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SEVERAL newspapers call attention to the danger that the excitement and hurry of war may be utilized by speculators to get vicious legislation through Congress, disguised under some form which will render it acceptable to people who have not time to study it thoroughly. One of the schemes which has the strongest money backing is that for the virtual repeal of the forest-reservation laws. As the inhabitants of the little mountain States at the head waters of our principal rivers have an influence in the Senate many times as great as those of the populous communities lower down the stream, it is not surprising that they have had, in that branch of Congress, an advantage which has once or twice nearly led to the sacrifice of enormous national interests for the benefit of a few great lumber speculators, mining prospectors, and sheep-herders, who utilize the natural desire of settlers to cut wood in the public forests without paying for it to put them in a position to ravage the forests in which the settlers themselves have really a greater interest than any one else. The Lower House, which represents the nation far more closely than the Senate, has hitherto prevented the success of the plots to appropriate the public forests; but the Senate has a way of overriding the popular will by attaching its obnoxious measures to bills of the most obvious necessity and utility, and refusing to allow the necessary and urgent legislation to be carried out except with the addition of its own scheme. At this moment, a Senate amendment, practically abolishing the forest reservations of the United States, has been attached, by vote of the Senate, to the Civil Sundries bill, and is awaiting action by the House. Under our rules, the Senate, if the House should reject the amendment, may refuse indefinitely to pass the bill without it, and delay all the other provisions of a bill of great importance until the House submits; and it is very desirable that those who wish to prevent the carrying-out of the plot should strengthen the hands of the Representatives who are trying to maintain the rights of the people, by public expression of their opinion.

SPANISH matters are so interesting just now that many people will be glad to read the article on "Barcelona" in the current issue of the *Monde Moderne*. Among the illustrations with which the article is furnished is one showing the house of Señor Guell, which is not only a striking object from its size and picturesque design, but is of interest as having been the work of an architect who, some years ago, was welcomed with much satisfaction into the ranks of the profession in the United States. His long and intelligent study of the methods of building which the Latin races have inherited from

the Romans, aided by a sympathetic tact which is by no means generally characteristic of foreign architects sojourning in America, have enabled Mr. Guastavino to exercise a decided and extremely beneficial influence upon our architecture; and the next generation will certainly assign to him an important place among the leaders who are effecting, in this country, a memorable revolution in the art, of construction.

THE *Engineering News* has some very timely comments upon the practice of hollow-tile fireproofing work, as seen in too many buildings of the present day. As most architects know, the officials of the New York Department of Buildings are very conservative in their views, and prefer terra-cotta fireproofing to concrete construction, although the latter is not by any means excluded from the city. In the thirty-story building now in process of erection on Park Row for what is known as the Ivins Syndicate, the specifications called for the use of either hollow-tile flooring, or concrete construction, on the Roebling system. The beams were spaced five feet from centres, so that either system could be used, but the architects preferred the concrete construction, partly because by its use a saving would be effected of twenty thousand dollars in the cost of the floors, and partly because it would be much lighter, weighing forty-five hundred tons less than the hollow tile, and saving so much weight on the columns and foundations. Three separate petitions were presented to the Board of Examiners, asking for the approval of the floors with the Roebling filling, and all three were rejected, the Board refusing to give any reason for its action. At last, the owner procured a mandamus from the Courts, ordering the Superintendent of Buildings to decide whether the concrete floors might be used. In December last he, accordingly, gave his decision, approving the use of the Roebling construction; but by that time about half the floors had been filled with hollow tile, the owners finding it better to incur the extra expense of using tile, rather than suspend their operations to wait for official action.

AFTER the question had been thus settled, the *Engineering News* thought it worth while to examine the tile floors, as actually laid, and present a description of them, illustrated with photographic plates, to the consideration of its readers; and it gives, accordingly, views of a sort very familiar to architects who have had much to do with fireproof construction, showing the underside of portions of the tile flooring, with skew-backs broken; flange tiles with corners missing, exposing the metal of the beams; keys out of place; spaces filled with loose chips, and so on. It says, fairly enough, that these defects "are chargeable to the use of injured material, and to the manner of handling the material, rather than to the nature of the arch-material itself"; but it thinks, with reason, that the interests of the makers of the material, as well as those of the owners of buildings, and the public generally, require better workmanship in the use of it than is now common. Theoretically, the hollow-tile floor construction, as now used in this country, is nearly perfect; but, in practice, the ingenious precautions of the tile-manufacturers for protecting the metal, and securing the strength of the floor-arches, are almost nullified by the careless and ignorant way in which the material is used. Most of our professional readers can testify that the illustrations in the *Engineering News* show workmanship which is far from being exceptionally bad; in fact, we have seen much worse floors, which the persons most concerned did not appear to regard as objectionable, and have walked over tile-arches which shook so under our feet that, considering the consequences of their possible collapse, we considered it most judicious to use the upper flanges of the beams as a path for our subsequent peregrinations. It is easy to find an explanation for these discrepancies between the theory and the reality of hollow-tile construction. In the first place, the tiles seldom fit precisely the spacing of the beams, the latter being necessarily more or less irregular, and must be cut to get them in, and the cutting of a piece of terra-cotta of cellular construction can hardly be effected, particularly if the material is thoroughly burned, without breaking it into shapeless pieces. It is true that the "end-construction" arching now popular offers advantages in cutting, but, even with this, the difficulty is far from being eliminated. Again, where beams, as is often necessary,

pass within a foot or less of a wall, it is hardly possible to arrange for proper arching, and the universal practice of masons is to fill in the space with loose material, wedging it, perhaps, in some way, but leaving it dependent for support mainly upon the cohesion of the mortar in which it is laid; while the occurrence of lines of bridging, particularly of the lattice kind, involves leaving a wide seam through the floor, the tiles fitting only with great difficulty around the diagonal angles or channels. Even after the floor is complete, it is always broken through in innumerable places for the passage of gas, steam, water and drain pipes, electric-wire conduits and so on, and the holes, which, in such brittle and cellular material, are altogether disproportionate in size to the pipe which is to pass through them, are filled, later, with a mass of shapeless chips.

THE consequence of all this is that it is a rare thing to see a tile floor in execution which is all that the architect would like to have it, or all that it might be as a piece of fire-resisting construction. It is easy to say that the architect ought to supervise the floors more strictly; but, as a matter of fact, the supervision of tile-laying is very difficult, for the reason that the tiles are laid on a flat centering of plank, and, if the upper surface looks well, it is impossible, without stationing a guard over every man, to know what the under surface may be, until the centering is removed, when repairing is practically impossible without taking out and rebuilding the floor; and, as it is generally easy for the builder to prove that his work is as good as the average of tile-flooring, the architect hesitates to delay the building by ordering an extensive reconstruction in compliance with what a jury would probably call an unreasonable whim on his part. The *Engineering News* indicates what is probably the best remedy for the trouble, by saying that building-inspectors ought to set the standard for such work, by objecting to floor-arching not in accordance with an official rule, without regard to ordinary practice. If they would do this, architects would gladly adopt and enforce the official standard, to the great advantage of the art of fireproof building, and, incidentally to that of the manufacturers of terracotta flooring, who must suffer from the comparison, which the agents of concrete constructions are quick to make, between the ragged, and obviously defective, tile floors commonly seen, and the smooth, tight under surface of a concrete floor.

M. CHARLES YRIARTE, the celebrated French critic, died a few days ago. M. Yriarte had a more adventurous career than falls to the lot of most literary men. Although of Spanish family, he was born and brought up in Paris, where he studied architecture under Constant Dufeux. He was so successful in his work that the Government took notice of him, and he was appointed "inspecteur des travaux" at the Vincennes and Vesinet Asylums, and afterwards, under Garnier, at the new Opéra. He abandoned this peaceful employment, however, for more stirring scenes, and in 1859, went with the Spanish expedition, under Marshal O'Donnell, to Morocco, as artistic correspondent for the *Monde Illustré*. A few years later, in the same capacity, he witnessed the French military operations in Italy; and during the Franco-Prussian War he acted as Secretary to General Vinoy. He occupied the intervals between his campaigns in painting and writing, devoting himself particularly to artistic biography and criticism, and books of travel, his active spirit often leading him away into regions unfrequented by ordinary tourists. In 1879, he was appointed an inspector of fine-arts, and, two years later, was made Inspector-General.

LE MONDE MODERNE, which usually devotes a good deal of space to architectural matters, gives, in its April issue, an account of an ancient town in the south of France which will make the mouths of architectural students water. Saint-Guilhem-du-Desert is a little fortified place in the valley of the river Hérault, seven or eight miles from the station of Aniane, near Toulouse. The hero from whom it derives its name was the son of some noble, perhaps royal, family in the north of France, who found his way to the court of Charlemagne, and so commended himself to the confidence of the great Emperor that, in the year 790, he was appointed imperial governor of Aquitaine. Three years later the holy war broke out between the Moors of Spain and the Christians, and the Governor of Aquitaine, in the absence of the Emperor, who was busy with the Saxons on the Danube, raised a force to oppose the army which the Caliph of Cordova had sent into

Languedoc. A great battle was fought near Carcassonne, in which the Christians were defeated, but the Moslems suffered so severely that they contented themselves with retiring into Spain with their prisoners, instead of following up their victory. A little later, Guillaume was the attacking party, and he continued conspicuous in the war until the capture of Barcelona made the Mediterranean coast for a time secure from attack from Spain. Then, like so many other heroes of his time, he resolved to seek rest from his successful labors in the calm of monastic life, and sought out a valley in the foot-hills of the Pyrenees, where the mountains shaded a little meadow, variegated by groups of trees, and watered by a clear stream. Having selected a site, he called in workmen of all kinds, and a monastery of the prescribed pattern was soon in process of construction. From the neighboring convent of Aniane, then ruled by his friend Witiza, afterwards canonized as St. Benedict of Aniane, he drew some monks to keep him company, and, his own establishment being finished, he and his associates devoted themselves vigorously to the road-building and other engineering and agricultural work which occupied the attention of monks in those days. Meanwhile, two of Guillaume's sisters, Aube and Berte, resolved to follow the example of their brother in withdrawing from the world, and he built for them, close by, a house in which they founded a community of nuns which flourished for nearly four hundred years.

AS in so many other cases, a little town grew up around the two convents, and, in the thirteenth century, the town had become so important that its inhabitants showed signs of impatience under the rule of the monks, claiming communal rights, like those which so many other towns in Southern France enjoyed. Toward the end of the century, after deliberations and negotiations, in which the women participated on an equality with other citizens, certain privileges were granted by charter, and were still further extended, by amendments, fifty years later. During this period, and through the following centuries, the monastery continued its peaceful and charitable existence, interrupted only by an attempt on the part of the monks, in the eleventh century, to gain from the Papal Court certain ecclesiastical advantages by means of forged documents; and in 1793, just a thousand years after Guillaume's first battle with the Moors, a petition was presented by the inhabitants of the town, then, as now, known as Saint-Guilhem, to the Republican authorities in Paris, praying that the decree of the revolutionary government, abolishing all religious orders, might find an exception in favor of their convent, on account of the charity and kindness of the monks to all persons, and the splendor with which they celebrated the offices of religion. This appeal seems, however, to have been unsuccessful, for the convent is now deserted, the chapel, a beautiful tri-apsidal building of the best period of the Romanesque, which is used as the parish church of the town, being alone kept in good preservation, while the Baron de ———, the proprietor of the ruins, who is described as "a poorly-dressed old man, with a hoe in his hand," cultivates by himself the ground of the cloister enclosure, raising vegetables for his own sustenance, with a small surplus of fruits, which he sells to the children of the little city, as they pass between the school and the ancient houses, many of which date from the Romanesque period, and some even from the tenth and eleventh centuries.

ALL students of social science will regret the failure of Messrs. Alfred Dolge & Son, of Dolgeville, Herkimer County, New York. This firm has for many years maintained a generous system of sharing profits among its employés, and the concern has been regarded as one of the most successful ever carried on in that manner. So far as can be learned, the failure is due to the cause which has brought down innumerable similar enterprises, the inability to utilize the system for sharing losses as well as profits. It is a rule as old as civilization that every business enterprise must meet with reverses. The prudent man lays up in prosperous times a fund to carry him over periods of depression and loss, and it is the difficulty of making working-people understand the necessity of making such provision that wrecks nearly all coöperative enterprises. To spend freely when money is plenty is much more characteristic of poor people than of rich ones, and the consequence is that poor people, and enterprises in which they share, are almost always brought to financial grief by a little adversity.

DANTE GABRIEL ROSSETTI.



and by far the most attractive to visitors, is the room set aside to a large and fairly representative display of the works of Dante Gabriel Rossetti.

But for insuperable difficulties the exhibition would also have embraced a selection from Mr. Holman Hunt's paintings, so that, with Millais at Burlington House, the public would have had an opportunity, unique and instructive, of judging at one time the works of the famous trio of the Pre-Raphaelite Brotherhood of which Rossetti was from the first the ruling spirit, but which is now solely represented by Holman Hunt.

The circumstances of Rossetti's Italian parentage and upbringing had much to do with his choice of subjects for his pictures, while his long attachment to Miss Siddal, whom he afterwards married, but lost so soon, and so tragically, had a preponderating influence in his selection of a type, to which he adhered more or less throughout his life, though in an exaggerated and, at last, unpleasing form.

The catalogue contains about eighty works, in pencil, pen-and-ink, water-color, and oils—and in parenthesis we may observe that many of his early works were executed first in pen-and-ink, and very small, and reproduced finally in oils. The earlier numbers in the catalogue are pencil-sketches $6\frac{3}{4}'' \times 5\frac{1}{4}''$ —of Rossetti, his mother, his sister Christina, the celebrated poetess; a vigorous portrait also is the life-size bust, dated 1848, of his maternal grandfather, Gaetano Polidori, whose son, Dr. Polidori, was the travelling companion and friend of Lord Byron. Besides these, there are numerous sketches of Miss Siddal, who became his wife, and a small head in pencil of Ford Madox Brown. Before leaving these, we must not omit a three-quarter-length portrait in crayons of Christina Rossetti, seated before a table, on which is an open book, her hands clasped under her chin, her face showing strong leanings to asceticism; also the life-size, half-length portrait in oils of the artist's mother, wearing a black dress and white cap, hung in the room set apart to deceased masters of the British school. It is a strong but kindly face.

"The Girlhood of Mary Virgin" was not only the first painting exhibited by Rossetti, but actually the first of his subject pictures. It was painted in 1848-49 and sent to the so-called "Free Exhibition of Modern Art," Hyde Park Corner, at which visitors paid to enter, and artists paid for wall-space! Previous to this, however, a small "private view" had been held by Holman Hunt, Millais, and Rossetti, of Hunt's "Rienzi," Millais's "Lorenzo and Isabella," and the above-named picture of Rossetti. At this "view" the Marchioness of Bath purchased Rossetti's picture for £80: it is an upright panel $33'' \times 25''$,—the present owner is the Hon. Mrs. Jekyll.

Surrounded now by subjects brimful of sensuousness and gorgeous color, this picture appears somewhat austere, in its absence of strong emotion. Mary, a girl of about twelve, sits at a frame embroidering a tall lily, growing in a pot before her, which a child-angel is watering. Her face and that of her mother, who sits beside her with folded hands, are charming in their naturalness and purity—they are actual portraits of the painter's mother and sister Christina—whose expression manifests a certain wistful awe. The picture is strongly symbolical. Instead of a ceiling, the room is shaded by a luxuriant vine, some branches of which Joseph is nailing to a garden wall outside; on a trellis rests the dove surrounded by a golden nimbus; and in the foreground, a seven-thorned briar and a seven-leaved palm—emblematic of Mary's great sorrow and great reward—lie crossed on the floor by her side. The original catalogue contained the lines from Rossetti's sonnet for the picture—

"As it were,
An angel-watered lily, that, near God, grows and is quiet."

Rossetti's second, and famous, picture, "The Annunciation," is in the Tate Gallery, and has not been lent. It was exhibited in 1850 at one of the small galleries, and thus partly escaped the abuse heaped on his friends at the Royal Academy; but from that time, morbidly sensitive as he was to praise or blame, he practically ceased to exhibit. Indeed Rossetti's aversion to publicity increased with time, till at last the mere rumour that one of his pictures was being exhibited made him uneasy for days!

Though undated, "The Passover" evidently belongs to this early period. It is an unfinished water-color $16'' \times 17''$, lent by John

Ruskin, and represents Joseph, sprinkling the lintel of his house with the blood of the Paschal lamb, contained in a basin held by Jesus, depicted as a boy of about twelve, leaning against the doorpost. He is watching His mother gather the "bitter herbs," and His shoes are being tied by John the Baptist. There is a charming simplicity in all the figures in this truly symbolical picture. One cannot help wondering that, notwithstanding their protestations about "truth in art," these Pre-Raphaelites did not obtain Jewish models. We know, however, Holman Hunt *did* go, later, direct to Jerusalem before painting his "Finding Christ in the Temple." In all these early paintings of the famous trio, carried out in the dry, Florentine manner, with its brilliant high tints, the colors show no deterioration.

What is believed to be the only illustration of Browning's "Sordello" is a pen-and-ink drawing $9\frac{1}{2}'' \times 10''$ entitled "Taurello's First Sight of Fortune," and was executed in 1850. After this date, the artist turned from Sacred art, owing, in the opinion of his brother, to the lack of any purchaser for his "Annunciation"; a picture the painter always spoke of as "the white daub." Hindered by his want of technical skill from realizing his own ideals of perfection, he abandoned one subject after another, in dissatisfaction, till, finally, he laid aside the pencil, or at least relegated it to a subordinate place, and gave full play to his poetic faculties. His father was angry with him for not "sticking to drawing"; but time has proved wherein lay his strength, for some of his poems will live after many of the paintings are forgotten. His "Sonnets for Pictures," affixed to the frames, are beautiful word-paintings, each explaining each. In a letter to a friend he says, "I believe my poetry and painting prevented each other from doing much good for a long time."

Knowing the fascination the story of Dante and Beatrice had for Rossetti, we naturally assume it to have been partly consequent on his being a namesake of the illustrious Florentine. It was quite otherwise, however. The painter's father, Gabriele Rossetti, was an ardent Neapolitan patriot and exile, who incurred the hatred of the Bourbon King, Ferdinand I, of Naples, and was fortunate in finding a hiding-place for three months, when the English Admiral, Sir Graham Moore, persuaded by his wife, sent him a British uniform, in which Gabriele got on board a vessel for Malta, and resided there three years, coming ultimately to London in 1824. An amnesty, granted later, specially excluded Rossetti and twelve others. To the end of his days, he was enthusiastic in the cause of Italian freedom, which he foresaw *would* come, but not in his time. He was for many years Professor of Italian at King's College, London, devoting his leisure to translations of Dante, besides writing many original works. In the home Italian was always spoken by him—Mrs. Rossetti was born in London, of Italian parents—their house was a rendezvous for exiles like himself, all which was a little tiring to his growing family, while Dante Alighieri was their *bête noir*. Nevertheless, the love of poetry being inborn in the members of this talented family, young Rossetti eagerly devoured the works of Byron, Keats, and Shelley, and then read the old Italian poets at the British Museum, translating any that caught his fancy, published later as "*Early Italian Poets*." The love he now conceived for Dante's poems never left him, and in the story of Beatrice he found a subject for a long succession of paintings throughout his career. In the earlier pictures Miss Siddal was the Beatrice, the last of them all, "Beata Beatrix"—Beatrice in a death trance—being painted as a remembrance of the beloved dead, for his generous patron and friend, Lord Mount-Temple. About all of these Dante pictures there is great pathos and purity.

About 1850, as has been stated, Rossetti gave up drawing and painting, but definitely adopted it as his life-work in 1853. Of that date is "Found," a pen-and-ink sketch for the larger oil painting. The scene is laid in the early dawn near London Bridge. In the foreground a young woman, unkempt and dishevelled, is seen crouching by a wall, and a young countryman is grasping her by the hand; a market-cart in which is a calf stands near. Both faces show intense feeling. Although the man realizes all her sin and shame, his manner is full of kind entreaty, while she seems to say, as with closed eyes she seeks to withdraw from his gaze, "Leave me—I do not know you—go away!" The same remorseful expression is portrayed in the countenance of the girl in "Hesterna Rosa," and also in that of the woman at a doorway watching children at play in "The Gate of Memory."

About 1856, through the recommendation of Mr. John P. Seddon, an architect engaged in restoring Llandaff Cathedral, Rossetti painted a reredos for the Cathedral, the water-color design for which is exhibited. This really fine and poetical work is a triptych, of which the centre represents the Adoration of the Magi, the sides being David as a shepherd, with crook and sling, and David as king in armor, and playing a harp. The painter's title for it was "The Seed of David."

In 1857, Mr. Woodward, architect of the new Union Debating Room, Oxford, adopted Rossetti's suggestion, of filling the bays with frescos from the Romance of King Arthur, and invited him to execute them. Associated with him in the work were Burne-Jones, William Morris, and Valentine Prinsep. Unfortunately, the young artists were ignorant of the importance of properly preparing the walls, so that they are now little better than smudges or blanks. The work was done gratis, all expenses being paid; but, as these were not limited, the sum disbursed was considerable. To this

period may doubtless be assigned two beautiful little water-colors of the "Holy Graal" and one of "Launcelot appearing to Guinevere at Arthur's Tomb." Also a quaint subject suggested by the famous Döppel Gänger legends of Northern Europe, and called "How they met Themselves." The scene is in a wood—the man draws his sword, and looks fierce, but awed; while the lady falls fainting to the ground. All these are charming examples of the painter's wonderful skill in the use of bright greens and blues.

The large pencil drawing, 32" x 27", of "Mary Magdalene at the Door of Simon the Pharisee," was made for the famous picture, and is exceedingly dramatic. Mary, having caught sight of the Saviour standing within the house, moved by a sudden impulse, breaks from her companions, and hurries up the steps, pushing back her lover, who tries to draw her back. She seems to be saying:—

"Oh loose me! see'st thou not my Bridegroom's face,
That draws me to Him? For His feet my kiss,
My hair, my tears He craves to-day; and oh!
What words can tell what other day and place
Shall see me clasp those blood-stained feet of His?
He needs me, calls me, loves me: Let me go!"

For the face of Christ, seen through a window at the side, Burne-Jones was the model.

There are five pictures relating to Dante and Beatrice. The "Meeting in Purgatory," 11½" x 10", depicts Dante, with hands up-raised, standing weeping before Beatrice, who is accompanied by two angels playing musical instruments; the face she unveils is singularly sweet. The bright green of the landscape and rich blues of the dresses are well managed.

A much more important canvas, dated '55, is "Dante's Dream," founded on a passage in the "Vita Nuova," though it is merely the water-color sketch, 18½" x 26", for the larger picture purchased in 1881 for £1,560 by the Corporation of Liverpool—the finest production of his artistic life.

In the record of his dream at the age of twenty-five Dante relates how "My heart so full of love said to me, 'It is true our lady lieth dead,'" upon which he went to look upon her on her bier. On a red-draped couch lies Beatrice, clad in white robes, her hands folded on her bosom, and her bright hair spread about her pillow. Her maidens, at her head and feet, are raising the purple pall, filled with May-blossoms. The floor is strewn with poppies, and on the frieze above are roses and violets. Over the couch hangs a flickering lamp, and through an opening in the roof is seen a flight of crimson-robed angels bearing a white cloud, representing the life that has fled. The crimson doves, which Rossetti made his constant symbol of heavenly ministries, flutter up and down the staircases on each side of the room. Before the couch stands the figure of Love, his flame-colored robes fastened at the shoulder by the scallop-shell of the pilgrim. In his left hand he holds a winged arrow and a bunch of rosemary, with the other he leads Dante, who is clothed in black, and who advances as in a dream. "Love bends down to give the kiss the lover had never given." The picture is monumental in its characteristics, the bier occupying the centre, the other details right and left being similar to each other. The description given is of the finished picture, which differs slightly from the one in the New Gallery. It will interest your readers to know that Forbes-Robertson the great actor posed for Love in this picture.

Among the pencil drawings there is a particularly fine one for this picture: a small full-length figure of Dante, whose face is not seen, but whose form and attitude are most expressive.

"The Marriage Feast" is an exquisite little portrayal of out-of-door life in Florence in Dante's time. In a long and gay bridal procession Beatrice is seen approaching a house at the porch of which Dante and another young man are standing, the companion of Beatrice attracting her attention to him. A girl scattering flowers in the path offers one to Dante, who, however, sees only his beloved. The green-blue dresses and mantles of the ladies harmonize well with the other features of the scene.

To the "Vita Nuova" belong "The Salutation" and "The Donna della Finestra," the former referring to the lines

"My lady looks so gentle and so pure
When yielding salutation by the way."

This large panel, 59" x 34", painted in 1881, but unfinished, is from the Leyland collection. Alas! when Rossetti painted this picture he had lost the power of conceiving a pure and gentle Beatrice, having lowered his standard of true womanly beauty. The passionate brooding, the too sensual, arched mouth, the abundant hair falling over the forehead like two wings, was his favorite type, and betrayed that tendency towards the specialization of emotions which does not universally charm. Beatrice is supposed to have just saluted Dante—standing at the roadside with Love—and passes on towards the spectator, between lovely bushes of roses and jessamine. Her dress is white and soft, clasped round the waist with a silver belt, and her attitude gracious—the more the pity that the unpleasant expression of the face mars an otherwise fine picture.

"La Donna della Finestra," or "Our Lady of Pity," represents the young lady whom Dante celebrates in the "Vita Nuova." Rossetti made several sketches for this design, but the head in the unfinished painting at Birmingham is considered the finest. After hearing of the death of Beatrice, Dante was going along the street weeping, when, looking up to avoid the ridicule of the passers by, he saw a young and beautiful woman at a window,

"Whereupon she, after a pitying sigh,
Her eyes directed towards me, with that look
A mother casts on a delirious child."

The eyes are indeed full of compassion, but the otherwise beautiful face is spoiled by the unpleasant expression given to it by the arched lips. The lady is attired in a white dress over green, and leans on a balcony round which twines a fig-tree, above and around her are lovely roses, one of which lies before her. A lustre is thrown on her hands and dress by the rays of the setting sun falling sideways upon them.

The tragic story of Paolo and Francesca—"Inferno," Canto V, naturally appealed to Rossetti's romanticism; and of this his picture is an embodiment, while, in its beauty of composition and the exquisitely rich harmony of color, it is a perfect gem. The moment is chosen when the lovers, seated in a recess against the beautiful painted window, let fall the book, finding "no time for reading more and breathe out all their soul in one fatal kiss." It is on panel 16" x 13½", with a frame of dark wood carved with ivy and having above, the title "Francesca da Rimini."

More pronounced in sensuousness are the two Borgia pictures: "Lucrezia Borgia," a small full-length figure, is depicted washing her hands after giving the poison to her husband, whom, with large swimming eyes, she watches being led by the infamous Pope Alexander VI, as is seen reflected in a mirror behind her. She wears a white and gold dress, and her voluptuous beauty is set off by a wealth of golden hair. In "The Borgia Family," painted much earlier, she is seen seated on a couch playing a lute, to which two children are dancing; on either side are seated the Pope and Cæsar Borgia, the latter beating time with his dagger while he blows the petals of a rose in Lucrezia's hair.

In "Lady Lilith" the artist lowered his ideal of female beauty while giving full play to his imagination. There is beauty, but of a debased kind, quite in keeping, however, with the character personified. According to an old Talmudic legend, she was Adam's first wife, but, refusing to submit to him, she left Paradise for a region of the air. She is said to be hostile to new-born infants, hence superstitious Jews still place near them coins having the words "Adam, Eve," and "Avaunt thee, Lilith!" The "Cyclopædia Metropolitana" says our word *Lullaby* is a corruption of *Lilla abi* (Lilith, avaunt). Lilith is depicted surveying her golden tresses, "one hair of which wound round a man's heart was said to be fatal." Needless to add, the accessories and the rich hues of this water-color are in accord with the subject.

Of "Pandora" there are two copies: a study in red chalk, dated 1863, and a painting on panel, dated 1891. Yet another chalk drawing, made in 1878, is finest of all. The painting is 52" x 31", and represents Pandora three-quarter length. She wears red drapery, and has dark auburn hair falling over her brows. She is surrounded by flames and smoke, proceeding from the fatal casket she holds in her hand, and closes when too late. "The whole design," says Swinburne, "is among Rossetti's mightiest, in its godlike terror and imperial trouble of beauty, shadowed by the smoke and fiery vapor of winged and fleshless passions crowding from the casket in spires of flame-lit and curling cloud round her fatal face and mourning veil of hair." Truly a terrible face. Mrs. William Morris posed for Pandora. It may not be out of place to quote here Mr. William Rossetti's description of the face of Miss Burden of Oxford, who became Mrs. W. Morris. "A face at once tragic, mystic, passionate, calm, beautiful and gracious, a face for a sculptor—and for a painter, one solitary in England, and not at all that of an Englishwoman but rather of an Ionian Greek. Complexion dark and pale, eyes a penetrating grey, her massive wealth of hair gorgeously rippled and tending to black, yet with a deep-sunken glow." The lady was discovered by Rossetti when working at the frescos at Oxford and soon after was married to William Morris.

Rossetti's reasons for painting "The Blessed Damsel" was in his own words: "I saw that Poe (in the 'Raven') had done the utmost with the grief of the lover on earth, and I determined to reverse the conditions and give utterance to the yearning of the loved one in heaven." The picture embodies the thought said to have been expressed by an American poet in "Homesick in Heaven." Having been now ten years absent from her lover's side, she is pictured leaning out of heaven watching with tears and prayers for his coming. Below the picture is a predella, showing the lover reclining in a sylvan scene gazing up to heaven. The coloring is beautiful in the extreme. The subject is taken from Rossetti's sonnet.

"The Vision of Fiammetta," in the artist's thoughts an angel of immortality, is a gorgeous bit of color. It is a canvas 56" x 35" and was painted in 1878. In this new version of a subject taken from Boccaccio, the three-quarter-length figure wears a flowing crimson robe and some flimsy white drapery round her neck and arms. Fiammetta is perfectly embowered in apple-blossoms—one branch she holds across her head, which is surrounded by an aureole. Poised upon this is a crimson bird with outspread wings, while from the branch the petals fall one by one. The dark background is lit up in a wonderful way by large peacock-colored moths, with a rich effect. With her left hand held down Fiammetta puts from her another branch. Her hair is a dark auburn, but the flesh tints are far from good.

Rossetti's sonnet is so beautiful, and so accurately describes his painting that it should be partly quoted:—

"Behold Fiammetta, shewn in vision here.
Gloom-girt mid spring-flushed apple growth she stands,
And as she sways the branches with her hands
Along her arm the sundered bloom falls sheer
In separate petals shed, each like a tear;
While from the quivering bough the bird expands
His wings. And lo! thy spirit understands
Life shaken, and showered, and flown, and death drawn near."

The last work to be described is "Proserpine," a panel 49" x 22". The figure is half-length, and is clad in a blue robe, her long black hair hanging over her shoulders. Looking at her troubled face, as, holding the bitten pomegranate, she stands at the door of her palace, in the cold light that strays within, we trace the "struggles of a soul that has become less sensitive to the higher joys, and is torn between the baser enchantment and the pure delights she longs to regain."

"Afar away the light that brings cold cheer
Unto this wall, — one instant and no more
Admitted at my distant palace-door.
Afar the flowers of Euna from this drear
Dire fruit, which, tasted once, must thrall me here.
Afar those skies from this Tartarean grey
That chills me: and afar, how far away,
The nights that shall be, from the days that were."

"Afar from mine own self I seem, and wing
Strange ways of thought, and listen for a sign,
And still some heart unto some soul doth pine
(Whose sounds mine inner sense is fain to bring
Continually together murmuring),
'Woe 's me for thee, unhappy Proserpine!'"

ROSSETTI.

Like Millais, Rossetti learned drawing at Sass's Academy, Gower Street, then kept by a Mr. Cary, son of the translator of Dante. He afterwards spent some time at the Royal Academy, but, being ambitious, and too impatient to wait two years longer before beginning painting, he wrote a flattering letter to Ford Madox Brown, asking if he would receive him as a pupil and on what terms. "I feel," he wrote, "convinced I should then have some chance in the Art." He was then under twenty years of age — Brown received him, gratis; and they became life-long friends. But he did not like the drudgery and was never good at perspective. He then joined in a studio with Holman Hunt. One evening, spent by the friends at Millais's home, they chanced to see a book of engravings from the Campo Santo at Pisa, and although they had seen some Old Masters at the National Gallery, these opened up a new world to them.

After forming the Pre-Raphaelite Brotherhood the members dropped the "Esq" after their names, substituting P. R. B. About 1870 a lady asked Rossetti if he were the Pre-Raphaelite Rossetti? to which he replied, "Madam, I am not an 'ite' of any kind; I am only a painter!"

"He never mastered the technical side of his art, and his larger works failed to fulfil the splendid hopes excited by those wonderful little drawings, which, for wealth of color and romantic passion, had never been surpassed in any age. But the fascination of his presence and the intensity of his nature made themselves felt on every single individual brought into contact with him, and all the best art and finest artists of the last fifty years have been largely influenced by his genius."

He died on Easter Sunday, April 9, 1882, at Birchington, aged fifty-four — and a Runic cross has been placed over his grave. In front of his old home, 16 Cheyne Walk, Chelsea, a drinking fountain, raised by subscription, designed by Mr. Seddon, has been placed, with a bronze bust by Ford Madox Brown.

THE HIGH BUILDINGS OF THE ANCIENTS.

THE Professor Lanciani is due the credit of the discovery that there were building-laws in Rome long before the Christian era. As the price of urban property increased the landlords were forced to build high, and 200 years before the time of Christ the height of Roman tenements became alarming to those having the care of the public safety.

There are frequent allusions among the Roman historians, orators and poets to the enormous height of the tenement-buildings of Rome, but no definite figures are given until the days of Augustus, when a law was promulgated by the Senate which fixed the height of new structures at 60 feet on the street front, without making any allusion to the height of the rear. It is, however, known that in the rear these tenement-buildings rose often several stories higher than in the front, so that from a distant height, as from the top of a temple which commanded an extensive view, a row of tenement-buildings in Rome presented the appearance of a terrace — highest in the rear and descending by stories toward the front. This law of Augustus applied to new buildings, respect, then as now, being shown for investments already made. The number of stories on the street front of these Roman buildings was generally ten to twelve, with fourteen or fifteen in the rear. The lowest stories were 8 or 10 feet in height, but, from accounts given by the writers of that time, the stories appear to have gradually diminished as their height above the ground increased, so that the topmost tenants lived in quarters where very often they could not stand erect. That the stories were sometimes much less than 5 feet is shown by the discoveries in Pompeii, where in a house inhabited, presumably, by poor tenants, a story of 4 feet

3 inches has been discovered. This was a living-room, too, for in it were found all the articles which pertained to Roman housekeeping: cooking utensils, beds, stools, mirrors, combs, brushes and other things which, with the bones of the family, furnished indisputable evidence that the rooms had been occupied. It is quite likely that there were thousands of rooms in the tenement-districts of Rome that were no higher than this Pompeian tenement, and, indeed, more than one Roman poet alludes to the lodgings into which he must "creep," the word, perhaps, indicating not a figurative but a literal method of entrance. That the tenement-houses of Rome towered at least 100 feet above the street in front and probably 125 to 130 feet in the rear is certain, for the promulgation of an edict limiting the height to 60 feet in front indicates that this height had been so greatly exceeded in so many cases that the public safety was believed to be imperilled. How many stories were contained in these tenements is conjectural, but if the upper stories were no higher than that of the house in Pompeii, the Roman tenements may have contained as many or more stories than the modern office-building.

The height of these Roman buildings was entirely irrespective of the width of the street. Modern building-laws have more or less reference to the width of the streets on which the building faces, and to the isolation of the structure or its proximity to other buildings. The Berlin Building Act admits in residence-buildings a maximum height of 36 feet, if the street is of that width, and a greater height if the street is broader; the Building Act of Vienna allows 45 feet if the street is that wide, while the building-laws of Paris permit a height in residence-buildings of 63½ feet, provided the street is of that width. The Roman Building-law, however, had no reference whatever to the width of the street, and as most of the Roman streets were very narrow, the city, looked at from a height, strongly resembled a mass of houses with narrow trenches between. Many important thoroughfares did not exceed 10 feet in width; the widest streets in Rome were not more than 100 feet, while the side-streets were often mere passageways, from 5 to 6 feet in width. With streets no wider than this, and with houses of which the upper stories projected farther than the lower, it was quite possible for the inhabitants of the topmost tenements to shake hands across the streets, if the custom of shaking hands had been as much in vogue then as now. That the situation was greatly to the advantage of thieves, marauders and night prowlers is evident from the frequent allusions to the depredations of burglars, and the ease with which a passage could be effected from roof to roof, even across the street. While providing an escape for night-hawks, the narrow streets proved also the salvation of tenement residents in case of fire. A city in which the houses were so closely packed together was extremely liable to extensive conflagrations, but when a tenement-house took fire below the population simply climbed the stairs to the roof and, with such of their goods and chattels as could be easily transported, escaped to the roofs of adjoining tenements or across the streets to houses not affected by the conflagration.

The extreme height and overhanging stories of the Roman buildings were a source of danger to the citizens in more ways than one. There were many important thoroughfares in Rome that were always in the shade; only at high noon did a streak of sunlight find its way between the buildings to the pavement. The streets were thus always damp, for, although Rome was sewered and there was a penalty against throwing slops into the street, the city was none too cleanly, and there were frequent humorous allusions, among the poets and writers of odds and ends, to the misfortunes sustained by pedestrians, who, while passing along the street, were deluged by buckets of slops carelessly thrown from upper windows. Pliny mentions a wedding which ended in a riot on account of the leading participants being thus besprinkled with filth — not of design, but through the carelessness of a housewife who lived in the eighth or tenth story and had no desire to work overtime in walking up and down stairs with her bucket. The narrowness and dirtiness of the streets explain the frequent visits of various forms of pestilence, which, from time to time, devastated the city; the black death, the plague, the mysterious visitations of unknown diseases, which from their symptoms seem to have been akin to cholera, yellow fever and diphtheria — all these were indirectly chargeable to the high buildings and the damp streets.

There was another danger hardly less serious. Queer as it may seem to us in these days of gas and electricity, the streets of a city which certainly contained 2,000,000, and may have had 4,000,000, of population, were, at night, in the darkness of Egypt. Such a state of things presented singular facilities for the operations of footpads and highwaymen, and the frequency with which their operations were attended by murder is shown by the numerous epitaphs that have been discovered intimating that he whose ashes lay beneath was killed by robbers. Every householder, every tenant in a tenement-house, had to look after his own security, and, accordingly, the doors of residences at dark were barred, every window was secured by a strong iron lattice, and in tenement-houses the street doors were fastened and a common fund, raised by the tenants, was provided to secure the services of a watchman to look after the building. In the tenement structures which had a respectable class of tenants the watchman went his rounds through the building at regular intervals, but in the better class of houses there were generally two or more watchmen, and the one at the front door was chained, so that he at least would give proper attention to business through the night.

Little heed seems to have been paid by the Roman builders to the

edict of Augustus, and from all accounts the houses in the tenement-district rose higher and higher, for in the next forty or fifty years half a dozen edicts were promulgated on the subject, which would not have been the case had the first been obeyed. Nero did more for Rome than any monarch before or after his day. Nero has probably been the most abused individual of ancient times, and his wanton cruelties, the barbarity with which he persecuted not only the Christians but all opponents, political or religious, his nameless vices, the murders of his relatives, chargeable to his account — all have combined to render him an object of detestation to succeeding ages. But, probably on the principle of "giving the devil his due," Professor Lanciani has shown that the merit of remodelling Rome was due to this monster in human form. If Lanciani is to be believed, the great conflagration which destroyed Rome in A. D. 64 was the work of Nero's agents, and if the latest researches are to be credited, the work was done with such effectiveness that of the fourteen wards, three were completely burned, seven were almost totally destroyed, and the other four were more or less damaged. There seems, however, to have been method in the madness of the Emperor, for some historians assert that in spite of the extent of the conflagration not a single life was lost, while others, admitting there were casualties, declare them to be very few.

However this may have been, it is certain that as soon as the ruins had grown cold the entire working population of the city was given employment in clearing off the *débris*, transporting it to the Tiber and erecting new structures. The imperial architects went to work and reconstructed the entire plan of the city. Without paying the slightest regard to previous lines, new structures were laid out as nearly straight as the nature of the ground would permit. Public squares, breathing spots, were located at convenient places in the tenement-district, and a law was promulgated that no residence-house should be higher than twice the width of the street. This seems to be the first reference among the Roman building-laws to any proportion between the height of the house and the street. The changes proposed by Nero, had they all been carried out, would have made Rome a city which for comfort, convenience and safety was unequalled in ancient times, and not easily surpassed by modern cities. Every tenement-house or residence-building was to be isolated from its neighbors; wooden ceilings in the two or three lower stories were prohibited, the ceilings rested on stone or brick arches, wood being permitted only in the upper stories. Every householder was ordered to erect a wooden portico in front of his building, that passers-by might have shelter from sun and rain, while the width of the streets and the isolation of the buildings furnished a reasonable guaranty against future extensive disasters by fire.

Very soon after the promulgation of this law Nero left Rome on his musical tour of Greece and the provinces, and his death, in A. D. 68, put an end to the reforms which he projected. They were partially carried out, but his memory was so detestable to the Romans that even the excellent plans which his architects drew up, for the reconstruction of the city, were thrown aside because they were connected with the name of the most hateful tyrant who had ever occupied the throne of Rome. The old abuses returned, public squares were sold to speculators, tall tenements, with narrow streets, again came into fashion, and such was the height of the buildings that one Roman poet mentions a friend who had to climb two hundred steps every night to get to his lodgings, while another alludes to a fire in a tenement which had reached the third story before the dwellers in the upper portions of the building became aware of its presence.

The next building-law in Rome was promulgated by Trajan, and without respect to the width of the street. It forbade a height in new buildings of more than 70 feet on the street front, like the other building-laws, making no allusion to the rear stories. The tenement evil in Rome was thus on the increase, and an explanation is found in the fact that in those days men were obliged to live close to their work. There was no rapid transportation which enabled the workman to live miles from the factory, and to travel back and forth to his home morning and evening. The workman must live within an easy walk of the place of his toil, so the tenement-districts of Rome were all located in the manufacturing quarters, and, to state the case in a modern way, all the tenement-region of Rome was one vast sweat-shop.

Rome was not the only ancient city with building-laws; Constantinople had them also. When the Emperor Constantine determined to erect his capital on the Golden Horn, the peninsula was separated from the mainland by a wall, and thus the limits of the city were defined by the imperial orders so that all might understand whether city taxes or country taxes were to be paid on property in the vicinity, for the difference between urban and suburban real-estate was then as closely defined as now. As soon as the Emperor's intention became known there was a rush of speculators from all parts of the empire to purchase property in Constantinople and vicinity, and within a year after the imperial proclamation setting apart the peninsula as the chief city the property had gone up 300 per cent. All the real-estate within the wall which Constantine had erected as the limit of the capital was held by speculators and capitalists, who invested hoping to realize a very large profit. Their expectations were not disappointed, but the change of capital from Rome to the East produced a result which was not anticipated.

The price of land rose so high that sufficient rentals could not be realized from the buildings already standing, and capitalists sent to Rome for architects to erect tenement-buildings. They came, and if

any judgment can be formed from the results of their labors, they must have come in considerable numbers, for in less than ten years after the announcement of Constantinople as the capital city the tenements of Byzantium rivalled the tenements of Rome. Constantine had fixed upon the top of the hill, the highest point of the peninsula, for his palace, but, to the intense disgust of the royal occupant, it was discovered that before the splendid residence of the Emperor was fairly finished his view of the sea was cut off by the innumerable tenements, which, standing on much lower ground, still rose high enough to impair the prospect from the royal palace. Constantine was not the man to put up with this sort of thing. He had spent too much money on his house to move, so a building edict was promulgated forbidding any tenement higher than 100 feet to be constructed, and also ordering those which exceeded that height to be reduced to the proper limit. Great was the outcry among investors and speculators, for it is said that from one block of buildings four stories had to come down. How high these stories were we have no means of knowing, but, supposing them to have been only 9 feet, there must have been tenement-buildings in Constantinople that exceeded 136 feet in height. Various emperors, after Constantine, endeavored to restrict the construction of high buildings, in order to retain a view of the sea from the imperial residence, but all in vain: the architects persisted in carrying the houses up to the legal limit, and whenever it was possible to disregard the statute it was disobeyed.

One curious case is recorded of evasion, showing that men in those days were as sharp as they are now in ignoring the spirit, while pretending to comply with the letter, of the law. Apothagos, a Constantinopolitan, erected a row of tenements about half way between the Golden Horn and the royal palace. The houses were of stone and brick up to the legal limit of 100 feet; above this there was erected a shanty structure of wood, three stories in height. The imperial building commissioners objected and ordered Apothagos to pull down his superstructure, but he refused, alleging that the law applied to permanent, not to temporary, buildings; that the wooden superstructure was only temporary, designed for the use of his workmen until the interior of the house should have been fully completed. The commissioners persisted in their order for the removal of the wooden stories, when the stubborn Apothagos went to law and applied to the imperial court for a writ commanding the commissioners to abstain from disturbing his peace and damaging his property. Law then was what it is now, and as Apothagos secured good lawyers to plead his case, on one technicality or another the matter was kept in litigation for years, meantime the structure continuing an eyesore to the Emperor and court. The matter was finally decided by the courts, ten years after litigation had begun, and Apothagos was ordered to remove his wooden structure. But in the interval Emperor Leo II died, and his successor, paying little attention to such matters, and the building-law having been disregarded in many quarters, the wily Apothagos obeyed by tearing down the wooden stories and putting a brick and stone superstructure in their stead.

The Emperor Zeno, directly after his accession, in A. D. 474, undertook to reform the Constantinople buildings, and promulgated a building edict limiting all future tenement-structures to 100 feet in height, provided the street in front was 100 feet wide. Constantinople then suffered as much from fire as it has done under the rule of the Turks, and it was after one of these great periodic conflagrations that the reform of Zeno was begun. The burned district lay to the north of the peninsula, and Zeno's architects, following the example set by Nero, disregarded all former streets and boundaries, and laid out new avenues, straight from the top of the hill to the water, crossed at right angles by streets running parallel with the shore. The streets from the hill to the water were 100 feet in width, while the avenues crossing them were 60 feet, and just in front of the imperial palace a grand avenue 150 feet in width, leading straight to the water from the central palace gate, was projected. This portion of Constantinople was thus made regular, and it is the only part of the city that now has wide streets and avenues crossing at right angles, for ere Zeno could carry out his plan for rebuilding the entire city he died, and the scheme was given up by his successors.

There is abundant evidence that high buildings, or at least buildings of a height that the ancients were not supposed capable of reaching, were to be found in almost every large city of antiquity. It is said by Herodotus that there were houses in Babylon of four stories in height, while the Carthage houses often exceeded six stories. The City of Tyre was limited to an island where the circumscribed area made property expensive, and consequently high houses were the rule at Tyre, as in Constantinople and Rome. Houses of ten stories were mentioned by several Greek historians as being numerous in Tyre and other seaside cities of the East. We know that the tenement-houses of Jerusalem must have been very high buildings, as eight and ten stories are mentioned, and one rabbi speaks of having to climb over 100 feet in the air before he could reach his room. Athens had a building-law limiting the height of structures for residence purposes to ten stories, though the height of these stories is not mentioned.

The walled cities of the Middle Ages rendered land valuable for building, and, consequently, to secure proper returns, capitalists were forced to erect high structures. On the other hand, therefore, the legal authorities were obliged to enact binding laws to prevent these buildings being so lofty as to endanger the public safety. The islands on which Venice was built were limited in area, and property

was very valuable, so much so, in fact, that the Council was compelled to pass a building-law limiting the height of buildings to 70 feet. In Florence, so long as the city was confined by walls, the limit was 100 feet; in Paris, 60; in Toledo, 75 feet. Rheims had a curious building-law, forbidding any structure for residence purposes to be erected higher than the eaves of the cathedral, and it is recorded that whenever a building was going up the sexton was enjoined to look out daily from the portholes in the eaves and see that the walls of no structure rose higher than the level of his eyes. The burghers of Amsterdam probably borrowed the idea from the Council of Rheims, and ordered that no tenement or residence house should be higher than the third story of the Rathaus, this building being the pride of the city, being thus jealously preserved in its pre-eminence over all others.

The building-laws of both ancient, mediæval and modern times have not generally applied to structures other than residences and office property, and it is marvellous to what an extent the architects of ancient and mediæval days succeeded in rearing strong, stable and lofty buildings. The Birs Nimroud, or Tower of Babel, now only a mound, has been partially excavated, and from the portions that have been uncovered it is estimated that this tower or temple must have had sixty stories and been from 500 to 800 feet in height. The Pyramids of Egypt, among the earliest human monuments, are also the most stupendous. The base of the Great Pyramid covers thirteen acres of ground, and the height is slightly above 500 feet. In other words, the great pyramid of Cheops is almost exactly the dimensions of Pilot Knob, in the southern part of this State, and this huge pile is of solid cut stone throughout. Giant structures are not confined to Egypt or Europe, for the temples in India rival, in extent and magnificence, those of the most cultured nations of the West. Nor has even the Old World a monopoly of tall buildings, for the Mexican pyramids, erected at an unknown period, rival, in size and dimensions, the second-class pyramids of Egypt.

In comfort and convenience no dwellings of any age can compare with those of our own day, but so far as solidity of construction is concerned the ancients built as substantially as the moderns, and in even the great tenement-buildings of Rome, Constantinople, Tyre and Jerusalem the quality of the materials employed and the close inspection of government officials rendered these structures so substantial that the falling of a house from any cause, save by fire, was a comparatively rare occurrence. — *St. Louis Globe-Democrat*.

BOOKS PAPERS

RECENT years have seen a vast increase in the number and scope of publications devoted to the subject of structural mathematics.

Not all of them were good, indeed most of them have been overloaded with argumentative analytics which have not facilitated the labors of the student. This cannot be said, however, of one of the latest by Professor Merriman, of Lehigh.¹ In a scope of 124 pages the theories underlying every problem with which the engineer, the architect or the mechanician would have to deal in the designing and detailing of any sort of structure or mechanism are carefully formulated and put forth in so clear and comprehensive a way as to constitute, in our judgment, the best and most concise work upon the subject which has thus far appeared. It is not to be expected that any work of this kind would be perfect. We would differ with a few of the generalizations which Professor Merriman apparently finds necessary, especially when very broad assumptions of unit stresses are put down as facts, and some of the practical statements, so to speak, would have to be so modified by circumstances as, in practice, to be almost relearned. But the fundamental theories, the methods of calculation, the processes of analysis, are perfectly clear, free from anything that savors of pedantry, and are straightforward and most refreshingly matter-of-fact. The calculus is avoided almost entirely, and in only two instances does the author even refer to it, and then he gives a solution which, while admitting the value of results deduced by the aid of the calculus, recognizes a more easily comprehended method. The book is thoroughly to be commended.

SOCIETIES

THE PHILADELPHIA T-SQUARE CLUB.

THE T-Square Club held a regular meeting on Wednesday evening, April 20th. After transacting the regular Club business, the criticism and award of Mentions on the drawings submitted in competition for the cover for the Club Syllabus for the coming season of 1898-99 were taken up.

First Mention was awarded to Nicola D'Ascenzo; Second and Third Mentions to Horace H. Burrell.

GEO. BISPHAM PAGE, Secretary.

¹"The Strength of Materials." A Text-Book for Manual Training Schools. By Mansfield Merriman, Professor of Civil Engineering in Lehigh University. New York: John Wiley & Sons. 1897. Price \$1.00.

ILLUSTRATIONS

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

THE CARMELITES, DIJON, FRANCE.

[Issued with the International and Imperial Editions only.]

COURT-YARD FRONT OF THE HÔTEL DES AMBASSADEURS
D'ANGLETERRE, DIJON, FRANCE.

[Issued with the International and Imperial Editions only.]

THIS view, like the preceding copied from Baron Taylor's "*Voyages pittoresques*," shows the building as it existed in the fourteenth century.

COMPETITIVE DESIGN FOR THE PENNSYLVANIA STATE-HOUSE,
HARRISBURG, PA. MESSRS. ALDEN & HARLOW, ARCHITECTS,
PITTSBURGH, PA.

SKETCH FOR A SUBURBAN RESIDENCE, ST. LOUIS, MO. MR.
ISAAC S. TAYLOR, ARCHITECT, ST. LOUIS, MO.

METHODIST CHURCH AND CHAPEL, LEE, MASS. MR. F. R. COM-
STOCK, ARCHITECT, HARTFORD, CONN.

COMPETITIVE DESIGN FOR CITY-HALL, BINGHAMTON, N. Y. MR.
H. J. ROSS, ARCHITECT, CHICAGO, ILL.

HOUSE FOR MRS. J. F. BOLLES, HARTFORD, CONN. MESSRS.
HAPGOOD & HAPGOOD, ARCHITECTS, HARTFORD, CONN.

[The following named illustrations may be found by reference to our advertising pages.]

DESIGN FOR FIRE-STATION: THE BOROUGH OF BOOTLE, ENG.
MESSRS. E. W. WIMPERIS & H. S. EAST, ARCHITECTS.

This plate is copied from the *British Architect*.

FREE LIBRARY: COUNTY BOROUGH OF WOLVERHAMPTON, ENG.
MR. H. T. HARE, ARCHITECT.

This plate is copied from the *Building News*.

[Additional Illustrations in the International Edition.]

INTERIOR VIEW OF THE CATHEDRAL APSE, AUXERRE, FRANCE.

CHURCH AT HENNEBON, FRANCE.

THE CHÂTEAU WELL, NANTES, FRANCE.

THE BELFRY, AUXERRE, FRANCE.

THIS view, like the preceding plates copied from Baron Taylor's "*Voyages pittoresques*," shows this familiar structure as it existed before the destruction of the *flèche*.

HEATHFIELD HOUSE, WIMBLEDON COMMON, ENG. MR. GEORGE
HUBBARD, ARCHITECT.

COMMUNICATIONS

[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

TAX-LAWS.

MOUNT VERNON, N. Y., April 18, 1898.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—I have often wondered whether architects and builders, among others, appreciate the degree to which they are adversely affected directly and indirectly by our State and local tax-laws. What remains of the home-building middle class seeks cheapness rather than excellence, and the services of architects are scarcely

in demand. The congested life in tenements is becoming one of the horrors of our modern civilization, emphasized as it is by the proximity of large areas of land held idle for speculation. Individual enterprise in manufacturing and retailing are held in check by huge trusts whose avowed purpose is to contract production and annihilate all interests but those of the few in control, while retail dealers are crushed between the upper and the nether millstones — the trust and an impoverished wage-earning class.

It is clear that these influences mean, for the majority of architects, empty drawing-boards, for our profession, equally with all others, cannot prosper upon the patronage of a few millionaires: it must be recognized as the necessity of the many, not the luxury of the few.

The truth is borne home to us that evil conditions control man's relation to the land. We feel that in some way the rights of the majority of men who expend honest effort are contracted or withheld — that we are not as "well off" as we should be were some evil spell removed. The earth is as big with possibilities as ever, while man's powers of production and his command of art and science have immeasurably increased.

One cause for serious reflection is found in the fact that all products of industry are taxed several times over. Buildings are taxed, building-materials are taxed, or "protected," or controlled by trusts (I could quote startling figures, but it would take too much space). Capital and mortgages are taxed, making harder the terms upon which money can be obtained for building and driving capital into hiding to escape taxation. The taxes of him who builds are increased by assessments for public improvements, whereas he who owns adjoining land unimproved escapes, though improvements increase the value of his land to an equal degree. The man who improves his land has to pay the assessments for both. All these things directly discourage building.

Now it is undeniable that were land-speculation displaced by land-using architects as well as all other "profitable servants" would greatly benefit, — and land-speculation can effectively and finally be stopped by making it unprofitable. The land-speculator would find his idle land a very costly investment, if he had to pay a tax approximating its rental value, and, this fact being appreciated by all in his position subject to such a law, large areas of land would be unloaded at knock-down prices till the selling price of land fell to its real value, thence advancing again with the growth of population and the revival of industrial prosperity.

Not only by opening up land to use would architecture be stimulated, but also by the removal of taxes on building, personality and capital, all of which, by reason of a land-value tax, would be rendered unnecessary, as they are certainly undesirable.

Trusts, too, whose evil influence is now similar to that of gangrene upon the human system, would find the abuse of their power, if not their existence, impossible under the purer atmosphere of more just conditions. Competition would be resumed, but upon the broad lines of excellence — not of cheapness, of mutual service, not of hostile extermination now engendered by the fierce struggle for existence.

Does it not appear to you to be reasonable that architects especially should inform themselves upon a subject so directly affecting their welfare? By advocating a tax which would secure man's equal rights to natural opportunity, limited only by his ability and industry, we would not only be advocating our own prosperity but also the eternal principles of justice, humanity and true Christianity.

Sincerely yours, "VERBUM SAP."

NOTES AND CLIPPINGS

TENSILE TESTS AT HIGH TEMPERATURES. — Some interesting experiments have been made at the Royal Technical Institute at Charlottenberg on the effect of heat on the physical properties of certain metals. The materials tested included iron, open-hearth steel, copper, samples of delta-metal, both cast and forged; and finally manganese bronze containing different proportions of manganese. To secure uniformity in the results the specimens for a series of experiments on any particular metal or alloy were cut from a single bar. The tensile strength of each material was ascertained at ordinary temperatures, and at those of 212° Fahr., 392° Fahr., 572° Fahr., and 752° Fahr., three tests being made at each temperature with each of the metals save the manganese bronzes containing more than 3.2 per cent of manganese. With these latter only two specimens were broken at each temperature. For temperatures up to 572° Fahr. the test-bars were heated in vapor jackets, which surrounded the specimen as it stood in the machine. For the temperature of 212° Fahr. the vapor used was, of course, that of water, whilst for the temperature of 392° Fahr. naphthalene vapor was employed, and for that of 572° Fahr. naphthylamine vapor. In the case of the temperature of 752° Fahr. the specimens were immersed in a bath of an alloy of lead and tin. In each case the actual temperature of the bath, whether liquid or vaporous, was determined by means of a thermometer. The extensions of the bar under test were measured by a mirror micrometer. The conclusions reached by the experimenters were that in the case of iron it is necessary to attain a temperature of 572° Fahr. before it can be forged, etc., without injury to its properties, whilst with an open-hearth steel a still higher temperature is necessary. Cast delta-metal, it was found, should be wrought at the same temperature, but in the case of the forged

metal, a higher temperature is demanded. The manganese bronzes appeared to maintain their strength remarkably well up to a temperature of 482° Fahr., and this alloy can certainly be taken as having practically the same resistance at 392° Fahr. as at ordinary temperatures. The alloy giving on the whole the best showing was found to be that containing between 5 and 6 per cent of manganese, and is the one recommended for use in practical engineering work. — *Engineering*.

THE PAVILLON DE FLORE, PARIS. — It is expected that the works required to transform the Pavillon de Flore into a temporary residence for any sovereigns who may visit Paris during 1900 will be shortly commenced. The cost will be at least 100,000*fr.*, which is a large sum, especially when it is remembered that the building may, after the close of the exhibition, remain empty for many years. The decoration will be in charge of M. Redon, architect, and it will demand a large proportion of the expense. There is now a fine ceiling in the pavilion, "The Triumph of Flora," by the late M. Cabanel. The panels of the walls of the grand staircase are filled with bas-reliefs by M. Guillaume. The building engaged the attention of Hector Martin Lefuel, the successor of Visconti at the Louvre, during a period of ten years, and it was incomplete when the imperialist reign came to an end. — *The Architect*.

A FIRE-CURTAIN OF WATER. — From time to time, it has been proposed to protect buildings against fire from without by a water-curtain, to be made to fall all around the structure. This scheme is being put in use at the Chicago Public Library. Mr. N. E. Weydert, supervising architect of the building, is father to the idea, and has received a hearty indorsement of it from Chief Swenie of the Chicago Fire Department. The arrangement is extremely simple. A seven-inch steel water main is being laid around the top of the building, upon the broad stone table formed by the top of the coping. This pipe will be connected to force-pumps in the basement of the building, and, through perforations properly arranged, will insure the introduction of a substantial sheet of water from cornice to pavement, around the whole or any imperilled portion of the building. The system of piping will be so arranged as to be operated in prescribed sections, and additional relays of smaller pipe will be placed in position above windows and doors, to complete the curtaining of those points, should the curtain, in the main, be broken by wind impingement against the building. — *Boston Herald*.

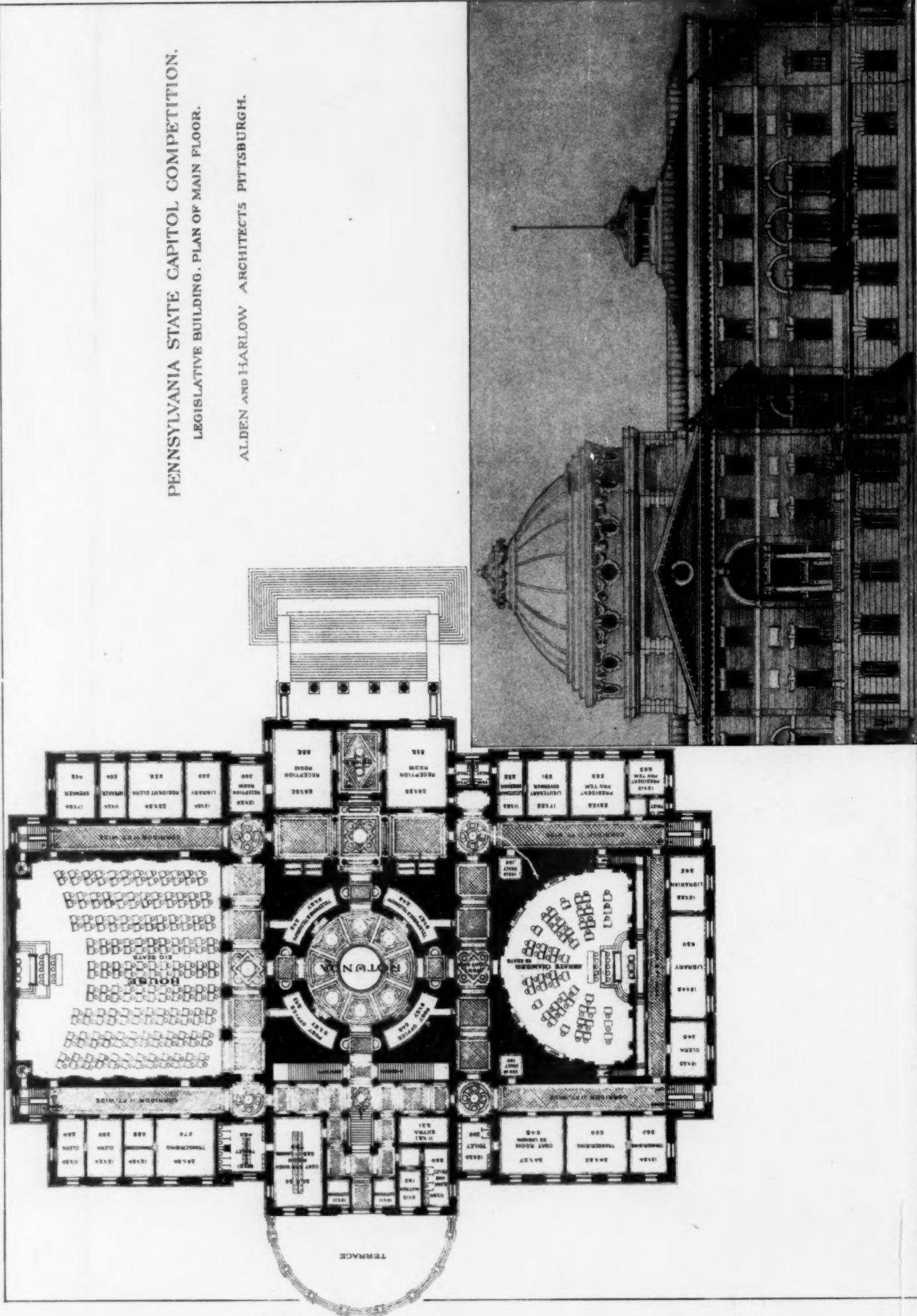
COMPRESSING LIQUID STEEL. — In casting steel in large ingots for heavy ordnance or armor plates it is usually found that the upper portion of the mass is less dense than the lower part. The weight of the molten metal itself in the mould produces this effect. Unequal density, however, is highly undesirable. It has been customary, therefore, to cut off about one-third of the ingot at the top and reject it, using only the more compact and uniform part of it. Within a few years, however, it has become the practice at three or four of the great gun-making establishments of the world to subject the molten metal to pressure with powerful hydraulic apparatus. The compressor which was set up in 1896 at Creusot, France, for this purpose was recently described by *Engineering*. The mould is strengthened to meet the extra strain put upon it. The metal is poured in from a 35-ton ladle, or a 65-ton ladle, or from both. Greater pressure is employed with a big ingot than with a small one. But the maximum never exceeds two and three-quarter tons to the square inch. Not only guns and armor, but also a great variety of other forgings for naval purposes, notably shafts, are now made from steel which has first been subjected to this treatment. Messrs. Schneider & Co., at whose works is situated the press just mentioned, supply many private manufacturers who do not care to make their own castings, as well as the French Army and Navy, with steel. — *N. Y. Tribune*.

A CHOKED SEWER OPENED BY RATS. — Tom Maguire is a genius. He is a yard foreman at the Laclede Gas Company's plant. A sewer-pipe leading from one of the buildings to the river bank, 160 feet away, became clogged. The pipe was sixteen feet below the surface. Maguire had been thinking about a plan for several days. One night he caught two big gray rats, and these he determined to put into the sewer. They were taken to the mouth at the river bank and released. The opening was then closed securely behind them, leaving the animals with only one chance of life. That was to go straight ahead. And they did. Several more rats were caught and turned into the sewer, until a dozen were gnawing away in the pipe. The morning after the last detachment joined the main army, water began to trickle from the pipe. Iron rods and steam were applied. In ten minutes the sewer was clear. — *St. Louis Post-Dispatch*.

THE SWISS MOURNING-URN. — Swiss funeral customs are peculiar. At the death of a person the family inserts a formal, black-edged announcement in the papers asking for sympathy, and stating that "the mourning-urn" will be exhibited during certain hours on a special day. In front of the house where the person died there is placed a little black table, covered with a black cloth, on which stands a black jar. Into this the friends and acquaintances of the family drop little, black-margined visiting-cards, sometimes with a few words of sympathy on them. The urn is put on the table on the day of the funeral. — *N. Y. Evening Post*.

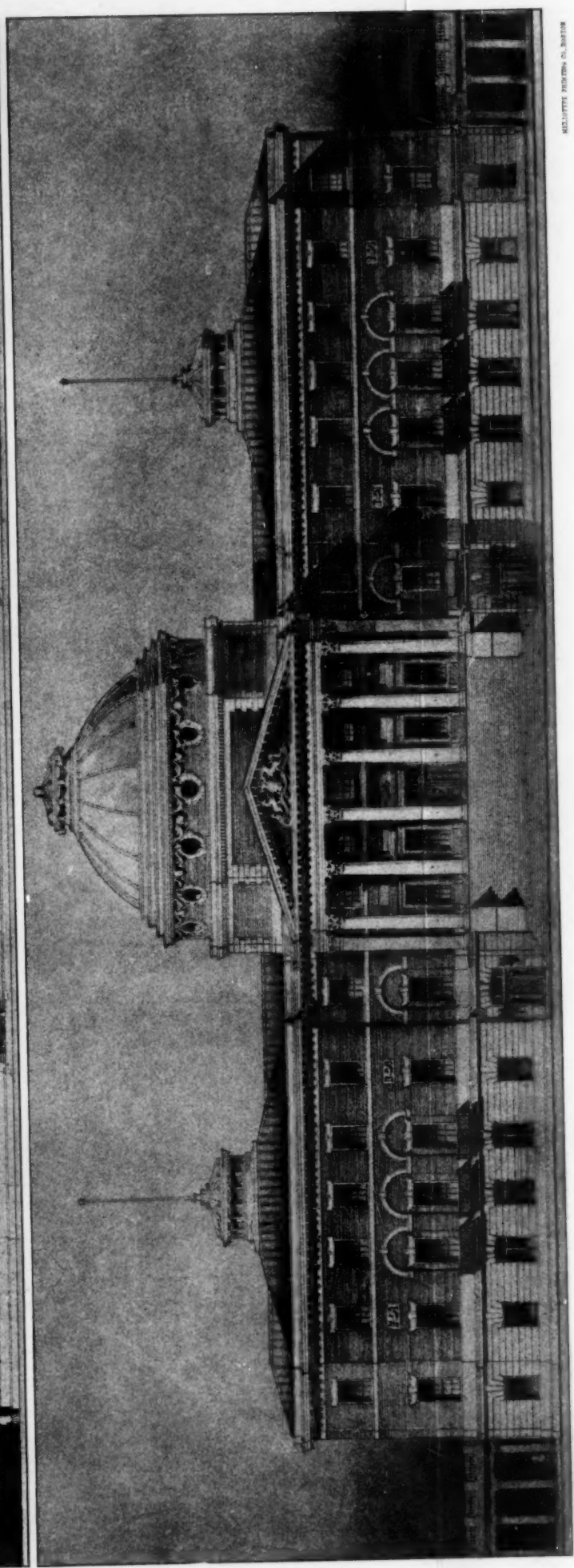
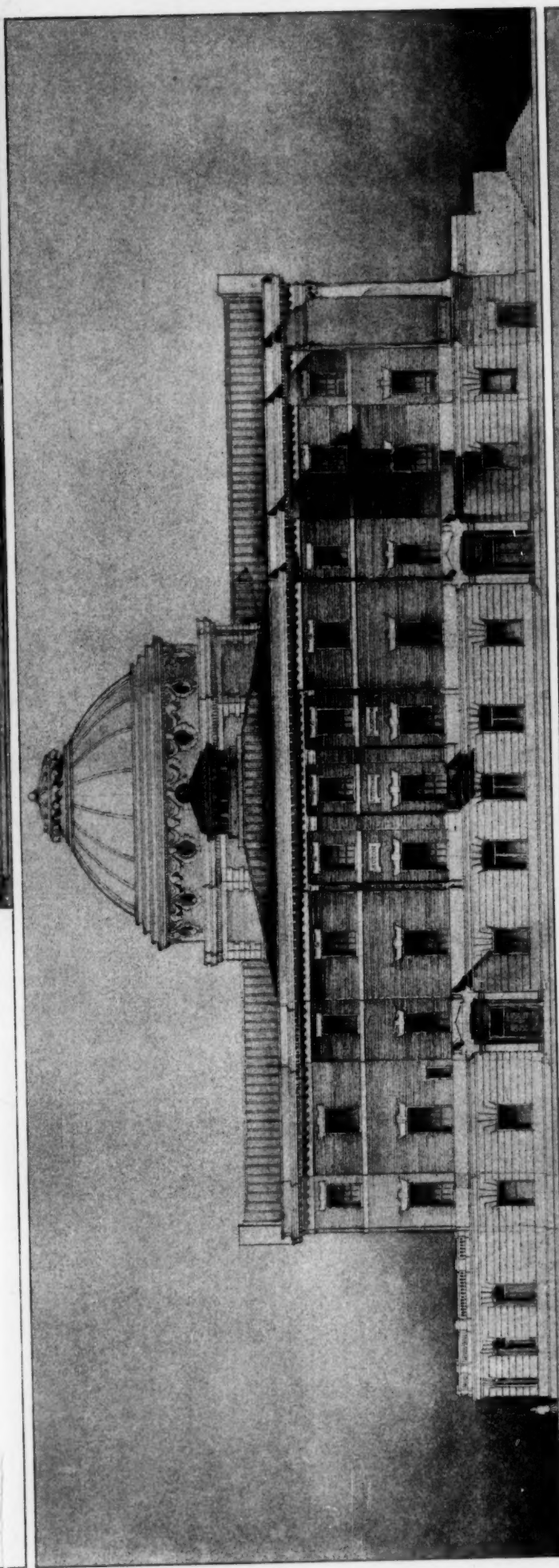
INEBRIETY IN RESPONSIBLE POSITIONS. — Perhaps a record fine for drunkenness has been put on record. The Manchester Ship Canal Company was awarded £12,987 19*s.* 2*d.* damages against the owners of the steamship "Harold," which ran into and smashed the Latchford lock gates on the canal, in consequence of her engineer, who was intoxicated, not having reduced the high rate of speed. Plaintiffs originally claimed £13,701, and the master allowed £10,846, and on plaintiffs' appeal the amount was raised to the sum above stated. — *Invention*.

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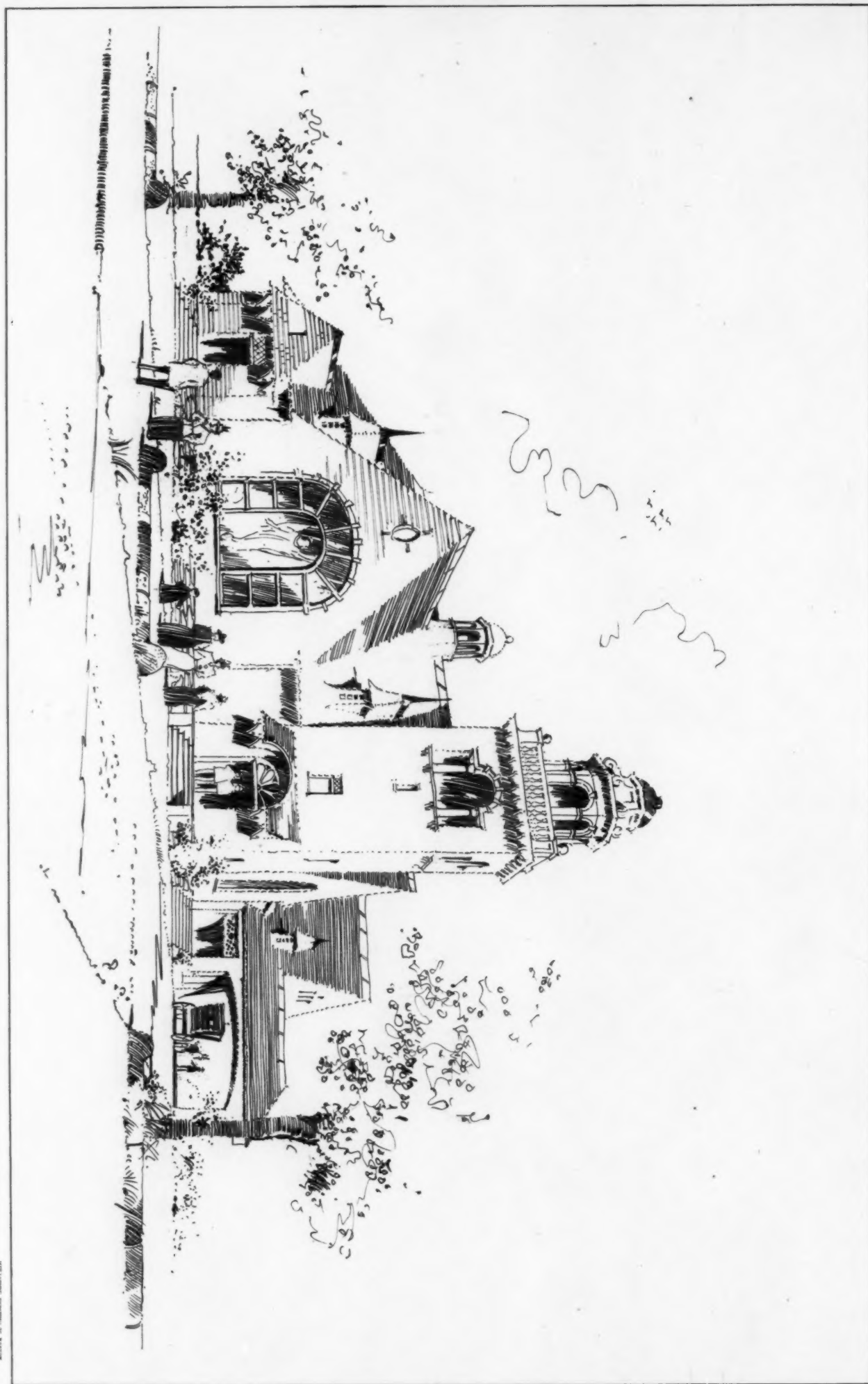


PENNSYLVANIA STATE CAPITOL COMPETITION.
LEGISLATIVE BUILDING. PLAN OF MAIN FLOOR.

ALDEN AND HARLOW ARCHITECTS PITTSBURGH.

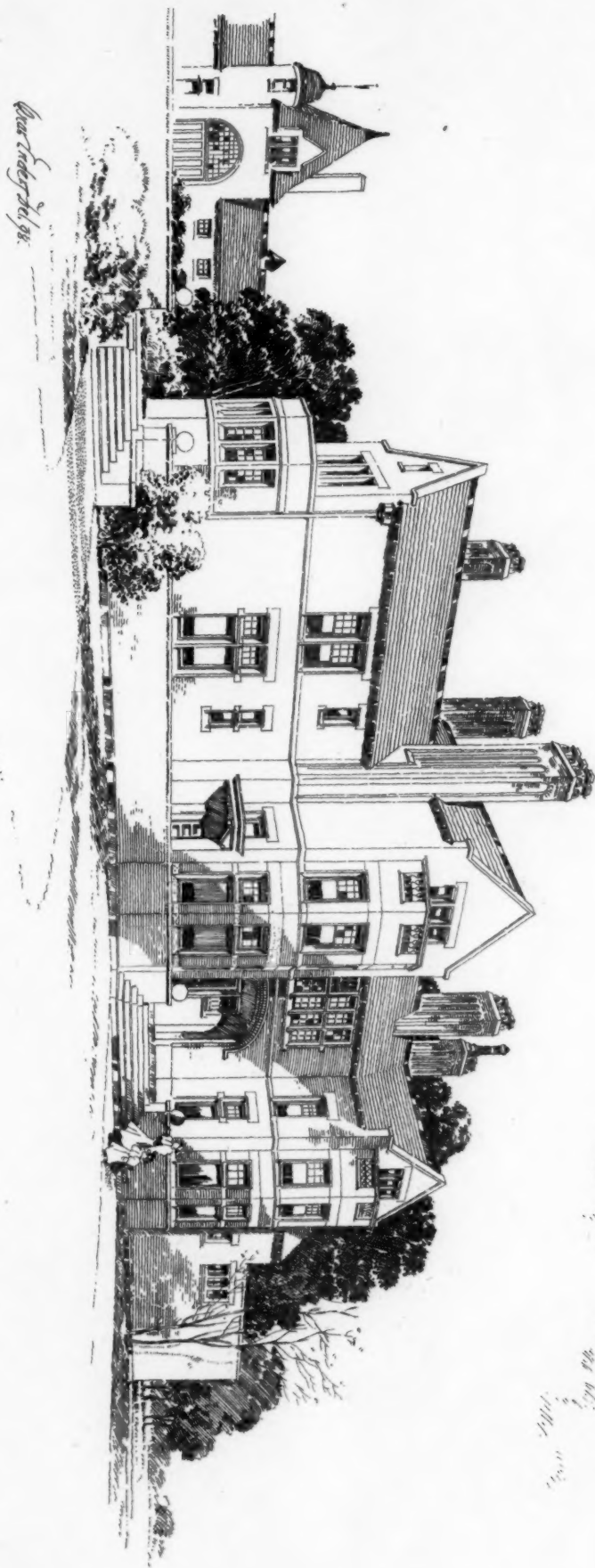


NEW YORK STATE CAPITOL

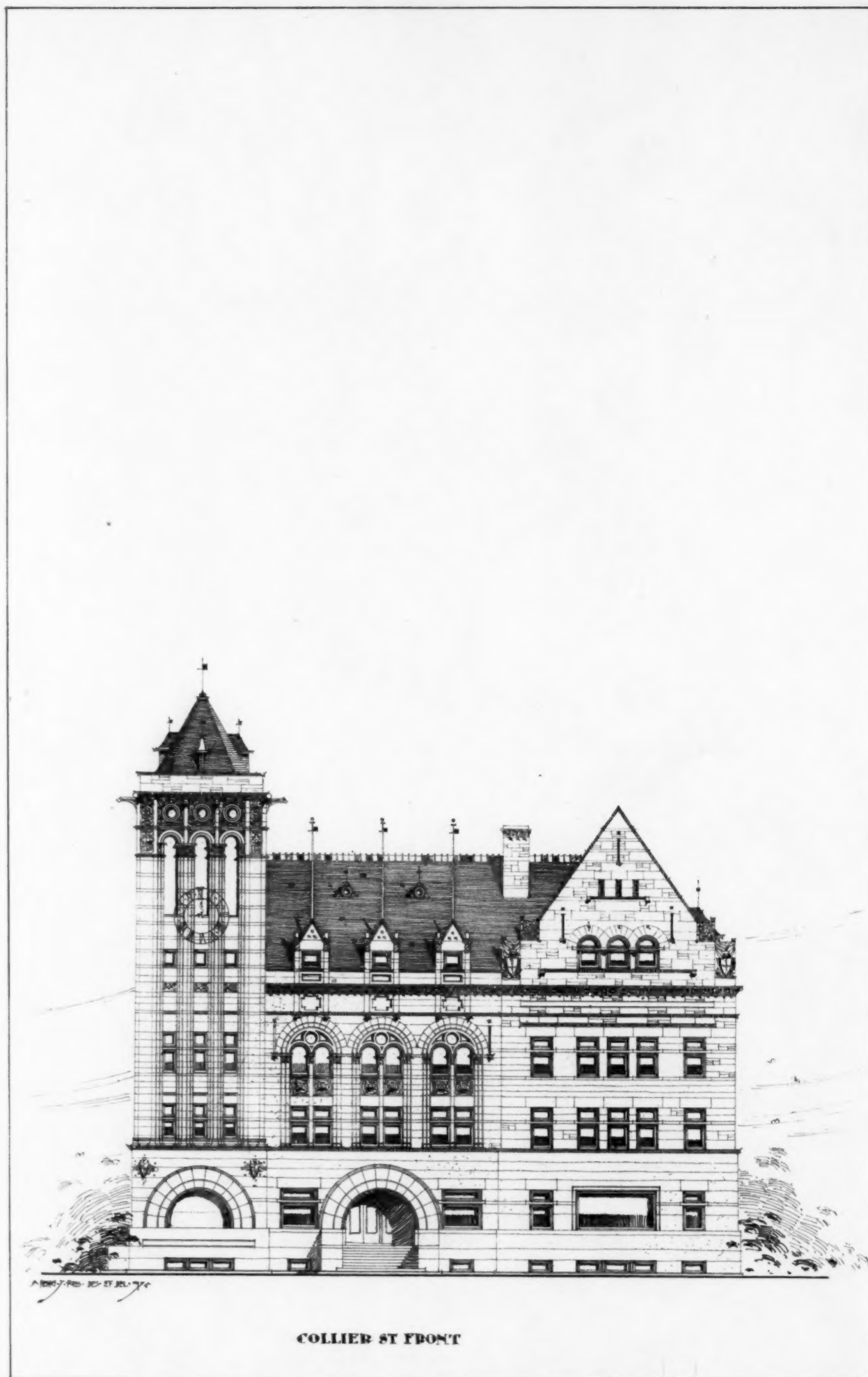


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KETCH FOR A SUBURBAN RESIDENCE
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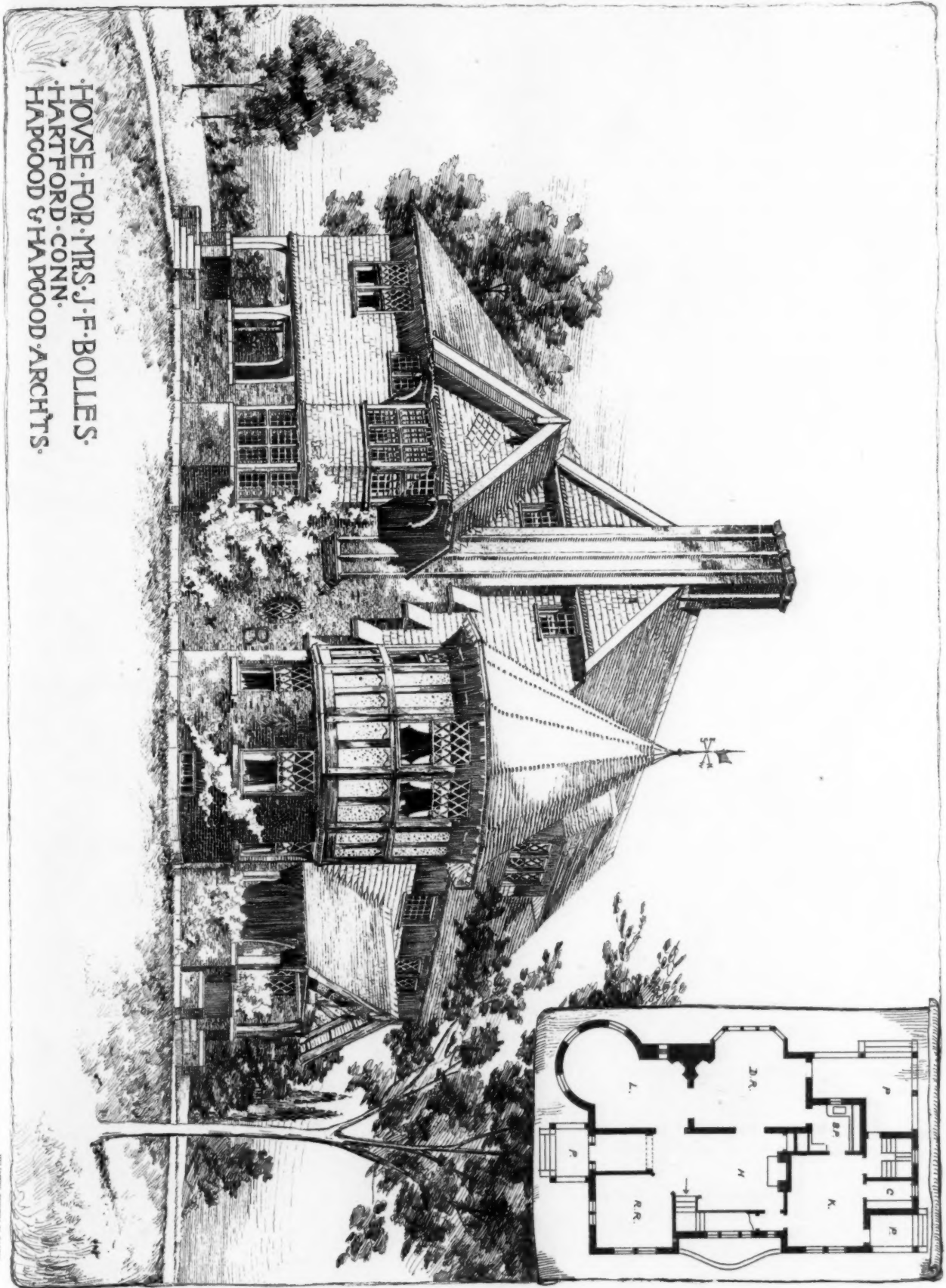
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