verus, exhibit qualities that would do honor to the best ages of Greek sculpture. There are two statues of Antinous in the museum of the Capitol, one treated in the Greek style entirely naked and the other with Egyptian attributes, which are particularly worthy of notice from the simplicity and beauty united with grandeur that pervades them. It was by the orders of Hadrian that a change was wrought in a law concerning the portraits of private individuals, and which change led to the fashion of having portraits in statuary in the houses of all the noble and opulent citizens. In the villa at Tivoli, Hadrian placed the statues and busts of his living and deceased friends. The favorite architects employed by Hadrian in his great works were Apollodorus and Detrianus; but all attempts to discover the names of even a few among the many sculptors who must have been employed by him have proved unavailing. How far Hadrian may be termed the Pericles of Roman art, it would be difficult to say without knowing the degree to which he encouraged native artists to add to stores already existing; but he certainly seems to have been the most munificent patron of art that Rome ever had. With him the great impulse ceased, and neither the patronage nor the skill seem ever after to have been forthcoming to so great a degree for the production of fine sculptures. — *The Architect.*

SOCIETIES

SKETCH-CLUB OF NEW YORK.

THE regular September meeting of the club was held at Delisle's Roof Garden, Central Building, Saturday evening, September 2d. This was the first monthly meeting after vacation and there were about thirty present. Mr. Edward L. Tilton, of the firm of Boring & Tilton, was the guest of the evening, addressing the club on the subject of travelling in France and student-life at the École des Beaux-Arts. Mr. Louis Mullgardt, President of the St. Louis Architectural Club, was also present and spoke. Mr. Clarence S. Luce said a few words about club competition and told a story, and Mr. H. Klingenfeldt entertained the members with a song. The next dinner, to occur the first Saturday in October, will be held in the new club-room, 1473 Broadway, near 42d Street. There will then be an exhibition of summer sketches and the occasion will be made a house-warming for the new quarters.

EDGAR A. JOSSELYN, *Recording Secretary.*

ILLUSTRATIONS

[*Contributors are requested to send with their drawings, plans and a full and adequate description of the buildings, including a statement of cost.*]

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STRASBOURG, AFTER A DRAWING BY SAMUEL PROUT.

COMMUNICATIONS

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LIVE LOADS IN OFFICE-BUILDINGS.

Denver, Colo., August 30, 1893.

To the Editors of the American Architect:—

Dear Sirs,—I was much interested in reading the article on "Live Loads in Office-buildings," by Mr. Blackall, in the last number of the *Architect*, as it gives practical facts and is in line with what I have been advocating for years, viz, that all calculations for building construction should be based on the *probable* conditions, rather than on those that are possible. In regard to the requirements of the building-laws of the cities of New York and Boston relative to the live loads on dwelling-house floors, I consider them positively absurd, and I believe that such laws do more harm than good. It always seemed to me that such provisions should be in conformity with reasonable conditions, and then should be strictly enforced. A law which is over-strict is seldom respected or enforced.

Yours truly, F. E. Kidder.

NOTES & CLIPPINGS

A Ruined Capital of Siam.—The remains of the old capital of Siam, Ayuthia, which was taken and destroyed by the Burmese in 1760, are on the banks of the Menam, about 120 miles above Bangkok. Ayuthia, which, from the glowing description of writers of the seventeenth century, appears to have been one of the richest and most populous cities in Farther India, was founded in 1350 by a prince who migrated from the North. Joost Schouter, a Dutchman who lived in Ayuthia for eight years, just two centuries and a half ago, never wearied of telling of the great wealth and commerce of this ancient capital of Siam. He described the place as being laid out with several broad streets, intersected by numerous canals and possessing hundreds of large and splendid temples. It measured eight or nine miles in circumference, exclusive of suburbs, and was protected by a thick stone wall, which, in the estimation of the Dutchman, made it impregnable. That this was not the case was proved in 1768 when the Burmans, after a two years' siege, took the town and destroyed it. Deluges of rain, followed by blazing heat, have reduced a once large and magnificent city to a dismal, howling waste. The view from a remaining tower is dreary enough. Where once were canals crowded with shipping and streets teeming with a busy population can now be seen only clumps of green bamboo and wild shrubs, forming in many places an impenetrable jungle. All vestiges of houses have disappeared under the rank tropical growth as completely as if they had never existed; but the site of former magnificence is attested by the numerous ruined and broken towers and pagodas springing up here and there, half smothered and choked by the closely clinging vegetation.—*New York Tribune.*

Penny-in-the-Slot Gas-meters in Liverpool.—Automatic gas-meters which are put in operation by dropping a penny (two cents) in the slot are in use in Liverpool, England, and the Liverpool *Mercury* says that the device has come into very popular favor. In 1890 over 100 meters were at work in Liverpool, and from that time until now the difficulty is said to have been to construct the machines quickly enough to supply the enormous demand which now exists. In 1891 the company fixed 1,975 meters, in 1892 it fixed 4,038, and now in Liverpool alone there are between 8,000 and 9,000 automatic meters in the houses of those who hitherto have had to depend upon candles or oil for the illumination of their homes. Like every other invention, the automatic gas-meter has since its initiation been subjected to various improvements. In its latest form there are in view of the householder three dials marked: "L," "S" and "D," and as soon as a penny is dropped into the slot the hand of the "D" dial records it. When twelve pennies have been dropped in, the "D" dial stands at "O," while the hand of the "S" dial records that one shilling's worth of pennies are in the drawer, and so on, until £20 ($100) worth of gas is paid for. The hands can only move one way, so that by this invention the householder practically gets an indisputable receipt for the pennies he puts into the slot and the total amount he has paid for his gas. An indicator shows how many feet of gas are in the meter "paid for, but unconsumed." When all the gas paid for has been used the flame does not at once go out; but under a new arrangement the meter automatically warns the householder that the supply is nearly exhausted by gradually lowering the flame at least one hour before turning the gas off. It is to be hoped that the dials record more accurately than those of the ordinary gas-meters are popularly supposed to record the quantity of gas.—*Exchange.*

The Meaning in Architectural Foliage.—To many persons in their cursory notice of architectural foliage, stray instances of an underlying meaning must occasionally have presented themselves. The Egyptian had used the lotus lily to bear the beams of his tenple, binding its stalks together for the model of his pillar and forming its capital after the flower, probably with definite symbolic intent, for a water lily scarcely suggests itself as suitable for forming a column; we know, however, that that plant was a sacred emblem to him, constantly placed in the hands of his divinities, and interwoven with traditions of Horus and the Sun, and knowing this its use becomes reasonable and interesting. Although the Greek acanthus would seem to have no such fact to support it, yet the legend of its origin bears something of the same spirit. The architect Callimachus is said to have gone to visit the grave of his daughter, upon whose tomb he had previously placed a basket of flowers; the brankusine meanwhile had sprung up about the tile upon which the basket stood and encircled its fine lattice with its luxuriant herbage, and this visit the artist immortalized in the Corinthian capital. To the Roman mind, however, this local circumstance does not appear to have been of sufficient moment for such a position of importance, and in their capitals after this order they employed far more (according to Sir William Chambers and Mr. Ralph N. Wornum, who studied the question,) the olive and laurel and parsley, foliage sacred to Minerva, Apollo and Hercules. And in Christian architecture the same intention may have prevailed. Sir Walter Scott's mind seems apprehensive of something of this kind being the case in the stonework of "St. David's ruined pile," when, speaking of the monks' garden, he says:

> "Spreading herbs, and flowerets bright,
> Glistened with the dew of night;
> Nor herb, nor floweret glistened there,
> But was carved in the cloister-arches as fair."
>
> —*The Contemporary Review.*

The New York Aquarium.—The old historic fortress known as Castle Garden, situated on the extreme point of land at the south end of the city, where the waters of the Hudson and East Rivers unite, is now transformed into a free aquarium. The legislature appropriated $150,000 to pay for converting it, under the charge of the Park Department. The building has been remodeled by Mr. H. T. Woodman, a scientific aquarist. Round the walls and beneath a light circular gallery are two ranges of brick wells, which will form the tanks, and beneath the dome in the centre of the building is a large central tank, which will in time become the home of a white whale or grampus; and six small tanks around the centre tanks will be used for sharks, seals, etc. There are thirty-six side tanks in all, which will be lined with white tiles and faced with plate glass. In the gallery eight-four small tanks will be placed. Great care is taken with the lighting, which is accomplished by means of skylights. Special tanks are provided for the blind fishes, and experiments will be carried on to see if the blind fishes will not, on favorable conditions, recover their sight. Abundant supplies of fresh and filtered salt water will be provided. The three great aquariums of the world are situated at Naples, Brighton and Berlin. The present aquarium, is much better equipped than the Berlin aquarium, and will doubtless in time rival the other two great aquariums. It is a valuable acquisition to the city.—*Scientific American.*

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