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CONTENTS.

SUMMARY:—

The Sessions of the Congressional Labor Committee.—Two Encouraging Features of the Investigations.—Ought an Architect's Fee to be Secured by a Lien on the Building.—Some Reasons against such Protection.—An Elevator Accident in Chicago.—Recognition of the Merits of an American Architectural School.—Establishment of a Master-Builder's Course at the Illinois Industrial University.—The Rhode Island School of Design

81

RICHARD UPJOHN

82

DILAPIDATIONS

84

THE ILLUSTRATIONS:—

Hotel Brighton, Coney Island, N. Y.—House in Boston, Mass.—Design for a Cottage at Westchester, N. Y.—House in Washington, D. C.

85

CORRESPONDENCE:—

Letter from London

85

THE TREATMENT AND DISPOSAL OF SEWAGE IN CHINA

86

MR. RUSKIN ON COLOR

87

NOTES AND CLIPPINGS

88

THE sessions of the Congressional Labor Committee have continued to be more interesting than those of most commissions, not so much because of the fruits they have borne as because their subject is one which is really important to the public. The testimony of the witnesses lately examined has been less visionary than that which was volunteered at the earlier sessions; but, as was to be expected, the most of it has been from persons who simply looked at the subject from the point of view of their own peculiar avocations or associations. To one the cause of the depression of labor is to be found in the decline of the shipping interest; to another in taxation; to others in protection; to others in the national debt; to others in the currency; to others in the introduction of machinery. One ascribes it to bad living and consequent sickness among the laboring classes, another to imprudence, another to intoxication. The remedies suggested are therefore generally of the nature of patent medicines. The few men who have broadly studied the condition of the country naturally confess themselves unable to point out the one determining cause or the specific remedy, while it is easy to show many things that act mischievously. It was a foregone conclusion that the work of this committee should disappoint those who expected from it any generally satisfactory explanation, or any legislative remedy. But if the people and press of the country, and especially the more sensible part of the workmen, follow the committee with any attention, it will do a useful work in merely showing up the conflict and the absurdity of a great mass of popular opinions. It is a good thing that many wild theories which are fermenting in the dark should be thrown up into the light, and the bubbles which they generate scattered in the open air. It is also a good thing to let people whose notions are not wild but only one-sided and narrow see how little ground they cover in comparison with the whole question.

Two things meanwhile come to notice which are encouraging in their different ways, as far as they go. One is an indication that the idle condition of the laboring men is after all not so bad as it has been represented to be. Some of the testimony before the committee shows this to be the case; and a recent publication of facts by the Massachusetts Bureau of Labor Statistics shows that in that State at least, where the condition of labor has been thought to be worse than anywhere else in the country, except in Pennsylvania, the number of unemployed is much less than has been asserted. One witness had estimated the unemployed in the whole country at nearly four millions, which is something like half the entire voting population; and others have assumed that they were two hundred thousand in Massachusetts alone, which is a still greater proportion. The labor statistics of that State indicate that the number there is about thirty thousand, including men and women, or say one in fifty of the population. This is to be regretted, but when we allow for those who will not work under any circumstances,—and they are very many,—and for those who are out of work because they will not take the wages they can get, the

outlook is by no means so bad as we have been told to believe. The other encouraging thing is a project which has been started in Chicago for a great shoe factory, to be owned and conducted by the workmen themselves. Such a venture as this, much as it has been talked about, is, we believe, an entirely new thing in this country. Its success we should suppose to be very doubtful; but a much more important thing, broadly speaking, if it should be set going and carried on long enough to let its working be seen, would be the opportunity it would give to an important body of workmen—the Crispins, who have the thing in hand—to find out what the position of a capitalist really is, and to learn how much care, hard work, difficulty, risk, and perhaps loss, is involved in the management of his capital.

THERE has more than once been question among some architects in the United States as to whether an architect could and should enforce a claim for his professional fee by a lien on the building which he has carried out for a client. The impression has been that existing laws, at least in most of the States, do not give him a lien; and there has even been some talk among the profession in certain places of amending the laws so as to allow the architect the protection which the mechanic has. A late decision in a Pennsylvania court bears upon this point, and is, therefore, interesting. An architect sued for compensation for his services in preparing drawings and specifications for a house in West Chester, and for three visits, "to locate the building and explain the drawings to mechanics;" he applied for a lien in support of his charge. It appeared that only one of these visits was for the purpose of explaining drawings to the mechanics, and that this one was before the house was begun. This proved to be the turning point in the question, the plaintiff's counsel having cited a previous case, in which a lien had been granted to an architect, the judge in his opinion declared that the essential point in the previous case was the fact that the architect in charge by superintending work, inspecting materials, and examining accounts, had actually "performed work about the erection and construction of the building," which under the terms of the statute gave him a lien; whereas in the case under consideration the architect, having never seen the building, could not be said to have performed work "for or about the construction" of it, the mere making of plans and specifications not being work under the meaning of the statute. The plaintiff, therefore, had no better claim to a lien than the scrivener who copied the specification, or the surveyor who laid out the lines of the building.

SOME expressions in the published report seem to imply that in the winning case the architect, or he who sued as such, had actually done the work of the builder and even made his drawings inside the building itself as it went on. The question of work actually done at a building or away from it, no matter what its kind, is a mere question of verbal interpretation of a statute, and of no importance otherwise; but the division of an architect's work into two kinds, one of which, the properly architectural, being done at his office, is unprotected by a lien, while the other, done on the spot, the superintendence, is protected,—this division is of some importance to those who are disposed to claim such a protection. Nevertheless we must say that it seems to us very undesirable for architects to have to do with liens. It is enough, perhaps, to say that there is no better reason to urge for them than the mere fact that the existence of the buildings gives an opportunity for them. Workmen are assumed, whether wisely or not we will not pretend to judge, to deserve, or need, a special protection above other creditors. They live on days' wages, more or less from hand to mouth, and may be supposed to be in greater need than other men of making sure of prompt payment. Hence the concession to them of a special remedy. But we see no such reason, nor any other, why architects should be preferred to other classes of creditors. On the contrary there is an instinctive feeling, which we think may be trusted, that such a remedy is out of keeping with the professional relation between an architect and his client. The thought of such a special weapon held in reserve is at variance with the feeling of personal confidence which should be the characteristic of this relation. There is still too common a disposition to regard the architect's function as a mechanical one, and any such habit as resorting to liens would in its degree encourage this disposition. There is no question that the

dignity of a genuinely professional attitude is of real value in strengthening the confidence and respect which a profession inspires. Any loss of these would be poorly repaid by the very small advantages which architects could in the long run derive from liens.

The folly of intrusting to inexperienced and ignorant persons the working of machines more or less complicated in their construction is made more apparent every day. The familiar experiment of trying to put a belt over shafting in motion often results in the dismemberment of the experimenter; elevators take uncontrollable flights up or down their wells, because of the ignorance of those who undertake to guide them; locomotives and stationary engines explode, generally because of the carelessness of *soi-disant* engineers; and just at this season the portable engines, which in the West are used in great numbers in harvesting the large crops, are exploding with uncomfortable frequency. These too frequent accidents are often followed by coroner's verdicts, more or less ludicrous in their award of blame. On Friday, August 23, three men loaded upon the elevator in the Rawson Building, Chicago, a piano weighing nine hundred and fifty pounds, and began to descend with it from the fifth story of the building. After going but a few feet something gave way and the elevator with its load fell to the bottom. One of the men saved himself by jumping off after the elevator had fallen about fifteen feet, another seized the brake-rope and climbed to the top, while the third fell to the bottom and was killed. The testimony at the inquest was conflicting, some experts saying that the accident was caused by the ignorance of the men on the elevator, who brought about the accident by their improper use of starting-line and brake-rope; others, that the kind of brake in use on this elevator—a Storer Union Safety Elevator—was never reliable, and almost all agreeing that the machinery was not properly adjusted, shafts being out of line, and one of them two inches out of the horizontal, so that the strain was brought on one corner of each tooth of the gear-wheel in such a way as to cause a breakage. But the machinery was so wrecked that no reliable explanation could be reached. At all events, some one was to blame; for only two days before the accident new cables had been put on, and had things been as much out of order as the testimony indicates, it must have been apparent to the workmen who made the repairs. Knowing, perhaps, of the verdict rendered in the case of the elevator accident at the Grand Hôtel, Paris, and feeling that it was incumbent on them to censure some one, as it certainly was their duty so to do, the coroner's jury in its wisdom have brought in a verdict which says that "the owners of said elevator are to blame for such accident from their neglect in keeping said elevator in repair," and this, too, in the face of the testimony of the agent of the building, who declared that one of the conditions of the lease of the building was that the lessors should keep the elevator in repair.

In the published list of medals which have been awarded to foreign architects for the excellence of the designs which they this year exhibit at Paris, there is, we regret to say, no mention of an American name. Although the Trustees of the American Institute of Architects did not see fit to charge themselves with the task of gathering such a collection of drawings and photographs, as should best show what the profession has done and is doing in this country, we had hoped that some of our most able architects would send, as individuals, enough of their work to show that, though courtesy to the government commissioners may demand that the façade of the United States section on the Rue des Nations be acknowledged as typical of our architecture, it is not in achieving such results that American architects are exclusively employed. Yet the architectural talent of the country has not been passed over without such recognition of its merits as can be expressed by a silver medal, although it is to the work of the "babes and sucklings" of the profession that this compliment has been accorded. The students of the Architectural School attached to the Massachusetts Institute of Technology may indeed take satisfaction in the knowledge that this solitary laurel branch has been won by their careful work. Of the real architectural merit of this work, of the study and thought bestowed on its development, as well as of the value of the course of instruction by which it is produced, evidence is at this moment afforded by the somewhat similar collection of drawings at the fair of the Massachusetts Charitable Mechanic Association, which opened on Monday last in Boston. Although this collection is made up in great part of drawings which it

was thought not best to send to Paris—of refuse material, as it were—it will well repay the careful attention of the architect, draughtsman, or student who can devote to its inspection the time it deserves.

The catalogue of the Illinois Industrial University comes to us in a more attractive form than usual, illustrated as it is by six photographic views of the interiors of several of the college rooms, notable among which are the two views of the art gallery, which show that the institution is possessed of a fair collection of casts of busts and statues, both antique and modern, while hung upon the walls and screens are a number of framed engravings and some architectural photographs. In looking through the list of students we find that out of a total of three hundred and four male and sixty-three female students, thirteen students, one of whom is a lady in the fourth year of the course, are studying architecture. In the curriculum of the architectural school attached to this institution, we have now only to notice one new feature. This is the establishment of a course for those who desire to become master-builders. The idea is excellent, and as there is apparently no intention to grant a certificate or diploma, the limitation of the course to one year's work is not as injudicious, perhaps, as it at first blush seems to be. At any rate, it is a case where half a loaf is better than no bread, and we trust that in the future there will be a large number of mechanics, both old and young, who will profit by this opportunity to obtain some portion of the theoretical knowledge which master-builders ought to possess, but which the demands of daily practice too rarely allow them to acquire. At present one student is pursuing this course, which includes instruction in wood, stone, brick, and metal construction, orthographic and architectural drawing, instruction in agreements, specifications, estimates, heating, ventilation, and architectural design, and shop-practice in carpentry, joinery, and cabinet-making. The catalogue contains no reference to the summer session of classes in wood-working and iron-working which, as we have mentioned (*American Architect*, May 25, 1878), was to be held this summer in the Exposition Building at Chicago.

APPARENTLY the Directors of the Rhode Island School of Design have succeeded in obtaining the money which we once stated (*American Architect*, May 25, 1878) they must have, before the school to which the Women's Centennial Commission had appropriated its surplus moneys could be opened. At present rooms are fitting up in the Hoppin Homestead Building in Providence for the use of this school, which will probably open in October, as originally intended. We do not know just what is to be the course of study to be pursued, but we understand that, although it is to be essentially a school of industrial design, instruction will be given in other branches of art. The school is to be under the charge of Mr. Charles A. Barry, who for more than twenty years has been an art teacher, and during six years was supervisor of drawing in the Boston public schools. Mr. Barry is one of the eight gentlemen who, in 1858, founded the Boston Art Club.

RICHARD UPJOHN.

It is the good fortune of the successful architect that his record cannot be confined to books and papers, like those of other professional men, cannot be shut up in galleries and inaccessible houses like those of other artists, cannot be buried in the treacherous memories of relatives and friends like those of the rest of his fellow-creatures, but is permanent, visible, and out-of-doors; his whole professional career is illustrated by a series of durable public memorials. When character and opportunity so happily combine in a human life, that, in its closing, it asserts itself as a complete and symmetrical whole, thus monumentally set forth before the eyes of mankind, there seems to be no room for vain regrets. In considering the professional career of Richard Upjohn, therefore, the task of the biographer is easy and in every way agreeable; this career, moreover, is well worth tracing, with such circumstances and detail as our space will allow, not only because it is an essential part of the history of American architecture, but because it may serve as a proof that common sense, sound judgment, careful observation, energy and integrity of character,—all of them qualities more or less attainable, even for "plain people,"—may combine to produce a reputation which, if not quite heroic in its proportions, is certainly great in its results. It was not by brilliant and exceptional genius that this good fortune was achieved, but be

fidelity in the development of natural gifts, and by hard work judiciously bestowed. There was more prose than poetry in this busy life, and it therefore touches our common sympathies, and runs parallel to our common experience often enough to serve as a practical example and an encouragement.

Mr. Upjohn was born at Shaftesbury, Dorsetshire, England, and after enjoying fair educational advantages, was apprenticed to a cabinet-maker, and finally became a master in the trade. But in 1829, in his twenty-eighth year, he came to the United States, and settled in New Bedford, Mass., where he followed his craft in the day-time and taught drawing in the evenings. Three years afterwards he went to Boston and entered the office of Captain Paris, who was then the architect of the Boston Court House. We soon behold him his own master again, and one of his first designs as an architect were the fences and entrances to the Boston Common. St. John's Church, at Bangor, Me., was also one of his earliest works. But his professional career may be considered as dating from the preparation of the designs for Trinity Church, New York.

This wealthy corporation, in the year 1833, had decided upon some alterations and enlargements of their old edifice, but finally found it expedient to build anew. The site was cleared, therefore, and the present church was erected between the years 1833 and 1845. It was then, and perhaps still remains, the most conspicuous religious monument in this country, and the advances since made in the science of architecture, in the knowledge of precedent, in the experience with great works, and in improved professional education and methods, has not served by comparison to dwarf its proportions or lessen its excellence as a work of art. It still holds its preëminent position with dignity and firmness.

We are not prepared to give a chronological, or, indeed, a complete list of the ecclesiastical buildings which Mr. Upjohn produced after this conspicuous and fortunate beginning; the succession is imposing in numbers, and fully sustains the high standard which he had himself set up. Among these, in the city of New York, are the church known as Dr. Pott's, on the corner of Tenth Street and University Place; the Church of the Ascension, near by, on Fifth Avenue; that of the Holy Communion, on Sixth Avenue and Twentieth Street; that of the Nativity, on the East side, St. Thomas's, Trinity Chapel and Schools, and Dr. Adams' Presbyterian Church, on Madison Square; in Brooklyn, L. I., are Christ and Grace Churches, and the Church of the Pilgrims; elsewhere the succession is marked by the Church of St. James, at New London, Ct.; St. Paul's at Buffalo, N. Y.; St. Paul's at Brookline, Mass.; St. Stephen's and Grace Church, at Providence, R. I.; the Presbyterian Memorial Church, at Springfield, Mass.; the Parish Church, at Portsmouth, R. I.; and a chapel at New Berlin, N. J. . . . To these may be added St. Mark's, built on a steep hillside for Asa Packer, at Mauch Chunk, N. J.; St. Thomas's, at Taunton, Mass.; Grace Church at Newark, the Geneva Memorial Church, St. Peter's Presbyterian Church at Rochester, and Zion Church at Rome, N. Y., and churches at Salt Lake City, Millville, Mass., and Geneseo, N. Y. Mr. Upjohn also prepared plans for the Church of the Advent, in Boston, which were not carried out. He also erected wooden churches at Stockbridge and Plymouth, Mass.

"A gentler life spreads round the holy spires,
Where'er they rise the sylvan waste retires,
And airy harvests crown the fertile lea."

Wordsworth's sonnet may be quoted as applicable also to these scattered churches, but mainly in another sense. As the first examples of pure Gothic built in a country almost entirely ignorant of true mediæval forms, they immediately dispelled the illiterate traditions of the style which were until then generally accepted as correct and satisfactory, and planted seeds of knowledge which fell not upon stony ground. Although a few excellent architects had preceded Mr. Upjohn in the field, their work had been based principally upon Renaissance types, and every effort in the direction of a Gothic revival had been made without the advantage of a recognized standard of the style. Such standards were planted wherever Mr. Upjohn's spires arose, and even to this day they may be accepted as safe guides and sound examples. Though perhaps never surprising us with new combinations of original design, never unduly imaginative and rarely poetic, his Gothic has, at least, always been sober and correct, less ingenious than learned, but by no means confined to merely common or conventional types. His churches are not marked by personal conceits,—Mr. Upjohn did not write his name upon his architecture,—but his works have all the grace which can be conferred by variety within the

strictest limits of loyalty to style; and so also when he sought his effects outside of his English types, as in the Romanesque of St. Paul's Church at Baltimore, his archaeological correctness was never suffered to stiffen his hand or to interfere with a just freedom of design. But his natural refinement of thought and delicacy of imagination and invention had a clearer and more fortunate field in the tombs and monuments of Trinity churchyard and Greenwood Cemetery.

Mr. Upjohn's service to the architecture of America consists in his timely appearance upon the scene, an artist at heart, a man of business and enterprise, thoroughly equipped with all the knowledge and forces essential to the propagation of pure style in a new country. It is safe to say that from the time of his first public appearance as an architect our civilization began to enjoy the emotions and appreciate the sentiment of mediæval art, which before that time had rested upon the bastard traditions of Walpole's villa at Stanberry Hill, and Beckford's Abbey of Fonthill, upon Abbotsford, and the castle of Otranto.

Although his professional career was concerned with domestic and civic works in large proportion, his reputation must repose mainly upon his ecclesiastical monuments and upon his knowledge of and respect for the Gothic style of England. His domestic work was almost, if not entirely, confined to conventional forms of Italian Renaissance, as if he considered his Gothic a thing consecrated to far more serious uses, and his dwellings were rather dignified and academical than picturesque according to the modern type. They generally stand "four square," with no playful conceits or eccentricities, no ingenious devices or far-fetched oddities of detail either in plan or elevation. His characteristic respect for monumental types followed him also in this department and chastened his faculty of invention. Among his town and country houses we are enabled to recall the Lytchfield and Packer houses at Brooklyn, that of J. H. Burch, Esq., at Chicago, of Edmund Dexter, Esq., at Cincinnati, of G. M. Atwater, Esq., at Springfield, Mass., of Jas. A. Cowing, Esq., at Buffalo, of John S. Stone, Esq., at Bay Ridge, L. I., of W. M. Stebbins, Esq., of Tarrytown, the Johnston House at Flatbush, L. I., the Forsyth house at Kingston, N. Y., that of Mr. H. B. McKean, of Philadelphia, those of Messrs. E. King, Amos W. Smith, and others, at Newport, that of Mr. Wm. Mason, at Taunton, Mass., the Thayer houses in and near Boston, and those of Messrs. Seth Adams and Marshall Wood, at Providence; also the six gate-lodges of Samuel Zimmerman, Esq., at Clifton, near Niagara, the building of the mansion having been stopped by the untimely death of the proprietor. Lindenwald, the residence of President Van Buren, and the seat of the Patroon at Albany, were altered and enlarged under his direction. In all these works it is evident that Mr. Upjohn's habits of design were controlled by a sober sense of duty, and were never at the mercy of passing fashions or of his own thronging fancies; they are distinctly, and often severely, classical in conception and treatment, and, as such, being more in sympathy with the prevailing contemporary architectural idea, have hardly served, like his churches, to mark a step of artistic progress far in advance of his time.

In civic buildings Mr. Upjohn's experience was more limited, but in this field also he preserved his characteristic sobriety and correctness. He built Trinity Building and the Corn Exchange Bank in New York, a savings bank at Kingston, N. Y., a school building at Brooklyn, a hotel and public school at Taunton, Mass., and a railroad station at Norton, Mass.; he also designed a chapel for Bowdoin College, a library for Brown University, and had prepared complete drawings for the proposed new Columbia College buildings which were to have occupied one of the blocks in the vicinity of the Roman Catholic Cathedral, when the old Deaf and Dumb Asylum property was secured for this purpose and the new project abandoned.

Although Mr. Upjohn prepared designs for the city hall in Brooklyn, and, in 1855, for the state library building at Albany, with the understanding, we believe, that he was not the only architect who had been invited to do so, these were exceptional cases, and his attitude of hostility to architectural competitions was assumed with deliberation and maintained with decision and self-denial. He lost no opportunity of impressing upon the younger men in the profession the importance of maintaining the dignity of their calling by abstaining from especial bargains with reference to their fees and from all competitions which implied volunteer or unpaid labor. The tone of his annual addresses as President of the American Institute of Architects was always very earnest in claiming for the profession a

social and moral position far in advance of that which it had hitherto occupied; and his theory was strengthened and illustrated by his own example of honorable practice. Indeed, his service to American architects was quite as important as his service to American architecture; no one in the profession took a more active part in the planting and cultivation of that wholesome sentiment of fraternity and mutual support which first found expression in the founding of the Institute in 1857.

From that time to the year 1876, when he resigned the office of President, which he had held from the beginning, he was unceasing in his efforts, so far as his powers and opportunities allowed, to raise the standard of practice and to illustrate the advantages of union and good-fellowship among all the members of the profession. For this service his memory deserves to be cherished by his brethren. A complete memorial of his professional experience and observation would necessarily include the history of the greatest development which our art and the practice of it have experienced in this country.

His national position was recognized by his election as honorary member of the Royal Institute of British Architects, and of the Institute of Portuguese Architects. What other honors may have been conferred upon him by foreign societies we are not prepared to say; but certainly the large tribute of affectionate respect bestowed upon him by those who have known him personally, who have worked with him and watched his successful career, who have been counselled and encouraged by him, is far more significant than any merely official recognition, however graciously accorded.

DILAPIDATIONS.

OUR purpose is to give some details concerning the Law of Dilapidations as it now stands, and to examine a few typical cases of its application which have come under our notice, and which will serve to show by practical illustration the disadvantages, as well as the benefits, which accrue to the Church and the clergy by the present working of the law.

Let the results, however, of our former inquiry¹ be constantly borne in mind, which are these, namely, that the original statute Law of Dilapidations is still in force, with the single exception of the clause relating to the priority of the debt of dilapidation-money over other debts; that this law is a good and equitable one, which no one complains of; and that it is in the mode of application of the law only that a change has been made, which bears heavily, and, we think, unjustly, upon the mass of incumbents and as we shall see, tends more and more every year to defeat the main objects aimed at by the framers of the Act of 1871.

We may supplement our former general statement by the following details. Every incumbent is bound both by statute and common law, to keep his house of residence on the glebe in repair and to restore or rebuild it, if necessary, without addition, alteration, or improvement, out of the income of the living; but if it is too small or mean, it may be enlarged. He must insure it against fire in some office approved by Queen Anne's Bounty, and for a sum agreed upon with the patron and ordinary. There is no liability as to the mode of cultivation of the *land* attached to a living, but the fences, farm-buildings, etc., must all be kept in repair, and come thus under the law, even if they have been erected by himself. Timber on the glebe may, of course, be felled, but only for repairs necessary to the buildings or fences, and wood may be cut, but only for necessary firing. The sale, among other personal effects, of faggots, etc., cut on the glebe, which we sometimes observe in auctions held by the executors of a deceased incumbent, is altogether illegal. Most of the fixtures and additions, which in the case of ordinary tenants would be removable, are not removable; nor, as we said before, is any charge made for dilapidation of *inside* paint and paper. But the successor to a vacating incumbent may compel the removal of all additions made by his predecessor, if they are of an unnecessary character, and would encumber the living, such as hot-houses, aviaries, etc., and in default of removal, the expense of getting rid of them would be charged as dilapidations.

Now all this is very right and proper, with perhaps the single exception relating to the *land*. An incumbent will not be likely to leave his land altogether uncultivated and fallow; he is, however, tempted to exhaust it, and so to reduce the income of his successors; as, for instance, by selling off the haycrops by auction every year at their highest price, and neglecting the proper manuring of the land afterwards, whereby the soil is much deteriorated. Some action with regard to the *land*, as well as the *buildings*, of a living might perhaps have been desirable in the new law. But this is a minor point. Let us rather see how the new law works in practice. And first, as to the appointment and remuneration of surveyors. We must remember that they are appointed for each diocese by the rural deans, and that, in most dioceses, the main part of their remuneration consists, besides fees, of a percentage on the amount of the work ordered by them to be done. Here, then, are two points not quite as they should be. Not only is the surveyor naturally tempted

to make his estimate too high, with the view, unconsciously no doubt, of increasing his percentage on it, but when the work is done and paid for, if the contractor, as is often the case, performs the work for less than the estimated sum, the surveyor still gets his percentage on the estimate, while the difference between the estimate and the actual sum disbursed is not returned, as one would naturally expect it would be, to the incumbent who has to pay, but is kept for further repairs hereafter! This is unjust to the outgoing incumbent. Take a case, in illustration, which has come under our notice. We will call the Benefice A. Here the estimated cost of dilapidations amounted to £66, and the repairs were all executed to the satisfaction of the surveyor and a certificate for the five years' exemption from further liability given, for the sum of £36! So that the late incumbent of A has had to pay £30 more than he in equity should have done. For dilapidation money is a debt from the old incumbent to the new incumbent, and from the new incumbent to Queen Anne's Bounty, who seem unable, for some reason or other, to return any money once paid to them.

Again, not only does thus the outgoing incumbent, or his executors, suffer hardship, but the incoming incumbent must look carefully to see that he himself is not made to undergo something still worse. For while the former has no fees to pay to the surveyor for his work, and has his liability limited to the payment of the actual sum specified for dilapidations, all the onus, risk, and fees fall upon the latter. If, for instance, the old incumbent is bankrupt, the new incumbent is still bound to pay over to Queen Anne's Bounty, within six months of his induction, every farthing of the dilapidation money, which, as in such case he cannot get it from his predecessor, he must pay out of his own pocket, or, if allowed to do so, he may in certain cases mortgage the benefice, and so reduce its value, suffering thus, in any wise, a hardship which, although the law justly proposes to ease it for him, Queen Anne's Bounty, as we remarked in our previous article, is at present unwilling to act upon so as to help him by a loan. A case of this kind is that of Benefice B. Here the living was worth only £150 a year. The dilapidations amounted to £600, for the house was old, and there were large out-buildings. The incumbent who died left no effects whatever. He was an old bachelor, who had simply lived on his income. The new incumbent, also a poor man, took the living without much consideration, and was instituted and inducted, and thus irrevocably bound to pay over at once four years' income before touching a penny of the endowment! Doubtless he has often wished that his bishop had left him in his curacy. Observe how careful the Act is to provide a remedy for such hardships, and contrast with it the action of Queen Anne's Bounty in refusing loans sanctioned by the Act. We can give even a worse case than this in Benefice C. Here the late incumbent was appointed in 1868. The living was worth £120 a year, and he died in 1874, leaving only a daughter, and the sum of £1,000 in consols. The surveyor ordered the house, which was a timber building erected on piles, and much dilapidated, to be entirely rebuilt at a cost of £848! Here was a poor incumbent mulcted of more than all he had ever received from his living during the six years of his tenancy, and his daughter left penniless, only because he had the misfortune to be one of the incumbents of 1871, for whom special provision was made in the Act, and Queen Anne's Bounty has made that provision a dead letter!

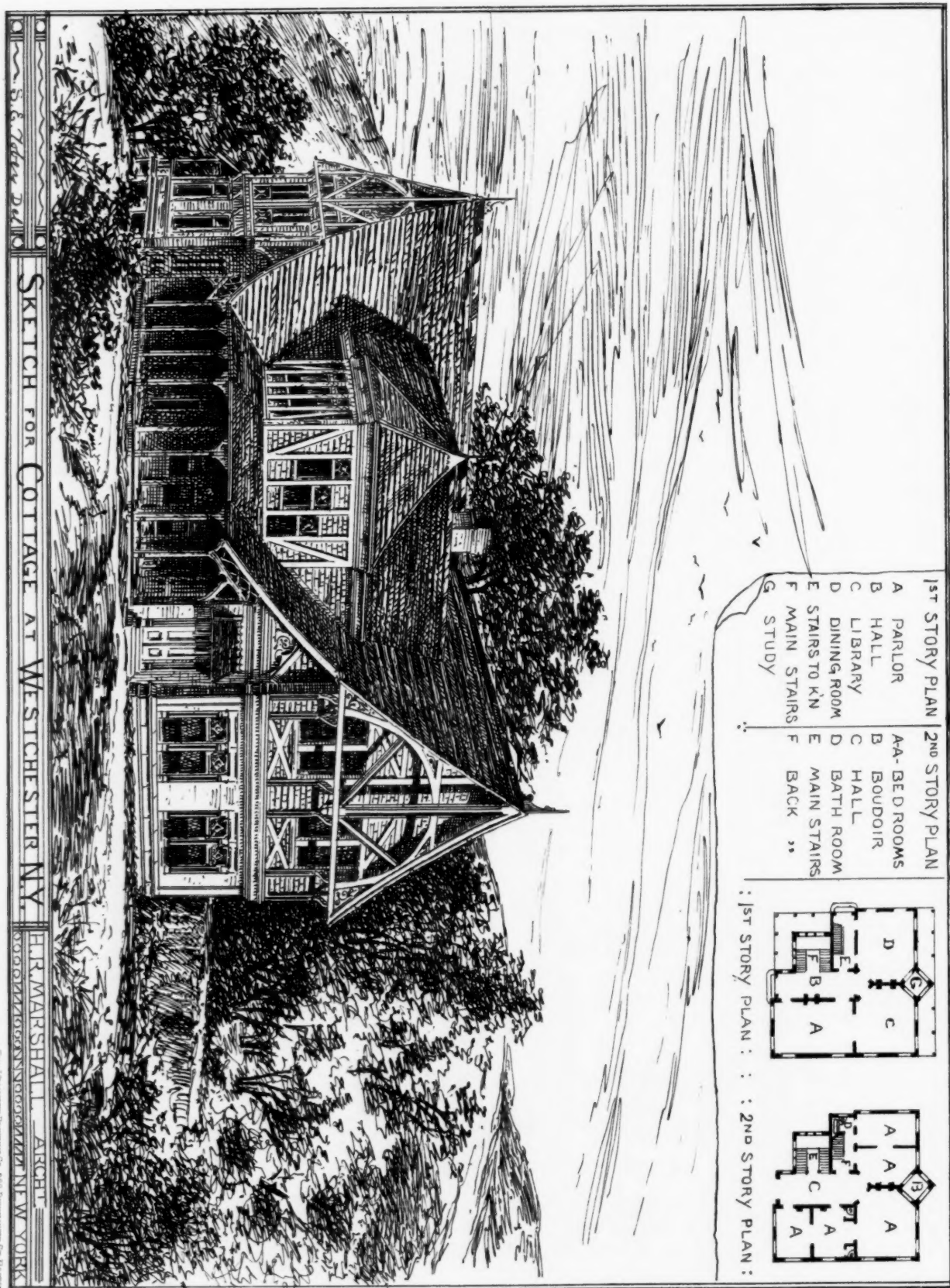
But, it may be asked, cannot persons in such circumstances appeal against these hardships? Is there no way of softening down such cases? Yes. In the case of Benefice C, the appeal was suggested against the surveyor's award in the manner prescribed by the Act for cases of appeal. But, with the advice of counsel, the matter was dropped, and no appeal was made, for the simple reason that the law directs that the whole costs of appeal shall be paid, and the whole expense of re-valuing disbursed, out of the estate of the outgoing incumbent instead of out of the living, and the sole executrix of this poor parson was willing rather to submit to pay the whole sum demanded than risk the charges and anxiety of litigation.

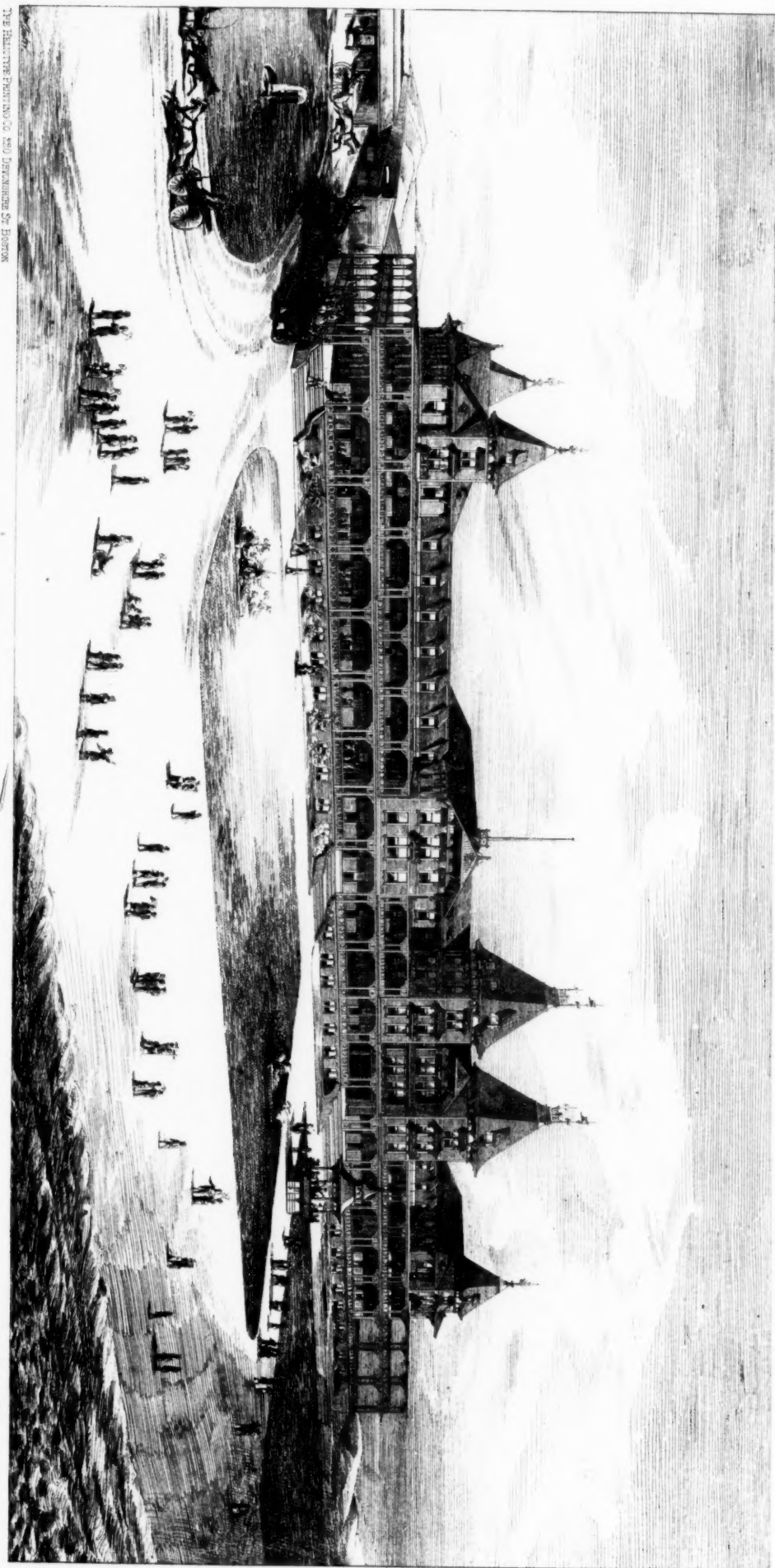
The diocesan surveyors, who are generally architects and men of good standing and honorable dealing, are gradually through practice becoming more acquainted with their new duties, and, we trust, more lenient in their awards; but their first introduction to a comparatively new experience created by the Act naturally tended to lead them to proceed more according to the strict letter of the law than according to equity; while it was the cause, especially with those surveyors who live in London, of some curious manifestations of ignorance about agricultural and local customs. In certain parts of England, for example, all the fences round fields are composed of loose stone walls without mortar or cement. One surveyor ordered all such walls to be rebuilt with cement on the glebes. This was, of course, too absurd to be acted upon, and he had to revoke his order, after learning a little about the habits of the district. Another surveyor that we had heard of, though we have not had the pleasure of actually meeting him, directed that all the pig-styes should be painted within and without with three coats of white paint! Other surveyors seem puzzled by the differing local customs, whereby, in some parts, all field gates are painted, while in other parts of the country such a thing is never heard of. Most of them, however, seem to be agreed that it shall be part of their duty to order the painting of all external wood and ironwork not painted the year before with two coats of paint, to empty all cess-pits and drains, and, in general, to put things in complete readiness for the new tenant.

¹ Building World for December, 1877.



THE HELIOTYPE PRINTING CO. 220 DORCHESTER ST. BOSTON

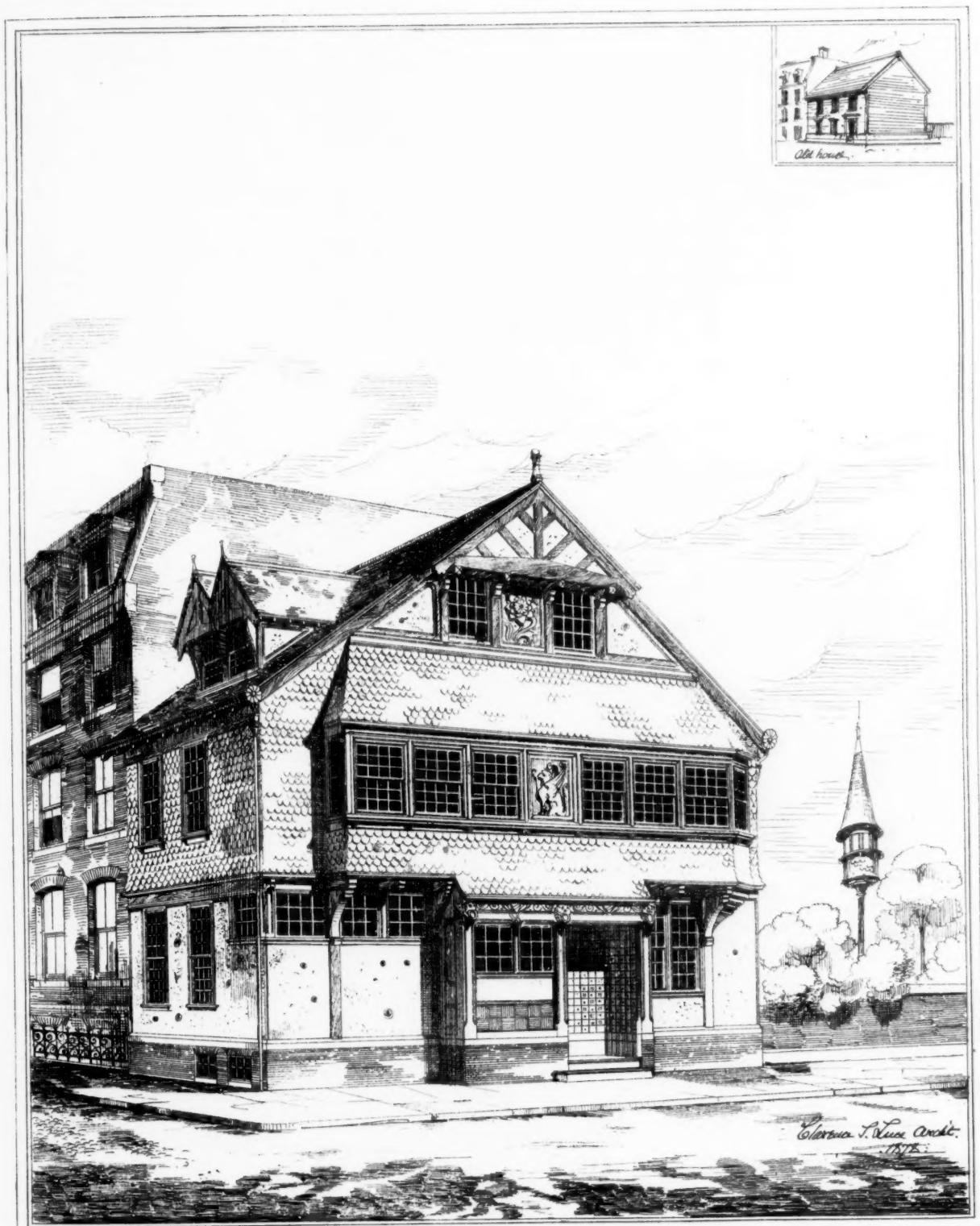




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REMODELLED HOUSE AT THE CORNER OF MT. VERNON & RIVER STS.
— BOSTON, MASS. —

Our readers will doubtless be glad to have all the items in an average and typical case, which we will call that of Benefice D. This will enable them to see more clearly how the onus is divided. It is as follows:—

1. *Schedule of Dilapidations* (Benefice D), October, 1872:—

Stop round sash-frames; leak round chimney; mend panes of glass; cut out cracks and stop ceiling; repair chimney-piece; new keys and locks; mend decayed flooring; repair plastering; lead lights; repair door and cupboard; new nosings to stairs; repair treads, risers, newels, and balusters; new collar to roof; repair decayed sleepers and joists; renew skirting and rafters; repair soil-pipe, and empty cess-pit; new sills to doors; mend and renew thatching; renew stucco on walls, and point; new eaves-gutters; scarf door-posts; repair and paint field-gates; paint all outside iron and wood. — Total, £61.

2. *Fees paid to bishop's officers:*—

Secretary's order for inspection, £1 1s.; filing order by registrar, 3s. 4d.; copy for Queen Anne's Bounty, 5s.; secretary for bishop's consent to alter plan, £1 1s.; filing it by registrar, 3s. 4d.; secretary for bishop's countersignature to surveyor's certificate for payment, 5s.; registrar for filing surveyor's certificate of execution of work, 3s. 4d. — Total, £3 2s. 0d.

3. *Surveyor's fees:*—

Survey, valuation, and reports, with two copies, £5 5s.; travelling and other expenses, £2 8s. 6d.; survey and certificate, under section 44 of the Act, £1 11s. 6d.; expenses, 10s. Total, £9 15s. 0d.

Here the £61 is paid by the late incumbent's executors to the new incumbent, and by him to Queen Anne's Bounty, while the new incumbent pays all the fees of both bishop and surveyor.

We are glad to find that the case of repairs to parish churches, mentioned in our former article, appears in a fair way of being settled. It arose thus. The Church of All Saints in Lambeth is one of those built under the Church Building Act, which enacts that, as in the case of all other churches, the freehold shall be in the incumbent, but that all repairs shall be done at the expense of the parishioners. This church had become so far out of repair as to be unsafe to passengers along the street, and, in fact, a portion of the tower fell not long ago, and seriously injured a woman. The incumbent, Dr. F. G. Lee, was called upon by the Metropolitan Board of Works to repair the church, as church-rates had been abolished without any provision being made for the maintenance of the fabric, and no one else could be made to pay. The order of the Board, if allowed, would have become a precedent for making every incumbent in the country responsible for the repairs of his church, as well as of his house, and would have thrown an intolerable burden on the clergy. Dr. Lee refused to do the work, and the Board, acting under the provisions of the Metropolitan Building Acts as to repairs of "dangerous structures," then did the work, and sued the incumbent for £105 incurred in the operation. Dr. Lee, supported by his bishop, declined to pay, and showed, at the trial of the case, that his freehold in the church was by no means the same kind of freehold as that of an ordinary proprietor, and that he was unable to sell the church, or raise money upon it to pay off the debt. Although the Lord Chief Justice has acquitted the clergy of the responsibility thus sought to be imposed upon them, and so far justice has been done, we are, however, still without legislation on the subject of the important question, Who is to keep the Church in repair? The clergy are clearly not liable. The laity refuse to have church-rates. Can we depend on voluntary help? We fear not, in the case of most parishes at any rate.

In conclusion, what is the result, so far as benefices are concerned, at which we are arrived in the present state of the dilapidation question? We are sorry to say that the mode of application of the law is still tending to defeat the object of it. Two practical rules appear to be gaining acceptance with the clergy, forced upon them by the circumstances to which we have alluded. The first is, to take more than ordinary precautions in accepting a living, and to decline to take anything under a really valuable benefice if there is the least suspicion of insolvency in the case of the outgoing incumbent, or if the repairs are likely to be a serious matter. This tends to prevent really good and hard-working men, if poor, from entering the Church, or it keeps them down as mere curates, in which position their £150 or £200 a year is quite unincumbered. The second rule is, having once taken a living, and got settled, to do absolutely nothing more towards the preservation of the buildings, except the merest necessary repairs against weather, without which the house would be uninhabitable; and for this reason that, since the surveyor must find something to survey, and has in so many cases ordered things absolutely at variance with the ordinary rules of the craft, it is much cheaper, so they say, in the long run, for a poor incumbent to pay more in comparison on his avoidance of the benefice, than to be constantly compelled to repair bit by bit every year. It is true that the bishop or archdeacon may compel proper repairs during the life of the incumbent, and may deprive for neglect; but unless this is acted up to better than it is at present, or unless some change is introduced into the working of the law, and especially into the attitude which Queen Anne's Bounty takes up towards the clergy, we fear that this demoralizing effect will be only increased, instead of diminished, as time goes on. — *The Building World*.

THE THEATRE AT MILAN. — The centenary of the famous Teatro della Scala is to be observed by the redecoration of the building.

THE ILLUSTRATIONS.

HOTEL BRIGHTON, CONEY ISLAND, N. Y. MR. JOHN G. PRAGUE, ARCHITECT, NEW YORK.

HOUSE ON MT. VERNON STREET, BOSTON, MASS., REMODELLED BY MR. C. S. LUCE, ARCHITECT, BOSTON.

This sketch shows the alteration in the house at the corner of River and Mt. Vernon streets, belonging to the estate of Mrs. Martha Smith. The old house was built about 1840, and was an uninteresting structure. The alteration was made in the early part of the present year, at a cost of \$2,000. The first story is of cement, plastered, and is not a concrete wall, and the second story is of tiles made at Akron, Ohio, which are the first of the kind ever manufactured in this country, after an English pattern. The manufacturer states that he ruined nearly 20,000 tiles before he was successful in getting the 5,000 used on this building, and even these are not altogether satisfactory in color. The carving in the panels is of pine. The late Inspector of Buildings was averse to allowing the alteration under the Building Act, it being a wooden building and within the fire limits, but Mr. Damrell took a different view of the matter, and very kindly allowed it. The upper sashes of the first-story windows are filled with cathedral glass, and the dining-room is decorated by Mr. Frank Hill Smith.

SKETCH FOR A COTTAGE AT WESTCHESTER, N. Y. MR. H. R. MARSHALL, ARCHITECT, NEW YORK.

HOUSE OF L. CLEPHANE ESQ., WASHINGTON, D. C. MR. JOHN FRASER, ARCHITECT, WASHINGTON.

CORRESPONDENCE.

THE EXHIBITION OF TURNER'S WATER-COLORS. — MR. RUSKIN'S PRESENT ESTIMATE OF TURNER'S METHODS AND GENIUS.

LONDON, August 15, 1878.

AN exhibition of unusual interest closed here last week. It was a collection of water-colors and studies by Turner, belonging to Mr. Ruskin, who prepared a catalogue, with copious notes on each sketch; to this was added, also with explanatory and critical notes, a series of the Oxford professor's own studies in line and color. The severe illness which last February struck down Mr. Ruskin threatened to prevent the completion of the catalogue, but the Rev. W. Kingsley, an old and valued friend, came to the rescue, and added the concluding notes, which, to judge from the enthusiastic foot-notes Mr. Ruskin was able subsequently to add, are worthy examples of Turner worship. This pamphlet of some one hundred and forty pages is of deep interest, expressing as it does the latest, and perhaps the last, opinions of the author of "Modern Painters," whose views are known to have undergone such marked modifications that he has persistently refused to yield to the demand for a cheap and popular edition of his earlier works. His writings of late have all been fraught with weariness and bitter disappointment, which in these last productions are suddenly changed to a tone of sadness and almost of gentleness, strange indeed in the author of those scathing early polemics. With the exception of a constant and really puerile protest against the march of civilization in desecrating with its works of engineering the picturesqueness of nature, his only denunciation now is of himself, and contemporary art escapes scot-free. In his preface, he manfully turns upon himself, saying, "As in my own advancing life I learn more of the laws of noble art, I recognize faults in Turner to which once I was blind; but only as I recognize also powers which my boy's enthusiasm did but disgrace by its advocacy." In the notes themselves his disciples must be startled by occasional reservations and criticisms of Turner's work which they would never have dreamed of permitting to themselves. Think of his speaking of the large water-color, the "Battle of Fort Rock" in the National Gallery, as an inferior work, terribly forced and conventionalized! and saying in regard to one of the earlier Italian studies: "It fails in many respects, especially in the ludicrous figure; he was not yet able to draw either the figure or even animals with skill." Further on: "In both, however, the trees are still very rudely drawn." Of a later study, done, however, in his prime, he says: "It will, I hope, put an end (with No. 28) to the ordinary notion that Turner 'could not draw trees.' But it may very well encourage the also very ordinary, and much better founded notion that he could not color them. His dislike of fresh green is a curious idiosyncrasy in him; no drawing exists, that I know of, founded frankly on that key of color." Could Turner's bitterest critics have made a severer stricture upon him as a landscape painter than to say he could not color trees? I quote these examples to show how time has changed his former partisan opinions. Yet through all, the old love and admiration consecrated by so many years of devotion to his hero is his ruling principle, softened only by a weary sadness revealed in his conclusion to the Introduction: "Oh, that some one had but told me in my youth, when all my heart seemed to be set on these colors and clouds that appear for a little while and then vanish away, how little my love of them would serve me when the silence of lawn and wood in the dews of morning should be completed, and all my thoughts should be of those whom, by neither, I was to meet more!"

The sketches are classed in five groups, corresponding to as many decades, beginning with the year 1800. The first group is character-

ized thus: "His manner is stern, reserved, quiet, grave in color, forceful in hand." They, in fact, partake of the prevailing fashion of water-colors at that period; for at the end of the last century, water-color drawings — as the English still call them — were literally such, pencil or ink drawings, with simplest pale flat washes. In speaking of one of this group, in which a portion is quite finished, leaving the rest outlined on the untouched paper, Ruskin says: "I can never get the public to believe, nor until they believe it can they ever understand the grasp of a great master's mind, that, as in fresco so in water-color, there can be no retouching after your day's work is done. . . . There is absolute demonstration in this, . . . that Turner did his work bit by bit, finishing at once, and sure of his final harmony." This certainly was not the ordinary method of English water-colorists, but it is, curiously enough, that of the present Italian school; for the latter in their figure studies completely finish, beginning with the head, each bit of drapery, often without even sketching in the rest, which results in purity of color at the expense of relative values.

In regard to the second group, which comprises pictures of Swiss scenery, he writes: "And observe generally, Turner never, after this time, drew from nature without *composing*. His lightest pencil sketch was the plan of a picture, his completest study on the spot a part of one. But he rarely painted on the spot; he looked, gathered, considered; then painted the sum of what he had gained, up to the point necessary for due note of it." An admission which the upholders of Turner's more forced effects would do well to mark, as it allows to individual criticism a bolder judgment of the truthfulness of the scene presented than would be used in face of studies made on the spot. Of notes made for some of his Swiss pictures near the close of his life, Ruskin also says: "His way was, therefore, to make rapid pencil note of his subject on the spot; and, it seems, at his inn in the evening to put so much color on this outline as would recall the effect to his mind." This habit explains, but does not excuse, the false values constantly found in Turner's works, more especially in his foregrounds, for his notes recording chiefly atmospheric and distant effects, he was left to compose from *chic* those very parts of his work which most demanded local study.

There is real frankness in this reference to a landscape of his middle period: "But he has missed his mark in the vermilions of the foreground, which fail in distinction of hues between sunlight and shade; the violently forced shadows on the field (false in form also) not redeeming the want of tone, but rather exhibiting it." A just criticism, but one which impartiality would apply not to this example only, but to the majority of Turner's foregrounds, for there is a great similarity among them: the same crude greens and yellows to give aerial effect to the distance, the same grotesque figures outlined in vermilion and without real solidity or modelling to give relief.

Referring to those almost invariably grotesque and brutal figures, Ruskin philosophizes thus: "I think it will be seen that much of what the public were most pained by in Turner's figure drawing arose from what Turner himself had been chiefly pained by in the public. He saw, and more clearly than he knew himself, the especial forte of England in 'vulgarity.'" Then referring to these figures drawn from low life, he adds: "With all this, nevertheless, he had in himself no small sympathy; he liked it at once and was disgusted by it; and, while he lived in imagination in ancient Carthage, lived practically in modern Margate. I cannot understand these ways of his; only be assured that what offends us in these figures was also, in a high degree, offensive to him, though he chose to paint it as a peculiarly English phenomenon, and though he took in the midst of it, ignobly, an animal English enjoyment, acknowledging it all the while to be ugly and wrong." This wanton brutality in his figures increased as he grew older. Failing at first apparently from sheer inability to draw his forms and then later impatiently slurring or exaggerating them, he transformed them into defiant caricatures. But his apologist finds a more poetical reason, and of his middle period says: "Thenceforward he shows clearly the sense of a terrific wrongness and sadness, mingled in the beautiful order of the earth; his work becomes partly satirical, partly reckless, partly — and in its greatest and noblest features — tragic." Further on: "With this change of feeling came a twofold change of technical method. He had no patience with his vulgar subjects, and dashed them in with violent pencilling and often crude and coarse color, to the general hurting of his sensitiveness in many ways." In conclusion: "But assuredly, whether faultful or fated, real conditions of error affect his work from this time forward, in consequence of which it in many respects greatly lost its influence with the public. When they see, gathered now together in one group, examples of the drawings in which the calamitous change is expressed most clearly, the public may, perhaps, see how in the deepest sense their own follies were the cause of all that they blamed, and of the infinitely greater all that they lost." Rather hard, that, on a public which was inclined to believe as Mr. Ruskin now does, before his eloquence persuaded it that Turner's art was perfect and above all reproach. The English public have now so well learned their lesson that one has only to stand near the Turners in the National Gallery to hear one monotonous stream of adulation. The public dare not criticise Turner, — it would be "bad form." Is it a suspicion of this which has finally opened Mr. Ruskin's eyes to some of his hero's defects? Does he begin to realize that blind admiration of Turner may, after all, be but little better than that similar faith in Claude which he was at such pains to uproot? Be

this as it may, of those paintings in the National Gallery, which by the beauty of his early writings he has — to the mere reader, at least — forever endowed with the most wondrous powers, he now says: "But they rotted, rent, faded, and mouldered away in miserable patches of variously deforming changes, *darkening* in spots, but to the rich colors bringing pallor, and to the subtle ones absolute effacement. Cleaning and retouching over cracks followed, and the ruin is now total."

I have quoted so largely, thinking it unlikely that this catalogue, in spite of its deep significance, would reach America, and that the many followers of Mr. Ruskin there can but be interested in this revision, in his maturity, of more youthful opinions. I have selected the passages with the design of simply illustrating this change of tone, and in no unfair spirit, for the beauty and power of Mr. Ruskin's writings command my sincere admiration, — always making due allowance for the exaggeration which keen partisanship drove him into. The collection of drawings itself is a fairly representative one; the drawings showing little that is unusual in style or power (at least to this generation) among the first half, and the latter containing — in spite of the fine collections Mr. Ruskin has generously given to Oxford and Cambridge — some of the most perfect examples of Turner's genius. This is perhaps best characterized in the poetical — sometimes wild — flight of his imagination, controlled rather by the laws of composition than by those of nature; his daring and original conception of effects encouraging him to force them in a way which, however beautiful the harmonies of color may be in themselves, can but seem unnatural to literal students of nature.

R.

TREATMENT AND DISPOSAL OF SEWAGE IN CHINA.¹

HER Majesty's Secretary of State for Foreign Affairs has been good enough to obtain, at the request of the Council, the following reports on the treatment and disposal of sewage in China: —

THE TREATMENT AND DISPOSAL OF SEWAGE IN PEKING.

Peking is fairly well supplied by water. In addition to the numerous surface wells within the walls of the city, the water of which is hard and charged, especially during the rainy season, with organic impurities, which percolate the porous sandy soil, there is an abundant supply of purer and softer water, derived from the springs and lakes of the vicinity of the summer palaces, situated at the foot of the western hills, some eight miles distant. A wide stream runs to the northwest angle of the city wall, where it opens out into a large reservoir, in which the water is confined by dams, the surplus supplying the city moat. From this reservoir the water is conducted by a canal which, after passing under the north wall, expands into several large lakes, from which proceed two canals which traverse the Tartar city. The Chinese city is similarly supplied by a small river, which flows from the Nan Haitzur, the vast southern hunting park, and ends in the moat. The water from these sources, after traversing the two cities, ultimately finds its way into the Tungechow Canal.

The sewers intersect the city in a rectangular network, and open into the canals. The wide parallel streets have a large sewer on either side, into which open the smaller sewers from the lanes. The main sewers are square in section, of diameter sufficient to allow a man to crawl through them, and are constructed of large bricks, and covered with a layer of stone slabs. They are intended principally to carry off the flood of rain-water which inundates the city in July and August. This elaborate system, however, is all but useless, having long since fallen into ruin from decay and neglect. Some of the sewers project high above the level of the roadway, gradually worn down by traffic. All are chronically choked with animal and vegetable *débris*. It is the common practice of the inhabitants to remove one of the flagstones in front of their houses, and to throw in all the refuse, solid and fluid, so that the sewer becomes merely a focus of putrefaction. The putrid contents overflow into the streets after rain, and in dry weather are tapped for the purpose of watering the roads. In short, the sewers in their present condition are not only useless, but absolutely prejudicial to the public health.

The only detail of sanitary work which is at all efficiently performed is the removal of faecal matters. The fluid excreta are either poured into the roadway or open sewer, or scattered over the street at sunset to lay the dust; but the solid excreta are most carefully collected, as in all other parts of China, for use as manure. They are removed entirely by the dry method. There are no cesspools in the houses, only a shallow hole lined with bricks, which is emptied daily by the scavenger. This is a regular business and means of livelihood in Chinese cities, and the man with a large wooden tub suspended on his back by means of a wide hoop passing over the shoulder, and a long-handled iron scoop in his hand, is a well-known figure in the streets. He does his work, as a rule, gratuitously, passing from house to house till his tub is full, when he carries it to dispose of the contents at one of the depots or manufactories. Another man wends his way along the public highway, where he also is able to pick up a fair livelihood, for the common Chinaman never scruples to halt by the wayside, even in broad daylight, and in full view of passers-by. The scavenger often digs holes in the ground of the more retired corners within his circuit, for the convenience of the wayfarer and profit of himself.

The matters collected in this way are carried to one of the depots, whence they are conveyed outside the city in wheelbarrows, with a

¹ From the Journal of the Society of Arts.

central wheel of large diameter, and on each side of the wheel a long coarse wicker basket, of the estimated capacity of two cwt. The wheelbarrow is driven by one man, who supports it with a yoke over his shoulders, and is assisted by one or more other men dragging with a rope in front. These baskets are quite open at the top and, being conveyed through the streets at all hours of the day, they are an insufferable nuisance. Within the walls of the city itself, moreover, there are not a few manufactories of manure, and, in fact, any large vacant piece of ground is usually utilized for this purpose. The excreta are first emptied into large holes dug in the ground, then spread over the surface in a layer about an inch thick, and constantly turned over with a spade until they become thoroughly dry. This process takes three or four days, the ground being dry and sandy, and the air remarkably free from moisture during ten months of the year. The manure, when dry, is piled into heaps, and sold retail by the small basket. A ton of this *poudrette* is estimated to sell for about sixteen shillings of our currency, which is the equivalent of a month's wages of a laboring man in this part of China.

It is a principle in native husbandry to apply manure to the plant rather than to the soil. The *poudrette* is sown with the seed or supplied to the root of the growing vegetable before irrigation.

In connection with this subject a condensed note on the comparative prevalence of certain diseases may be appended. Entozoa are very common in China. The natives scrupulously avoid drinking unboiled water, but, on the other hand, they are fond of raw and half-cooked fruit and vegetables. An unusually large proportion of children come to hospital suffering from the pressure of lumbrici. *Tenia* is also often met with, the result of the universal consumption of pork, which is, besides, not infrequently infested with trichina. The pigs are allowed to wander through the streets, and foreign residents are obliged to refrain from native pork. Of zymotic diseases dysentery and diarrhoea are prevalent, and especially dangerous after the rains, and appear to have direct relation with the amount of heat and moisture. Typhoid fever is a rare disease all over China, although typhus, diphtheria, scarlatina, etc., are rampant in the large cities. The rarity of typhoid may be directly due to the system of the removal of human excreta, preventing the contamination of water.

S. W. BUSHELL, B. Sc., M. D., Lond.

Univ. Scholar, Physician to H. B. M. Legation.

PEKING, 13th February, 1878.

TREATMENT OF SEWAGE IN CANTON.

In all parts of the city of Canton there are public latrines erected, consisting of a number of compartments separated by a wooden partition. These are the property of the "Kai-fog," or street organization, who, by the money derived from their rental, contrive to defray a considerable portion of the municipal expenses. The solid and liquid excreta collected separately from these receptacles, which are only used by men, are removed daily to the fields in baskets and buckets. The night-soil from private dwellings is carried away daily by women employed for the purpose, who empty and wash the utensils, and convey the matter to boats built specially for this object, by which it is taken into the agricultural districts, that from Canton going chiefly to the Tungkwan district. The solid excreta are usually partially dried before being used as manure, and are occasionally mixed with ashes. Liquid manure is very largely employed for watering vegetables. Every country village has on its outskirts a pool or tank, on the banks of which latrines are built, and into which the sewage flows. In the winter the liquid is drained off, and the solid deposit at the bottom, which is rich in fertilizing matter, is dried and used as manure.

The sewers in the city of Canton are cleared out triennially by the authorities, and the deposit carried off to the fields. But besides this, the liquid black matter which collects is taken away from time to time, when considered sufficiently rich in fertilizing matter to pay the cost of removal, by men who obtain access to the sewer by removing a stone from the pavement.

The foregoing is all the information I have been able to obtain upon the subject.

H. HANCE,

H. M. Acting-Consul at Canton.

CANTON, March 28, 1878.

TREATMENT OF SEWAGE IN FOOCHOW.

SIR,—In reply to your despatch, No. 1, of the 25th ultimo, on the subject of town sewage, I beg to offer the following information:—

In the town and suburbs of Foochow there are drains under the main streets only, the side lanes being without; the scourgings of the dyers and pulse makers, together with the waters and slops of dwellings and shops, compose a sewage of dark and rich consistency made up from the silting of the river tides which wash the drains. It is much sought after for the purpose of enriching ground set apart for rice cultivation in its natural state. There being none but public privies, human excrement is emptied into the street, and is fetched, in pails, from long distances in the country by gangs of men and women, and then cast into open pits, lined with chunam, until wanted for manure. When diluted with two thirds of urine and water, the market gardeners sprinkle it over the cabbages. Millions of tubs of this description of manure are employed in this way, to quicken the growth of vegetables, potash being in a few instances added to the composition. No part of this valuable manure is lost

in sewers, while the cost of its transport into the country must be enormous.

There is not much difference in the method of manuring in any of the provinces south of the Yellow River.

C. A. SINCLAIR,

H. M. Consul at Foochow.

FOOCHOW, February 28, 1878.

MR. RUSKIN ON COLOR.

Those who were interested in Mr. Ruskin's aphorisms on drawing which we printed in our issue for December 1, 1877, will doubtless find of interest the following excerpt, taken as it is, like the former, from the "Laws of Fésolé," and printed in the *Architect*.

"In my introductory Oxford lectures you will find it stated that 'all objects appear to the eye merely as masses of color'; and that shadows are as full in color as lights are, every possible shade being a light to the shades below it, and every possible light a shade to the lights above it, till you come to absolute darkness on one side and to the sun on the other. Therefore, you are to consider all the various pieces either of shaded or lighted color out of which any scene whatsoever is composed, simply as the patches of a harlequin's jacket, of which some are black, some red, some blue, some golden; but of which you are to imitate every one by the same methods.

"It is of great importance that you should understand how much this statement implies. In almost all the received codes of art-instruction you will be told that the shadows should be transparent, and lights solid. You will find also, when you begin drawing yourselves, that your shadows, whether laid with lead, chalk, or pencil, will, for the most part, really look like dirt or blotches on the paper, till you cross-hatch or stipple them, so as to give them a look of network, upon which they instantly become more or less like shade, or, as it is called, 'transparent.' And you will find a most powerful and attractive school of art founded on the general principle of laying a literally transparent brown all over the picture for the shade, and striking the lights upon it with opaque white.

"Now the statement I have just made to you implies the falseness of all such theories and methods. Essentially, the use of transparent brown by Rubens (followed by Sir Joshua with asphaltum) ruined the Netherland schools of color, and has rendered a school of color in England hitherto impossible. And I mean to assert that falsity in the most positive manner. Shadows are not more transparent than lights, nor lights than shadows; both are transparent when they express space; both are opaque when they express substance; and both are to be imitated in precisely the same manner, and with the same quality of pigment. The only technical law which is indeed constant, and which requires to be observed with strictness, is precisely that the method *shall* be uniform. You may take a white ground and lay darks on it, leaving the white for lights; or you may take a dark ground, and lay lights on it, leaving the darks for darks; in either case you must go on as you begin, and not introduce the other method where it suits you. A glass painter must make his whole picture transparent, and a fresco painter his whole picture opaque.

"Get, then, this plain principle well infixed in your minds. Here is a crocus—there is the sun; here, a piece of coal—there the hollow of the coal-scuttle it came out of. They are everyone but patches of color,—some yellow, some black, and must be painted in the same manner, with whatever yellow or black paint is handy.

"Suppose it, however, admitted that lights and shades are to be produced in the same manner; we have farther to ask, what that manner may best be? You will continually hear artists disputing about grounds, glazings, vehicles, varnishes, transparencies, opacities, oleaginousnesses. All that talk is as idle as the east wind. Get a flat surface that won't crack,—some colored substance that will stick upon it, and remain always of the color it was when you put it on,—and a pig's bristle or two wedged in a stick; and if you can't paint, you are no painter, and had better not talk about the art. The one thing you have to learn,—the one power truly called that of 'painting,' is to lay on any colored substance, whatever its consistence may be (from mortar to ether), at once, of the exact tint you want, in the exact form you want, and in the exact quantity you want. That is painting.

"Now you are well aware that to play on the violin well requires some practice. Painting is playing on a color-violin, seventy times seven stringed, and inventing your tune as you play it! That is the easy, simple, straightforward business you have to learn. Here is your catgut and your mahogany—better or worse quality of both of course there may be—Cremona tone and so on, to be discussed with due care, in due time. You cannot paint miniature on the sail of a fishing-boat, nor do the fine work with hog's bristles that you can with camel's hair; all these catgut and bristle questions shall have their place, but the primary question of all is—*can you play?*

"Perfectly, you never can, but by birth-gift. The entirely first-rate musicians and painters are born, like Mercury; their words are music, and their touch is gold; sound and color wait on them from their youth; and no practice will ever enable other human creatures to do anything like them. The most favorable conditions, the most docile and apt temper, and the unwearied practice of life, will never enable any painter of merely average human capacity to lay a single touch like Gainsborough, Velasquez, Tintoret, or Luini. But to un-

derstand that, the matter must still depend on practice as well as on genius, that painting is not one whit less, but more, difficult than playing on an instrument, and that your care as a student, on the whole, is not to be given to the quality of your piano, but of your touch,—this is the great fact which I have to teach you respecting color; this is the root of all excellent doing and perceiving.

"And you will be utterly amazed, when once you begin to feel what color means, to find how many qualities which appear to result from peculiar method and material do indeed depend only on loveliness of execution; and how divine the law of nature is, which has so connected the immortality of beauty with patience of industry, that by precision and rightness of laborious art you may at last literally command the rainbow to stay and forbid the sun to set.

"To-day, then, you are to begin to learn your notes,—to hammer out, steadily, your first five-finger exercises; and as in music you have first to play in time tune, with stubborn firmness, so in color the first thing you have to learn is to lay it flat, and well within limits. You shall have it first within linear limits of extreme simplicity, and you must be content to fill spaces so enclosed, again and again, till you are perfectly sure of your skill up to that elementary point.

"So far, then, of the manner in which you are to lay your color; next comes the more debatable question yet, What kind of color you are thus to lay, sober or bright? For you are likely often to have heard it said that people of taste like subdued or dull colors, and that only vulgar persons like bright ones.

"But I believe you will find the standard of color I am going to give you an extremely safe one,—the morning sky. Love that rightly with all your heart and soul and eyes, and you are established in foundation-laws of color. The white, blue, purple, gold, scarlet, and ruby of morning clouds are meant to be entirely delightful to the human creatures whom the 'clouds and light' sustain."

NOTES AND CLIPPINGS.

AN EFFICIENT BOARD OF HEALTH.—The Illinois State Board of Health has been in operation one year; has had thirteen meetings in various parts of the State; has issued certificates to 4,950 physicians and midwives, each of which is signed by its seven members; has examined 366 applicants for the license to practice, and rejected 221 of them; has driven 1,200 unqualified practitioners out of the State; has stopped eight colleges from giving two graduating courses in one year; has refused to accept or to recognize the diplomas of eight medical schools; has revoked six certificates for gross unprofessional conduct and advertising; and at its meeting in Decatur, June 27th, authority was given to revoke the certificate of another physician, accused of being an abortionist, in case the facts presented were proven.

EFFECTS OF THE SUTRO TUNNEL.—A reduction in the temperature of the 2000-foot level of the Savage mine, from 120 degrees to 94 degrees, since the Suto tunnel penetrated that mine, is now reported, and the cooling process is still going on. If the air draft through the tunnel into the mines can reduce the temperature 26 degrees in so short a time at a depth of 350 feet below the level of the tunnel, there is a reasonable prospect that it will ultimately have a like good effect upon many other mines put or to be put in communication with the tunnel. Men can work without danger of collapse at a temperature no higher than 94 degrees, and thousands of miners have done good work in the gulches at 110 degrees, but at 120 degrees it is impossible for any man, however strong, to work more than a few minutes without rest. If the Suto tunnel should bring about a like change in the temperature of the Comstock mines generally with that already realized in the Savage 2000-foot level, it will be the means not only of making mining more profitable, but of saving a very great waste of life and health attendant hitherto upon that kind of labor. — *San Francisco Chronicle*.

THE HUDSON RIVER TUNNEL.—It is announced that within a month work will be resumed on the Hudson River Tunnel. The company having been incorporated in both New York and New Jersey, there are two sets of directors, those on this side of the river representing \$7,000,000 of the capital stock and those on the other side \$3,000,000. The old company dug a circular well, twenty-five feet in diameter and thirty feet deep, near the workhouse, and walled it with brick three feet thick. The tunnelling will proceed from this well. It is to be facilitated by the appliance of an air-lock, which will compress the air in a chamber large enough for three men to work in. At one corner of the chamber will be placed a portable funnel, into which dirt and stones will be thrown. The air in the chamber will force the dirt through a long pipe which is to run over the shaft and above the surface of the water to a scow in which it will be carried ashore. With a view of preventing danger from leakage or caving, a brick wall three feet thick, the outer layer of bricks to be chemically prepared to withstand moisture, will be built as fast as the tunnelling proceeds. The grade of the tunnel will be two feet to the hundred, descending from Jersey City; then three feet to the hundred ascending on this side for fifteen hundred feet; and then from that side to the terminus in Washington Square, two feet to the hundred. The top of the tunnel in the centre of the river, where there is a depth of sixty-two feet of water at ebb tide, will be twenty feet below the river-bed. Work will be resumed on the Jersey City side, and will be continued until the tunnel is carried two thirds across the river. This is to facilitate the removal of dirt. Then workmen will be placed on this side, and the work will be completed when the men meet a few rods off the shore. Col. Wm. H. Paine, the engineer, says that it will take two years to complete the work. The directors expect to spend \$10,000,000 upon it. The track will be four miles long. — *Mining and Engineering Journal*.

ARCHITECTURAL DIPLOMAS.—M. Davioud, in his paper on Architects and Engineers which obtained the Prix Bordin, does not countenance the establishment of architectural diplomas.

A TRAPPIST MONASTERY.—A Trappist monk is negotiating for land near Philadelphia on which to build a monastery large enough to contain two hundred monks, who are to be recruited from the Trappist monasteries of Mount Millary in Ireland, Sept-Fonds in France, and Mariastern in Turkey. As these monks number amongst them architects, builders, and craftsmen of all kinds, American mechanics will reap small profit from this new enterprise.

A NEW JOURNAL.—It is reported that an eight-page, fortnightly journal, named the *Art Interchange*, will shortly be published under the supervision of the Society of Decorative Art of New York.

CLEARING QUEBEC HARBOR.—The difficulties in the way of keeping the channels of inland navigation in navigable condition is shown by the operations that have for some time been going on at Quebec. Here one hundred and seventy-five anchors, twenty-four of which were broken, have been recovered by the lifting barge, together with eight thousand fathoms of chain cable. It is thought that as soon as the hulk of the French vessel *L'Original* which was sunk more than a hundred years ago, is either raised or demolished, the river-bed will be once more thoroughly clean.

THREATENINGS OF A SERIOUS STRIKE.—Just at present Londoners are seeking a solution to the old question, *Quis custodiet custodes?* for there seems to be imminent a strike which will cause even more passing inconvenience than did the strike of the Parisian *cochers* which has just ended. The Metropolitan police has as a body become discontented, and a spirit is manifesting itself among them which closely approaches mutiny. The cause of complaint is the low rate of their pay, which is for a first-class constable thirty shillings a week! (\$6.75), certainly a very small sum to pay a man who may at any moment be called on to risk his life as a matter of everyday duty. The matter is a peculiarly delicate one, and unfortunately the authorities seem indisposed to meet the issue fairly, but are trying to put the men off with fair promises. The importance of keeping the police contented will probably prevent the Government from letting things go so far as to allow an actual strike to take place, but the effect of acceding to such a demand on compulsion, even if the demand be a just one, cannot but have a bad effect on the morale not only of the police force but on that of the whole community.

THE HÔTEL DE VILLE, PARIS.—M. Ballu says that, although the work at the Hôtel de Ville, Paris, is making satisfactory headway, it will probably be ten years before it is finished. He thinks that the exterior stonework may all be laid up by 1880.

THE NEW HARBOR FOR BOULOGNE.—The *Scientific American* says that one of the last acts of the French Parliament, before separating for the holidays recently, was to vote nearly \$3,500,000 for the construction of a new deep sea-harbor for this well-known watering place. The chief feature of this harbor is a solid stone jetty on the southwest 2,235 yards long, a wooden jetty on the northeast 1,570 yards long, and a solid stone breakwater 545 yards long on the outer or western boundary. Between this breakwater and the jetty will be two entrances 272 yards wide, and 163 yards wide. In the middle of the harbor will be a stone jetty, 436 yards long and 218 yards wide, alongside of which steamers may embark and land passengers at all hours of the tide. The new port will have an area of 340 acres, and a depth of water varying from sixteen to twenty-six feet at the lowest spring tides. The new port was projected by M. Alexandre Adam, formerly Mayor of Boulogne and ex-President of the General Council of the Pas-de-Calais. The plans adopted are those of M. Staëcklin, Chief Engineer of the Ponts-et-Chaussées.

VENTILATING COWLS.—Mr. W. P. Buchan, a sanitary engineer of Glasgow, says:—

"As the result of the experiments made at Kew by the judges of the Sanitary Institute with ventilators as against plain pipes is still commanding considerable attention, will you permit me to publish the following results, showing the effect the shape of the outlet has upon the speed of the up-current.

I have recently put up at my house a four-inch pipe about thirteen feet in height, and whose top stands about two feet above the ridge. At eight p. m. last night I tried the up-current, first with the plain pipe, then I put an expanding or trumpet-mouthed outlet perpendicularly upon the top of the pipe. This, being tried, was taken off, and a Boyle's ten-inch soil-pipe ventilator with three-inch pipe attached put on; this being also tried, was taken off in turn, and a three-inch Banner's cowl was then tried, and the following are the results, showing the number of feet per minute which each produced of up-current:—

Plain open pipe.	Pipe with trumpet mouth.	Boyle's.	Banner's.
200	400	300	200
240	300	200	170
200	300	200	160

In this case the plain upright pipe with expanding outlet gave much the best results, and when at four p. m. to-day I repeated the experiments, the trumpet outlet gave much the quickest up-current. The plain pipe again gave 200, but Banner's cowl only 200, 170, and 160. The open joint where cowl turn helps to hurt their effect. Yesterday I tried a drain at Dr. Cassell's house, Newton-terrace, here, which has the soil-pipe going up the centre of the house to act as its ventilating shaft, and which soil-pipe carries off the rain-water from the centre gutter; the anemometer showed an in-current of fresh air into the drain through the ventilating trap of 300 feet per minute, but after running hot water down the soil-pipe the in-current rose to 500 feet.

AN ARTIFICIAL MARBLE.—It is said that Miss Hosmer has devised a way of making artificial marble. In this process the subject is sculptured in limestone, and is then placed in a boiler filled with pure water in which it is hermetically sealed and fire is applied. When the pressure indicated by a manometer shows an atmospheric pressure of five or six degrees the water is allowed to cool. The sculpture is then withdrawn and treated in colored baths, alum being, we believe, used as the mordant.